

Chapter 11

Overcoming Biocultural Homogenization in Modern Philosophy: Hume's Noble Oyster



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Abstract The great influence that the eighteenth-century philosopher David Hume had on Darwin's conception of his evolutionary theory offers today a paradigmatic case for advancing an interdisciplinary integration between philosophical and scientific ideas. This interdisciplinary integration offers novel approaches to address some of the complex indirect drivers of current socio-environmental problems, such as biocultural homogenization. The identification of philosophical factors linked to losses of biological and cultural diversity adds to the concept of indirect drivers used by the Millennium Ecosystem Assessment. In this chapter, I undertake three interrelated goals. The first is to expose philosophical concepts and methods that are helpful to understand some complex indirect drivers of biocultural homogenization. The second is to investigate in Hume's work philosophical foundations to overcome the prevailing taxonomic bias that favors only a few vertebrates and to contribute overcoming the exclusion of moral consideration for the most diverse groups of animals inhabiting our planet. My third, and the most general, goal is to demonstrate that it is possible to *de-homogenize* a prevailing negative view about European modern philosophy and to invite readers to discover, instead, some environmental values in Western thinkers and schools of thought that can be key for overcoming taxonomic biases and their associated impact on biocultural homogenization.

Keywords Animals · Darwin · Ethics · Sentient · Taxonomic bias

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11.1 A Potential Philosophical Driver of Biocultural Homogenization

Biocultural homogenization involves a severe reduction in biological and cultural diversity and their interrelations. It causes a reduction in the diversity and abundance of native co-inhabitants (humans and other-than-humans) and their replacement by a few cosmopolitan co-inhabitants and a few global life habits. This reduction involves complex processes of elimination of co-inhabitants from the mind-sets of human colonizers (and/or colonized populations), as much as from their native biophysical habitats.

The identification of cultural-linguistic and biophysical factors linked to losses of biological and cultural diversity echoes the concepts of direct and indirect drivers used by the Millennium Ecosystem Assessment to identify causal agents of anthropogenic change (MEA 2005). Direct drivers are those agents of change that are physical or mechanical processes, whereas indirect drivers are cultural, ethical, and socially related agents of change. As highlighted by Alexandria Poole (2018, p. 317), “understanding the inter-dynamics among culture, values, and lifestyles within the indirect drivers is a complex task that is often demarcated to the humanities or social sciences, fragmenting causal discussions regarding management decisions and ecological knowledge across the disciplines.” According to Stephen Carpenter and collaborators (Carpenter et al. 2006), focusing on indirect drivers remains a pressing research need in the process of linking social to ecosystem change, because most research related to ecosystem management focuses on direct drivers, such as land use change or invasive species. However, effective management requires more attention to indirect drivers such as cultural factors.

Carpenter’s viewpoint is applicable to one of the central goals of our *Biocultural Homogenization* book: to contribute to reorienting this process toward the conservation of biological and cultural diversity. Toward this aim, this chapter analyzes the diversity of all animals included in the work of one of the most influential modern philosophers: David Hume. This eighteenth-century Scottish empiricist had a seminal influence on Charles Darwin’s evolutionary thinking (Huntley 1972). The historical links between Hume and Darwin’s ideas offer a paradigmatic case for the type of integration between philosophical and scientific ideas that we need today to address complex socio-environmental problems (Rozzi 1999). My purpose in this chapter is to find in Hume’s work modern philosophical foundations to overcome the exclusion of moral consideration for the most diverse groups of animals inhabiting our planet.

When the field of environmental philosophy was established in the 1970s, several philosophers concerned with the current biodiversity crisis and the widespread abuse of nonhuman animals criticized and even rejected “conventional Western moral philosophy” as a viable option to address these pressing problems in contemporary society (cf. Passmore 1974; Sessions 1994; Zimmerman 1994). In my view, these criticisms stated in such general terms limit opportunities for finding contrasting environmental values and attitudes, as well as philosophical traditions in Western

civilization; moreover, a given philosophical school or author admits diverse readings and is susceptible to more interpretations than the critics tend to admit (cf. Gare 1995, 1998).

To support this thesis, which is relevant to *de-homogenize modern philosophy*, I will inquire to what extent the work of Scottish philosopher David Hume does, or does not, provide a philosophical foundation to broaden the boundaries of moral consideration beyond humans toward nonhuman animals. First, I will investigate which animals are included in Hume's work and to what extent he proposes that human and nonhuman animals share the attributes of reason and sentience. I chose to focus on animals and these two attributes, because for the two main schools of modern philosophy, any being that deserves moral consideration must have the faculties of reason and/or sentience (cf. Passmore 1975; Midgley 1978; Sorabji 1985; Singer 1993; Palmer 2013). In the second part, I will discuss how Hume's work could provide foundations for a moral consideration of all kinds of animals and more broadly for environmental ethics.

11.2 Hume's Inclusion of Sections on Animals in His Main Works About Human Nature

In his philosophical enterprise to understand human nature, Hume directs his attention to animals in the search for common natural processes.¹ In his main works on human nature, he dedicates an independent section to the "reason of animals": Section XVI of the *Treatise of Human Nature* (T) (Hume 1978), which he expanded a decade after the *Enquiry Concerning Human Understanding* (EHU) (Hume 1976a). Hume proposed his approach in contrast to Cartesian rationalist philosophy that attributed reason only to humans and provocatively opened his Section XVI *Of the Reason of Animals* by writing that:

No truth appears to be more evident, than that beasts are endowed with thought and reason as well as men. The arguments are in this case so obvious, that they never escape the most stupid and ignorant. (T 176)

Later, in Book II of the *Treatise*, Hume extends the resemblance between human and animal nature to the origin of the passions. He dedicates two particular sections to it: "Of the pride and humility of animals" (in Part I) and "Of the love and hatred of animals" (in Part II). In this manner, Hume provides a bridge between human and animal reason and emotions, which would leave behind Cartesian dualistic distinctions. However, which animals does Hume consider in his analogical thinking?

¹Because Hume dedicates separate sections in THN and EHU to humans and [other] animals, I will maintain Hume's language in some passages of this paper, by referring to humans and animals. However, for my own analyses, I understand humans as another animal species.

11.3 In Hume's Work: Which Animals Share with Humans Attributes of Reason and Sentiency?

Rephrasing from a contemporary scientific evolutionary perspective, to what extent can Hume's analogy between humans and other animals be projected along the evolutionary tree? Which kind of animals are mentioned by Hume? Two basic branches of animal types associated with the scientific evolutionary tree correspond to the vertebrate and invertebrate divisions. Hence, a basic first question is: Do Hume's analogies apply to both vertebrates and invertebrates?

In the sections of the *Treatise* and the *Enquiry* dedicated to animal reason, Hume provides only a few examples of animals and only vertebrates. However, when he makes general statements about reason and sentience, Hume expresses them in such a way that enables us to extend them to the whole animal kingdom. For example, when Hume introduces the topic of animal reason in Book I of the *Treatise*, he writes:

We are conscious, that we ourselves, in adapting means to ends, are guided by reason and design, and that 'tis not ignorantly nor casually we perform those actions, which tend to self-preservation, to obtaining pleasure, and avoiding pain. When therefore we see *other creatures, in millions of instances*, perform like actions, and direct to like ends, all our principles of reason and probability carry us with an invisible force to believe the existence of a like cause. 'Tis needless in my opinion to illustrate this argument by the enumeration of particulars. The smallest attention will supply us with more than are requisite. The resemblance betwixt the actions of animals and those of men is so entire in this respect, that *the very first action of the first animal we shall please to pitch on*, will afford us an incontestable argument for the present doctrine. (T176) [emphasis added]

Hume affirms here that examples are unnecessary; it is needless to enumerate particular animals to prove that animals share "a like cause" with humans. The analogy between human and animal reason seems to Hume such a general phenomenon that the "very first action of the first animal" we may look at would confirm the resemblance between animal and human actions. Therefore, we can conclude that when Hume suggests that "a like cause" that "guide[s] reason and design," his analogical thinking could be applied to all three: human, vertebrate, and invertebrate animals.

This interpretation is, however, in marked contrast with the actual examples of animals that Hume provides to develop his analogy. For example, at the beginning of the section "Of the Reason of Animals" in the *Treatise*, Hume gives only two examples, and both correspond to vertebrates:

Here we must make a *distinction betwixt* those actions of *animals*, which are *of a vulgar nature*, and seem to be on a level with their own capacities, and those more extraordinary instances of *sagacity*, which they sometimes discover for their own preservation, and the propagation of their species. *A dog*, that avoids fire and precipices, that shuns strangers, and caresses his master, affords us an instance of the first kind. *A bird*, that chooses with such care and nicety the place and materials of her nest, and sits upon her eggs for a due time, and in a suitable season, with all the precaution that a chymist is capable of in the most delicate projection, furnishes us with a lively instance of the second. (T177) [emphasis added]

This passage seems to contradict Hume's previous statement about the futility of examples. First, he defines a hierarchy among animals: vulgar and sagacious. Second, he illustrates the analogy between human and animal reason only with a mammal and a bird (the most "evolved" or "sagacious" vertebrates). Hume maintains the trend of mentioning only vertebrates, particularly mammals with the general term of "beasts,"² throughout the section on "Animal Reason," concluding that:

[L]et any philosopher make a trial, and endeavor to explain that act of mind, which we call belief, and give an account of the principles, from which it is derived, independent of the influence of custom on imagination, and *let his hypothesis be equally applicable to beasts as to the human species*; and after he has done this, I promise to embrace his opinion. (T178) [emphasis added]

In Book II of the *Treatise*, in the sections dedicated to the passions of animals, Hume provides again general statements that allude, at least potentially, to all animal species (invertebrates included), but his specific examples are restricted to birds and mammals. For instance, in the section "Of the Pride and Humility of Animals," he writes:

It is plain, that almost in *every species of creatures*, but especially of the nobler kind, there are many evident marks of pride and humility. The very port and gait of a *swan*, or *turkey*, or *peacock* show the high idea he has entertained of himself, ... The vanity and emulation of *nightingales* in singing have been commonly remarked; as likewise that of *horses* in swiftness, of *hounds* in sagacity and smell, of the *bull* and *cock* in strength, and of *every animal* in his particular excellency. (T326) [emphasis added]

However, at the end of the section that includes the former paragraph, after mentioning only examples of birds and mammals, Hume seems to privilege his general statement alluding to all animal species. He concludes categorically that: "All these are evident proofs, that pride and humility are *not merely human passions*, but *extend themselves over the whole animal creation*." [emphasis added].

To clarify Hume's puzzle about which animals can be considered in his analogies, I prepared a synthesis of the specific examples of animals that Hume gives throughout the *Treatise* and the *Enquiry*, as well in his other writings. Table 11.1 includes all references to animals I found in Hume's complete works by using the search tools of the Past-Masters CD (Hume 1948, 1976a, b, 1978, 1995). In Table 11.1, a conspicuous feature strikes us immediately: vertebrate animals fill most of the table. Among vertebrates, in turn, the bias toward birds and mammals is evident. This conspicuous inclination toward vertebrates is consistent throughout the different works: the *Treatise*, both *Enquiries* and Hume's letters, and other published works.

Table 11.2 presents a quantitative analysis of the animals detailed in Table 11.1, providing the total numbers and relative percentages for each species or kind of animals. These "species or kinds" of animals do not necessarily correspond with the concept of biological species, because they include different taxonomic categories. If we use our contemporary biological taxonomic criteria, we find that Hume refers

²The eighteenth-century *Samuel Johnson's Dictionary* defines beast as "an animal distinguished from birds, insects, fishes, and man" (see Reddick 1996).

Table 11.1 Animals found in Hume's *Treatise of Human Nature* (T), *An Enquiry Concerning Human Understanding* (EHU), *An Enquiry Concerning the Principles of Morals* (EPM), other published works, and letters

Animal taxa		Animals mentioned by David Hume			
Animal taxa	Animal taxa	T ^a	EHU ^a	EPM ^a	Other works and letters ^b
<i>Invertebrates</i>	Mollusca	Oyster (634)	–	Snail (footnote 24)	Cockle [1], oyster [1]
	Arthropoda	Insect (28), mite (28)	–	–	Bee [1], butterfly [1], drone [1], flea [1], fly [2], insect [2], silkworm [2]
	Fishes	Fish (303)	Fish (104)	–	Eel [1], fish [12], herring [2], lampreys [3], salmon [1], shad [1], sprat [1]
<i>Vertebrates</i>	Amphibia	–	Frog (104)	–	Frog [1]
	Reptiles	–	–	Serpent (179, 271), tortoise (273)	Chameleon [1], crocodile [2], serpent [2], snake [1], turtle [1]
	Birds	Bird (177, 284), cock (326), crow (451), magpies (451), nightingale (326, 485), partridge (451), peacock (326), pheasant (451), plover (452), swan (326), Turkey (326), woodcock (452) ^c	Bird (108), dove (271)	Pigeon (198)	Bird [3], chicken [5], cock [4], crow [2], dove [1], duck [1], eagle [1], gamecock [1], goose [6], fowl [1], hawk [1], hen [6], ibis [1], kite [1], magpie [1], nightingale [2], partridge [6], peacock [2], pheasant [4], pigeon [6], plover [1], pullet [2], swan [2], Turkey [2], woodcock [2]

	Mammals	Bull (326), cat (398), dog (177, 279, 327, 397, 398, 660), horse (10, 279, 310, 326, 378, 385, 397, 398, 529, 557, 576, 660), hound (310, 326), ion (398, 484), ox (397, 398, 484, 485), sheep (484, 485), tiger (398)	Dog (105), greyhound (105), hare (105), horse (19, 47, 48, 105, 129, 179), lion (28), tiger (28)	Hare (237), horse (244, 310), wolf (179, 271)	Ape [2], ass [5], bear [2], bitch [1], boar [4], buck [1], bulldog [2], bull [8], camel [1], capon [1], cat [11], cow [7], deer [7], dog [27], elephant [1], fox [2], hare [4], heifer [1], hog [5], horse [199], hound [2], lamb [4], lion [4], monkey [3], mouse [2], nag [1], ox [6], pig [2], rabbit [1], ram [2], rat [1], rhinoceros [1], sheep [13], sow [1], stag [1], swine [1], tiger [2], veal [1], wether [2], whale [1], wolf [5]
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^aNumbers within round parenthesis indicate the page numbers for the occurrence of each kind of animal species in Hume's works (including his letters) in which they are mentioned

^bNumbers within square parenthesis indicate the total number of paragraphs in Hume's work in which each kind of animal occurs. The list and sums of kinds of animals found in Hume's written documents was elaborated on the basis of the text and computational tools provided by the Complete Works of David Hume in "Past Masters". (CD-ROM, Charlottesville VA: InteLex Corporation, Hume 1995)

Table 11.2 Total numbers of occurrences of vertebrate and invertebrate groups of animals in Hume’s texts. The columns “kind of animal” provide an indicator for the diversity of animals mentioned by Hume. The columns “total occurrences” provide the total number of paragraphs within Hume’s work in which a member of each animal group is mentioned and is proposed as an indicator of the “abundance” of each group of animals. The percentage (%) is calculated as the number kinds of animals or occurrences within each animal groups divided by the total number of kinds of animals or occurrences, respectively. On the left part of the table, the values for the *Treatise* (T), the *Enquiry concerning Human Understanding* (EHU), and *An Enquiry concerning the Principles of Morals* (EPM) are indicated

Group of animals	Numbers and relative percentages of animals mentioned by David Hume							
	T + EHU + EPM				Hume’s complete works			
	Number of kinds	(%)	Total occurrences	(%)	Kinds	(%)	Total occurrences	(%)
Invertebrates								
Mollusca	2	5.9	2	2.7	3	3.2	4	0.8
Arthropoda	2	5.9	2	2.7	9	9.7	12	2.3
Subtotal	4	11.8	4	5.4	12	12.9	16	3.0
Vertebrates								
Fishes	1	2.9	2	2.7	7	7.5	23	4.4
Amphibian	1	2.9	1	1.4	1	1.1	2	0.4
Reptiles	2	5.9	3	4.1	6	6.5	10	1.9
Birds	14	41.2	17	23.0	25	26.9	81	15.4
Mammals	12	35.3	47	63.5	42	45.2	394	74.9
Subtotal	30	88.2	70	94.6	81	87.1	510	97.0
Total	34	100.0	74	100.0	93	100.0	526	100.0

sometimes to “supra-specific taxonomic categories” – such as families (i.e., kite, eagle), orders (i.e., butterfly, frog), and classes (bird, insect) – or “infra-specific taxonomic categories,” such as races (i.e., bulldog and greyhound), gender (i.e., cock and hen), development stages (i.e., lamb and sheep), fertility condition (i.e., bull and ox), or linguistic synonyms (i.e., dog and hound) that belong to the same biological species. (To minimize confusion about Hume’s taxonomic categories, I unify them under the term “kinds” of animals.) The disparity between Hume’s and contemporary biological taxonomic categories does not obscure the impressive inclination in favor of vertebrates: they constitute between 87% and 97% of the examples given by Hume in different works.

In his complete writings, including his letters, Hume refers to 93 kinds of animals (Table 11.2). Among these, approximately 90% correspond to vertebrates. Among vertebrates, mammals and birds are markedly dominant: they alone account for more than 70% of the animal kinds mentioned by Hume. When we focus on total number of occurrences (considering repetitions of the same kind of animal), then the bias toward vertebrates, particularly mammals and birds, is even more marked. Of the 526 occurrences of animals found in Hume’s complete work, 97% correspond to vertebrates. Moreover, among the 510 mentions of vertebrates, two animals account for more than 50%: the horse (43%) and the dog (8%).

Table 11.3 World's total numbers of animal species that have been described and scientifically accepted (Chapman 2009)

Group of animals	Number of species	(%)
<i>Invertebrates</i>		
Mollusca (snails, oysters, etc.)	~85,000	6.0
Arthropoda (insects, arachnids, etc.)	1,175,873	82.6
Other invertebrates (sponges, worms, etc.)	101,465	7.1
<i>Subtotal</i>	<i>1,362,338</i>	<i>95.6</i>
<i>Vertebrates</i>		
Fishes	31,269	2.2
Amphibia	6515	0.5
Reptiles	8734	0.6
Birds	9990	0.7
Mammals	5487	0.4
<i>Subtotal</i>	<i>61,995</i>	<i>4.4</i>
<i>Total</i>	<i>1,424,333</i>	<i>100.0</i>

This analysis of animals that Hume mentions in his works shows that his mind-set is not only vertebrate-centric but also mammal-centric, with an unbalanced focus on horses and dogs. Hume's taxonomic bias could be a symptom, as well as a driver, of a general trend in modern European culture that tends to focus on, and favor, a few mammals. This narrow focus on mammals collides with the actual diversity of animals. Among animals, less than 5% are vertebrates (Table 11.3). Moreover, invertebrates not only represent more than 95% of all known species, but they also include 30 phyla, while vertebrates include only one phylum: Chordata (Mora et al. 2011).³

Conservation biologists have criticized that more than 95% of the animal species correspond to a group almost completely neglected by modern philosophy, as well as by conservation biology literature: the invertebrates (Wilson 1988; Clark and May 2002). Only 1% of the described animal species correspond to "higher" mammals or birds. The "rest" represent 99% of animal diversity and includes cold-blooded vertebrates (or ectotherms – fishes, amphibians, and reptiles) and invertebrates, which contribute slightly more than 3% and 95% of animal species, respectively (Table 11.3). This philosophical bias toward "higher vertebrates" seems to be more marked when we introduce the evolutionary temporal dimension, because compared to the 700-million-year-old invertebrates, "higher mammals" are recent newcomers (Rozzi 2001).

Hume could be condemned for promoting biocultural homogenization, due to the drastic reduction in the spectrum of kinds of animals that he mentions in his work. He is one of the most influential philosophers in modern schools of thought, and the fact that most of the animals inhabiting the planet are not considered in his

³Of the 30 phyla of invertebrates that are known to science, only 2 are included in Hume's examples of invertebrates: Mollusca (oysters, cockles, snails) and Arthropoda (insects [bees, drones [male bees], butterflies, fleas, flies, silkworms], mites) (see Table 11.1).

philosophical arguments might have influenced a reduction in the spectrum of animals included in modern culture. Through colonialism, European culture, including Hume's philosophy, has been disseminated worldwide. Under this influence, students and citizens remain blind about the philosophical and particularly ethical values of most animal species on planet Earth.

If the previous reasoning would exhaust Hume's work, then the work of this philosopher should be "thrown into the flames"⁴ for two reasons. First, there is an obvious dissociation between the empirical evidence about the diversity of animals and the representation of this diversity in his examples. Second, Hume's taxonomic bias, his vertebrate-centrism, might have dire consequences for the relationship between human beings and most animals and lead to processes of drastic biocultural homogenization.

The purpose of our book on *Biocultural Homogenization* is, however, not only to criticize this process but also to explore options to reorient it toward processes of conservation of biological and cultural diversity. In that vein we ask: Could we find in Hume's work some fracture in his vertebrate-centrism? Could we find in Hume's work a broader philosophical foundation that would justify ethical consideration of a wide spectrum of vertebrate and invertebrate animals?

11.4 Hume's Noble Oyster

The results presented in the former section seem to threaten the thesis that Hume's analogy between animal and human reason would be applicable to the "whole animal kingdom." However, let's give him a historical release for the taxonomic bias in his examples of animals. Hume's bias could be associated with historical circumstances, such as the prevalence of vertebrates in eighteenth-century sciences (see Bowler 1993). Hence, before rejecting the thesis that Hume's analogy between human and animal nature is applicable to both invertebrates and vertebrates, we should analyze his few examples of invertebrates.

In the *Treatise*, Hume refers to invertebrates only three times. Two of them (an insect and a mite) appear in a section on *the infinite divisibility of our space and time*, which says nothing about their capacity for reason and sentience. However, Hume's third invertebrate example appears at the end of the *Treatise* and corresponds to an oyster used to illustrate the case of an animal provided with the lowest potential for having a mind. Hume writes:

⁴Hume concluded his *Enquiry Concerning Human Understanding* (p 166) by stating that: "If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, Does it contain any abstract reasoning concerning quantity and number? No. Does it contain any experimental reasoning concerning matter of fact and existence? No. *Commit it then to the flames*, for it can contain nothing but sophistry and illusion" (emphasis added). This passage has played a crucial role in the appropriation of Hume's philosophical legacy by twentieth-century positivist philosophers (see Frasca-Spada 1996).

We can conceive a thinking being to have either many or few perceptions. Suppose the mind to be reduced even below the life of an oyster. Suppose it to have only one perception, as of thirst or hunger. (T634)

This passage represents a radical statement by Hume: the oyster, an animal that lacks any obvious resemblance to the human body, much less to human behavior, is still considered by Hume as deserving a mind. The thinking or sentient oyster: What a shock for British society accustomed to knowing about this animal only on their dinner plates! Hume is radical because nothing stops him in his empiricist project, and therefore he is able to conceive a thread that links all animals, from the highest to the lowest, even below the life of an oyster. In connecting the processes of perception and behavior among diverse animals, Hume affirms:

There are also instances of relation of impressions, sufficient to convince us, that there is a union of certain affections with each other in the inferior species of creatures as well as in the superior, and that their minds are frequently conveyed through a series of connected emotions. (T327)

Although Hume conceives a hierarchy among animals that places humans at the top, he proposes that even the few perceptions of the lowest living animals – such as the oyster's thirst or hunger – rely on processes that operate in kindred ways among higher animals, such as vertebrates, humans included. The elegance of the argument and the radical departure of Hume's imagination from his social environment incline me to accept his previously quoted claim that it is “needless to illustrate this argument by the enumeration of particulars.... The resemblance betwixt the actions of animals and those of men is so entire in this respect, that the very first action of the first animal we shall please to pitch on, will afford us an incontestable argument for the present doctrine.” In Hume's view an oyster adapts “means to ends” struggling for self-preservation, to obtain pleasure and avoid pain, “guided by reason and design” in a way comparable to birds (such as swans, turkeys, peacocks, nightingales) or mammals (such as horses, hounds, or bulls).

The disproportion of examples in favor of the better known vertebrates can lead to misleading interpretations concerning the extent of Hume's analogy. For example, the ethologist William Homan Thorpe (1979) writes:

David Hume held it be self-evident that the *beasts*, as brothers of men, were endowed with thought and reason.... Naturalists had by that time [the last quarter of 19th century] generally accepted the conclusion of David Hume's *A Treatise of Human Nature* that *higher animals* use the same principles of intel.

Thorpe addresses the relevance of Hume for the origins of ethology. However, Thorpe's interpretation restricts the extension of reason to beasts or higher animals. This represents a serious mistake because it overlooks the refinement of Hume's argument tracing the analogy throughout the “whole animal creation.” Moreover, it reduces the scope of animals actually or potentially considered by Hume. Blinded by the abundance of references by Hume to higher vertebrates, Thorpe cuts the invertebrates' limb off the ethological “tree of animals.” This amputation is not only problematic for its scientific consequences but also for our moral consideration for invertebrates. In Thorpe's work, oysters, butterflies, or silkworms are not conceived

as being capable of suffering pain and pleasure, even less as “thinking beings having either many or few perceptions,” as Hume sagaciously did two centuries earlier.

Hume’s perspective dissolves the conceptual discontinuities between human and animal nature, and he highlights that “a theory about the operation of human understanding will acquire further authority if proved for nonhuman animals.” In this way, Hume stimulated the search for common biological processes, including the investigation of the biological origin of all living beings – humans included.

11.5 The Influence of Hume on Darwin: The Common Evolutionary Origin of Human and Nonhuman Animals

To propose that Hume’s conception of a common biological nature laid the groundwork for the development of the Darwinian evolutionary theory may seem merely speculative. However, we can find historical evidence for its support. In Charles Darwin’s personal notebooks, David Hume is the most quoted philosopher.⁵

The Humean influence on the conception of Darwin’s evolutionary theory can be further tracked back to Charles’ grandfather, Erasmus Darwin. For his physiological psychology, Erasmus followed Hume’s distinction of “three classes of associated ideas, based on contiguity, causation, and resemblance” (Logano 1972, p 43). Essential to my argument is that Charles Darwin’s grandfather quoted Hume’s posthumous book *Dialogues Concerning Natural Religion* when providing his first unequivocal evolutionary pronouncement (cf. Harrison 1971). Erasmus Darwin (1794) wrote in his main work *Zoonimia* that:

[T]he late Mr. David Hume... concludes that the world itself might have been generated rather than created; that is, it might have been gradually produced from very small beginnings, increasing by the activity of its inherent principles, rather than by a sudden evolution of the whole by the Almighty fiat. (pp 245–246)

Erasmus Darwin’s statement resembles closely the thoughts of Philo, Hume’s skeptical character in the *Dialogues Concerning Natural Religion*. Part VII of that book begins with the following “discovery” by Philo:

In examining the ancient system of the soul of the world, there strikes me, all on a sudden, new idea, which, if just, must go near to subvert all your reasoning... If the universe bears a greater likeness to animal bodies and to vegetables, than to the works of human art, it is more probable that its cause resembles the cause of the former than that of the latter, and its

⁵Major historian on the development of evolutionary theories, Robert Richards (1989), has described David Hume as “Darwin’s favorite philosophical author.” Philosopher Edward Manier (1978) attempted a quantitative analysis of the incidence of different philosophers on Darwin’s thought by composing a table, which provides the numbers of quotes for each philosopher mentioned by Darwin in his notebooks. In Manier’s table, Hume ranks first with nine quotes. Five other philosophers appear below Hume in Darwin’s notebooks ranking of frequency: Auguste Comte (eight quotes), David Hartley (six quotes), Dugald Stewart (six quotes), William Paley (two quotes), and Immanuel Kant (one quote).

origin ought rather to be ascribed to generation or vegetation than to reason or design. (DCNR, p 176)

Via Philo the “late Mr. Hume” planted the germ for the evolutionary theory in Darwin’s family. The grandson, Charles Darwin, was however reluctant to quote Hume in his published work. A footnote in *The Descent of Man* constitutes Darwin’s single public citation of Hume. This scarcity of references to Hume could be associated with a well-established aspect of Darwin’s personality. He avoided publicizing his controversial considerations on human evolution and delayed as long as possible his publication of *The Descent of Man*.⁶ In fact, the publication of that book revolted Victorian society far more than the *Origin of Species*. Darwin was aware of the theological implications of his theory and wanted to elude further controversies, which could have occurred by referring to the atheist philosopher par excellence. As historian William Huntley (1972, p 465) surmised “Darwin (and Lyell) did not wish to introduce a host of unwanted implications that the mentioning of the name Hume would suggest to some readers.”

In contrast to his public writing, Charles Darwin did not hesitate to quote Hume in his personal notebooks, which contain insightful records. In August 1838, just 2 weeks before coming up with his fundamental evolutionary mechanism of natural selection, Darwin wrote in his personal notebooks (1836–1844) that “Hume’s essay on the Human Understanding [is] well worth reading.” The temporal contiguity between Charles Darwin’s readings of Hume and his conception of the evolutionary mechanisms is astonishing. Later, during the spring of 1839, when Darwin continued to work on the formulation of his evolutionary theory, he added several notes on Hume in his notebooks M and N dedicated to the topics “Man, Mind and Materialism.” In Table 11.4, I summarize all quotes that Charles Darwin made of Hume in his personal notebooks. These quotes provide ample evidence for how the father of the modern theory of biological evolution was inspired by Hume’s *Enquiries, A Treatise, Natural History of Religion, Dialogues, The Dissertation on the Passions, The Sceptic*, and other essays, at the moment he was conceiving his evolutionary theory.

Darwin’s entries on January 1839 refer to the section *Of the Reason of Animals* in Hume’s *Enquiry* that I discussed above and to Sect. XV of Hume’s *Dialogues Concerning Natural Religion*. The latter corresponds to the same work in which Philo says that “the world might have generated rather than created,” inspiring Charles’ grandfather’s idea of evolution. Thus, Hume’s skeptical character touched the imagination of both Darwin’s grandfather and grandson. But the grandson went further and collected the empirical data required by Philo.

Part II of the *Dialogue Concerning Natural Religion* concludes with Philo’s questions to Cleanthes: “Can you pretend to show any (such) similarity between the fabric of a house, and the generation of a universe? Have you ever seen nature in any such situation as resembles the first arrangement of the elements? Have worlds ever

⁶ John T. Bonner and Sir Robert M. May (Bonner and May 1981) elegantly develop this point in their introduction to *The Descent of Man* by Charles Darwin.

Table 11.4 Quotes of Hume made by Charles Darwin in his personal notebooks and published works. In parenthesis the page numbers for the edition of *Charles Darwin's Notebooks* by Barret et al. 1987* and for *The Descent of Man* by Princeton University Press (1981), which reproduces the first edition of the work in 1871. The dates for the entries in the notebooks were defined as the month mentioned in the actual entry or in the first previous entry found. The date for *The Descent of Man* is the publication date, and not the date when Darwin wrote his quote on Hume, as in the dates given for the entries of the notebooks

Source	Date	Darwin's Quotations of Hume
Notebook M, entry 104 (p.545)	August 1838	"As some impressions 'Hume' become unconscious. So may some ideas.- ie habits, which must require idea to order muscles to do 'certain' the actions."
Notebook M, entry 155 (p.559)	September 1838	"Hume's essay on the Human Understanding well worth reading"
Notebook C, entry 270 (p.321)	October 1838	"Hume's do, with correspond. With Rousseau"
Notebook C, entry 267 (p.325)	January 1839	"Hume's essay on H. Understanding (some time)"
Notebook O, entry 52b (p.627)	May 1839	"Hume's Inquiry—good abstract of Butler & arguments of beneficial tendency of affections."
Notebook N, entry 101 (p.591)	July 1839	"Hume has section (IX) on the Reason of Animals. Essays Vol. 2"
Notebook N, entry 101 (p.591)	July 1839	"Also on origin of religion or polytheism, at p. 424 Vol.II "Sect XV Dialogues on Natural Religion. " however, he seems to allow it as an instinct."
Notebook N, entry 101 (p.592)	July 1839	"I suspect the endless round of doubts and skepticism might be solved by considering the origin of reason. As gradually developed. See Hume on Skeptical Philosophy "[Of the Skeptical and Other Systems of Philosophy]"
Notebook N, entry 101 (p.592)	July 1839	"Hume has written 'Natural Hist. Of Religion' and its origin in the Human mind."
Notebook N, entry 184 (p.595)	April 1840	"'Adam Smith Moral Sentiments' much on life & Character" "'Hume's Dissertation on the Passions' [A Dissertation on the Passions]"
<i>The Descent of Man</i> (p.85)	February 1871	"Hume remarks ('An Enquiry concerning the Principles of Morals,' edit 1751, p.132), 'there seems a necessity for confessing that the happiness and misery of others are not spectacles altogether indifferent to us, but that the view of the former ... communicates a secret joy; the appearance of the latter ... throws a melancholy damp over the imagination.'"

*I performed the search of quotes on Hume in Darwin's work by looking at the available concordances for *The Origin of Species*, *The Descent of Man*, *The Expression of the Emotions in Man and Animals*, and most importantly the personal notebook that Darwin kept between the years 1836 and 1844 (edited by Barret et al. 1987). I also reviewed *The Voyage of the Beagle and The Autobiography* of Charles Darwin. In total, I found 11 quotes. Only one of these was found in a published work (*The Descent of Man*). All the remaining quotes were found in Darwin's personal notebooks, most of them in the M and N notebooks. Gruber (1974) described the subjects of these notebooks as M: "Metaphysics-Morals and Speculation on Expression" and N: "Metaphysics and Expressions Selected for Species and Theory." Three other quotes are found in his notebooks C and O, which deal with evolution in general.

been formed under your eyes?... If you have, then cite your experience, and deliver your theory” (DCNR p151). Cleanthes' creationist argument surrenders when confronted with Philo's challenge. Cleanthes could not refer to any experience to answer Philo's questions, and in consequence could not prove his analogy between the creation of the universe and the creation of a house. Furthermore, the dissimilarity between the two events is too striking to be acceptable for Philo, who says:

If we see a house, CLEANTHES, we conclude, with the greatest certainty, that it had an architect or builder; because precisely that species of effect, which we have experienced to proceed from that species of causes. But surely you will not affirm, that the universe bears such a resemblance to a house that we can with the same certainty infer a similar cause. (DCNR 144)

Philo continues developing an argument based on Hume's central principle “like effects arise from like causes” and arrives in Part VII to a more tenable analogy. In the passage that inspired Darwin's grandfather, Philo affirms that:

[I]f the universe bears a greater likeness to animal bodies and to vegetables, than to the works of human art, it is more probable that its cause resembles the cause of the former than that of the latter, and its origin ought rather to be ascribed to generation or vegetation than to reason or design. (DCNR, VII, 78)

Another character of the *Dialogues*, Demea, challenged Philo's conclusion that the universe was generated rather than created, by asking “What *data* have you for such extraordinary conclusions?” (DCNR, p 80, emphasis added). Philo concedes here saying that “I have still asserted, that we have no *data* to establish any system of cosmogony” (DCNR, p 80, emphasis added). This is the task that Hume's character Philo left for Charles Darwin: amassing the data through which the process of generation may be deduced.

Sixty years after Philo's words were published, Charles Darwin wrote in his personal notebook that “we can allow ‘satellites,’ planets, suns, universes, nay whole systems of universes ‘of man’ to be governed by laws, but the smallest insect we wish to be created at once by special act, provided with its instincts its place in nature” (N36). We can interpret Darwin's statement as a development of Philo's statement: if the universe bears a likeness to animal bodies and to vegetables, then its origin ought rather to be ascribed to generation or vegetation than to reason or design.

In order to elaborate his own evolutionary theory based on a natural mechanism for the generation of the diversity of living beings, Darwin needed – as much as Philo did – to supplant the prevailing explanation based on creation by design. Darwin's entry on November 27, 1838, expresses that:

Arguing from man to animals is philosophical, viz.; man is not a cause like a deity... because if so *ourang outang* [sic], *oyster* & *zoophyte*. (N49, emphasis added)

In this note Darwin affirms conclusively that human beings are not created by God, when he says “man is not a cause like a deity.” Darwin sees no reason to attribute a different origin to nonhuman and human animals. He also knows that nonhuman animals are naturally generated – not specially created by God. Therefore, humans

are naturally generated too. Like Hume, Darwin concludes that the same process of generation “applies to the whole animal kingdom.” The origin of humans, orangutans, oysters, and zoophytes – i.e., living beings that are placed in the evolutionary tree below the oyster – is explained by the mechanism.

The oyster that seemed to be an isolated case in Hume’s work acquires a notable role in Darwin’s reflections on the extent to which human and nonhuman animal’s properties are shared. In his Notebook N, Darwin wrote:

Origin of cause & effect being a necessary notion ... connect[s] ... ‘our’ willing [with that] of the simplest animal, as hydra toward light...The Cyanocephalus [a monkey] when fondling the keeper, clasping ‘& rubbed’ his arms & show signs of affecting something *like man*. *Has an oyster necessary notion of space*. (N12–13, emphasis added)

In this note, Darwin searches and finds again, based on the Humean principle “like causes, like effects,” common properties concerning perception and behavior shared by humans, monkeys, oysters, and animals below the oyster, such as the hydra. In this entry, Darwin seems to examine the possibility of extending one of the two Kantian *a priori* forms of sensibility – space – beyond humans to the oyster and hence to the whole animal kingdom. Darwin not only extends one of the Kantian necessary transcendental forms of human sensuous intuition to the oyster, but he proceeds to explore links between free will, the highest faculty of humans. Free will is examined by Darwin in nonhuman bizarre aquatic animals, when he writes in Notebook M:

With respect to free will, seeing a puppy playing cannot doubt that they have free will, if so *all animals*, then an *oyster* has & a *polype*... now *free will of oyster*;...[is the] *direct effect of organization, by the capacities its senses give it of pain or pleasure*. (M72, emphasis added)

Darwin associates here free will with the capacity of feeling pain or pleasure, which results from an organization shared by all living organisms (in other entries of Darwin’s notebooks, plants are included as well). In this manner, Darwin definitively extends sentiency to all animals. Like Hume, the naturalist includes in his note a dog, an oyster, and a living being that is evolutionary placed “below an oyster,” the polyp (or coral). In the hand of Darwin, Hume’s analogy between human and animal nature is undoubtedly applied to all animals: vertebrates and invertebrates, terrestrials and aquatics.

Through the development of the theory of biological evolution, Charles Darwin and numerous other biologists furnished the *data* requested by Demea of Philo, in Hume’s *Dialogues Concerning Natural Religion*. The Darwinian theory of a common origin for all living forms, including human, was inspired and stimulated by Hume’s philosophy. In turn, Darwinian theory provided the empirical support requested by Hume’s philosophy. Abundant evidence based on cellular theory, comparative anatomy and physiology, and development biology offered the necessary support for the understanding of humans as one biological species among many. *Homo sapiens* was classified as an animal which shares its origin, embryological development, physiological functions, and anatomical structures to various degrees, with the rest of biological species placed in diverse branches of the evolutionary “tree of life.”

11.6 Concluding Remarks

The proposition of a common nature shared by all animals developed by Hume and Darwin unsettled not only Victorian society; today it still challenges ethical deliberations concerning our relations with animals. When Peter Singer (1975) published his influential book *Animal Liberation*, he introduced it by stating that his attempt was “to think through, carefully and consistently, the question of how we ought to treat non-human animals... A liberation movement is a demand for an end to prejudice and discriminations based on an arbitrary characteristics like race or sex” (pp xii-xiii). Later in the book, when Singer argues for vegetarianism, he asks: “How far down the evolutionary scale shall we go? Shall we eat fish? What about shrimps? Oysters?” (Singer 1975, p 176). And Singer’s answer is: “Oysters, ... and [other] mollusks are in general very primitive organisms... Most mollusks are such rudimentary beings that it is difficult to imagine them feeling pain, or having other mental states” (Singer 1975, p 179).

The answers that Hume or Darwin might have given to the oyster question are more radical than Singer’s. For both the modern philosopher and the founder of the modern evolutionary theory, oysters and organisms “even below the oyster” do have some mental states and sentience. Hume’s principle of “like causes, like effects” permits a closer relation between oysters and humans than Singer’s argument. Darwin and other evolutionary biologists supported Hume’s perspective by providing vast empirical evidence. Humans and oysters are sentient organisms that share a common evolutionary origin. Based on comparative anatomy and other observation of the oyster’s organization, Darwin not only attributed to these organisms the capacity of feeling pain or pleasure, but he even speculated about the oyster’s perception of space.

Intimately, Hume links not only the nature of human and nonhuman animals but also equals the value of human and nonhuman existences. In the essay “Of Suicide” that the Scottish philosopher refused to publish in life (see Gaskin 1995), he argues that suicide is neither immoral nor irreligious and arrives to the limits of his argument linking human nature to the “whole animal kingdom.” Then he arrives to his most radical conclusion:

The lives of men depend upon the same laws as the lives of all other animals... the life of a man is of no greater importance to the universe than that of an oyster. (Of Suicide, p 371)

Two allusions to the oyster in his complete written works suffice Hume to dissolve the barriers between the natures of human and nonhuman animals, and between the values of their existences. What counts for humans counts for all other animals too!

The analysis developed here of the “traditional Western” philosopher David Hume not only invites us to reconsider the answer about the oyster given by contemporary utilitarian philosopher Peter Singer. It also underscores the relevance of re-reading and reinterpreting the implications of Western historical philosophers for contemporary projects that rethink and transform our ethical attitudes toward non-human living beings.

David Hume was himself inspired by much earlier Western philosophical traditions, namely the Skeptics – particularly, Pyrrho⁷ and the Cynics (Clark 1985). On the one hand, these ancient Greek philosophical traditions exerted a decisive influence on Hume’s view of animals. On the other hand, the modern Scottish philosopher brought these traditions to new horizons. Likewise, today the work of Hume pushes contemporary philosophers and biologists to consider animal understanding and sentience even beyond their current boundaries. In turn, we can develop implications of philosophical traditions beyond the limits explored by their authors. For example, the ethical notion of co-inhabitants (Rozzi 2015) and the demands for reorienting processes of biocultural homogenization go beyond Hume’s moral considerations for nonhuman animals (Rozzi 2018).

Instead of a dichotomy between “traditional” and “radical” modern philosophies, the analysis of this suggests an evolutionary metaphor of dynamic branching and flowering of philosophical ideas, nourished by diverse roots. A more fluid communication with the philosophical roots of Western civilization and modern thought, like the Cynics or Hume, may supply contemporary ecologists, ethicists, and more broadly biocultural conservationists with stronger perspectives when confronted with monolithic views about modern anthropocentric philosophy as being irremediably indifferent toward invertebrates and other less conspicuous nonhuman living beings. Hume stated in his own words that the values of the life of an oyster and a human being are equal, thereby fracturing the anthropocentrism of Victorian society and providing a philosophical foundation for overcoming taxonomic biases in the type of contemporary environmental ethics we need to coinhabit the planet in the Anthropocene.

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⁷ See Popkin (1980), which includes “David Hume: His Pyrrhonism and his critique of Pyrrhonism” (pp 103–132), “David Hume and the Pyrrhonian controversy” (pp 133–148), and “Bayle and Hume” (pp 149–160).

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