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[See table of contents](#)

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Article abstract

Bioethics tends to be dominated by discourses concerned with the ethical dimension of medical practice, the organization of medical care, and the integrity of biomedical research involving human subjects and animal testing. Jacques Derrida has explored the fundamental question of the “limit” that identifies and differentiates the human animal from the nonhuman animal. However, to date his work has not received any reception in the field of biomedical ethics. In this paper, I examine what Derrida’s thought about this limit might mean for the use/misuse/abuse of animals in contemporary biomedical research. For this, I review Derrida’s analysis and examine what it implies for scientific responsibility, introducing what I have coined the “Incompleteness Theorem of Bioethics.”



“THE ANIMAL” AFTER DERRIDA: INTERROGATING THE BIOETHICS OF *GENO-CIDE*

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ABSTRACT

Bioethics tends to be dominated by discourses concerned with the ethical dimension of medical practice, the organization of medical care, and the integrity of biomedical research involving human subjects and animal testing. Jacques Derrida has explored the fundamental question of the “limit” that identifies and differentiates the human animal from the nonhuman animal. However, to date his work has not received any reception in the field of biomedical ethics. In this paper, I examine what Derrida’s thought about this limit might mean for the use/misuse/abuse of animals in contemporary biomedical research. For this, I review Derrida’s analysis and examine what it implies for scientific responsibility, introducing what I have coined the “Incompleteness Theorem of Bioethics.”

RÉSUMÉ

Cet article défend la thèse que l'idée de la dignité humaine a un sens précis et philosophique. La bioéthique a tendance à être dominée par des discours centrés sur la dimension morale de la pratique médicale, l'organisation des soins médicaux et l'intégrité des recherches biomédicales sur des sujets humains et sur des animaux. Jacques Derrida a exploré la question fondamentale de la « limite » qui identifie et différencie l'animal humain de l'animal non humain. Pourtant, son œuvre n'a pas encore trouvé résonance dans le domaine de l'éthique biomédicale. Il s'agit ici d'examiner, à la lumière de la pensée de Derrida sur cette limite, les questions de l'utilisation des animaux, de leur maltraitance et de la cruauté à leur égard dans la recherche biomédicale contemporaine. Dans ce document, je passe en revue l'analyse de Derrida et considère ses implications en matière de responsabilité scientifique, présentant de ce fait ce que j'appelle le « Théorème de l'incomplétude de la bioéthique ».

One understands a philosopher only by heeding closely what he means to demonstrate, and in reality fails to demonstrate, concerning the limit between human and animal.

Jacques Derrida

I am on principle sympathetic with those who, it seems to me, are in the right and have good reasons to rise up against the way animals are treated: in industrial production, in slaughter, in consumption, in experimentation.

Jacques Derrida

In his thoughts, Herman spoke a eulogy for the mouse who had shared a portion of her life with him and who, because of him, had left this earth. What do they know—all these scholars, all these philosophers, all the leaders of the world—about such as you? They have convinced themselves that man, the worst transgressor of all the species, is the crown of creation. All other creatures were created merely to provide him with food, pelts, to be tormented, exterminated. In relation to them, all people are Nazis; for the animals it is an eternal Treblinka.

Isaac Bashevis Singer, *The Letter Writer*

THE QUESTION AT ISSUE

Bioethics tends to be dominated by discourses concerned with the ethical dimension of medical practice, medical care organization and research integrity. Accounting for the work of Jacques Derrida, and with reference to Michel Foucault's deliberations about biopower, Cary Wolfe has rightly questioned the entrenched discursive features of bioethics as a discipline according to which the boundary between the human and the non-human remains "an ethical (non)issue" (Wolfe, 2009). Following Carl Elliot's Wittgensteinian queries about the language-game dominant in contemporary bioethics, Wolfe finds it important that bioethics be concerned with "the sense or meaning of life." In other words, bioethics should examine the prejudices that are "based on species difference" and "species membership," and hence take up the central issue of "our obligations to nonhuman animals." For Wolfe, this means doing philosophy differently, in particular by moving away from the analytic tradition of bioethics discourse that carries with it "a certain estranging operation of language," and thereby to move beyond a humanist ethics to a post-humanist (even anti-anthro-

pocentrist) discourse. But here, Derrida's statement should be interrogated to the effect that he has never believed "in some homogenous continuity between what calls *itself* man and what *he* calls the animal" (Wolfe, 2009, p. 83).

To pursue this question, however, means that our movement in language should be more radical than what has been undertaken to date, in which case we may well have to rectify our language by eschewing the very concepts "human" and "nonhuman," as well as the more basic concept "animal," which has its provenance in the Latin renditions of classical Greek philosophical nomenclature. This means going beyond Heidegger's claim (following Nietzsche) that the relation of rationality and animality remains "as yet undetermined," to the point of eschewing the presupposed validity of the duality as well as the hope of clarifying the *humanitas* of the human while retaining this duality. If we do this, then it seems reasonable to undertake a thought experiment, even a life experiment, that welcomes intuitive insight and according to which "the animal" can be engaged from the outset as a being that stands before us as one that is "to be heard morally" (as Wolfe puts it), regardless of one's ontology or conception of justice (e.g., rights, duty).

At issue here, then, is what Derrida means to demonstrate concerning the "limit" (an "indivisible threshold") or, better said, the limits, between humans and animals, and thereby the problem of force and right to be clarified at a given limit of distinction and disclosure. At issue are the "logics of closure and enclosure"—conceptual and material—of living beings. Derrida examines this idea of limit as an oppositional limit. That is, the conceptual category of "the human" is opposed to the conceptual category of "the animal" so as to blur, rather than to clarify, multiplicities of differences that can and should be taken into account (Derrida, 1983, p. 183). To speak of limits is to recognize, as Derrida (2004) insists, that "there is not one opposition between man and non-man; there are, between different organizational structures of the living being, many fractures, heterogeneities, differential structures." What is blurred conceptually is blurred in practice, i.e., in the practical relation of humans to animals. Thus, at issue here is what Derrida's thought about this limit means for bioethics, specifically with regard to the use/misuse/abuse of animals in contemporary biomedical research.

To this end, I propose what I have coined the "Incompleteness Theorem of Bioethics." The theorem holds that: (A) In any well-formed theory of the ethical, the truth of some moral propositions is undecidable within the frame of the theory, in which case (B) it is obligatory that one endure the undecidable as undecidable, rather than posit a simulacrum of truth that, in consequence, violates the principle of non-maleficence that applies to all living beings. The following discussion seeks to provide an account of moral analysis that justifies this theorem as fundamental to biomedical practice involving animal research.

To say "specifically" above is to signal a call to attend to the violence done by humans in the use/misuse/abuse of an unstated number of animal species. A

working group of the Nuffield Council on Bioethics estimates “the annual number of animals used in biomedical research worldwide” to be “between 50–100 million, with a forecast increase in number due to advances in genetic research” (Nuffield Council on Bioethics, 2005, p. 7). As the working group recognizes the linkage of scientific justification and moral justification, it focused on two questions that should guide ethical review: (1) whether animal research yields useful knowledge that could not be gained from other sources; and (2) whether it is morally acceptable for humans to use animals in ways that cause them harm (p. 33). Fundamental to these two issues is the question of whether there is “a prima facie ethical duty to help alleviate suffering [human or animal] through acts, provided research efforts are in proportion to the extent of suffering to be alleviated.” But, the working group conceded that “[i]t remains unresolved at this stage as to whether such an obligation automatically sanctions the use of animals” (p. 36).

Indeed, this latter question presupposes some settlement as to the moral status of animals, in the sense that an animal may be considered a member of a moral community, in which case an animal would be considered either a moral agent (i.e., a being “able to behave in a moral way and [...] liable to moral criticism for any failure to do so”) or a moral subject (i.e., a being “whose features should be taken into account in the behaviour of moral agents”), or even both, depending on context of evaluation (p. 39).

The ostensible moral status of an animal merits inquiry in as much as Derrida speaks of “the genocidal torture” that is inflicted on animals “in a way that is fundamentally perverse, that is, by raising en masse, in a hyperindustrialized fashion, herds that are to be massively exterminated for alleged human needs [...]” (Derrida, 2004). In post-Derridean discourse, such use/misuse/abuse would be assessed as *geno-cide* (not to say “Holocaust,” which, in the sense of “Shoah,” has a combined religious and political connotation) as well as torture—terms no longer restricted to reference to an event or act designated “a crime against humanity” under conventions of international law¹. With Derrida, the limit of *geno-cide* is now to be interrogated in terms of the limit(s) between the human and the animal, in the event of what may stand out as a crime (or crimes) against the animal (animals), even while one may continue to speak of genocide as a crime against humanity.

The concept of a “crime against an animal,” of course, presupposes an applicable law. Yet, “law” itself is here in question, because here one cannot mean a merely positive law which has its source (its *posit-ing*) in human appropriation—or, more precisely, *expropriation*, *arrogation*, thus the human *arrogance*—of sovereignty over the whole of nature and thus over animals in general. Such law forcibly (i.e., as a matter of *force*, in contrast to *right*) privileges the human interest over the animal interest as such insofar as the human declares himself (by self-definition) to be singularly *the* “political animal,” accent here on “political” with all that this entails in the language of subjection, subordination and sovereignty. All other animals, said to be capable of social relationships, thus to

be living beings capable of association (*koinonia*, as with Aristotle's analysis) are nonetheless declared to be "apolitical" (*apolis* for Aristotle, or "in a state of nature" for Hobbes). For both ancient Greek and especially modern European political philosophy,

If one cannot make a convention with the beast [...] it is for reason of language. The beast does not understand our language [...] [There] could not be an exchange, shared speech, question and response, proposition and response, as any contract, convention, or covenant seems to demand. (Derrida, 2009, p. 55)

But, here we have nothing more than a postulate, which Derrida calls "something profoundly thetical and dogmatic," even "the most powerful, impassive, and dogmatic prejudice about the animal," (p. 55) this privileging of human language in the encounter with the animal, this logocentrism that excludes the animal(s) from "response." Against such political-philosophical propositions, Derrida asserts:

[...] I in fact think, that *all that is brutally false*, that it is false to say that beasts in general (supposing any such thing to exist) or so-called brute beasts (what does "brute" mean?) do not understand our language, do not respond or do not enter into any convention. (2009, p. 56, italics added)

Derrida goes even further to assert, in stark challenge to the modern political-philosophical expropriations of sovereignty, that he does not believe sovereignty is proper to man (p. 57).

Hence, Derrida would have us know that, "every law is not necessarily ethical, juridical, or political," in which case it remains to be clarified what "law" means when assigning a significance to the event of a crime against an animal, and even more so when this crime is determined to be *geno-cide* (p. 16). Crime against the animal, originating in the so-called rational animal through the *force* of his law, presupposes rationality and/or animality at the root of such crime. But, if crime and cruelty transcend animality, as Derrida says, the crime against the animal cannot be a matter of animality in man but instead an event that issues from his reason and his rational power, and thus from the rationality that ostensibly legitimates the human sovereign.

However, notwithstanding what has been said above, one must point to a caveat here because, as David Wood puts it, "[T]he use of the word 'animal' or 'the animal' to refer to any and all living creatures is [already] a conceptual violence that expeditiously legitimates our actual violence" (Wood, 2004, p. 133). One cannot ignore the significance of the origin of this violence as conceptual. Wood's commentary on Derrida's solicitude for "the animal" points to a question that we may reasonably engage in as a thought experiment, even if, as Wood says, this presents itself as an "unfashionable thought": Can we "imagine valuing another life-system" that has all the properties of such a system yet that does

not include *Homo sapiens* as a species? If we try to imagine this, then we will be able to evaluate, i.e., value properly, the status (ontological, ecological, ethical) of “the animals” that live or die at the limits with “the human”—this human who, as self-determining “sovereign” in relation to “the beast,” determines these limits first conceptually (either through force or the law) and then in the actual encounter with “the animal.”

Thus, let us begin by listening, by attuning ourselves, to Derrida’s indictment, stated thus:

No one can deny seriously any more, or for very long, that men do all they can in order to dissimulate this cruelty [towards animals], or to hide it from themselves; in order to organize on a global scale the forgetting or misunderstanding of this violence, which some would compare to the worst cases of genocide (there are also animal genocides: the number of species endangered because of man takes one’s breath away). One should neither abuse the figure of genocide nor too quickly consider it explained away. It gets more complicated: the annihilation of certain species is indeed in process, but it is occurring through the organization and exploitation of an artificial, infernal, virtually interminable survival, in conditions that previous generations would have judged monstrous, outside of every presumed norm of a life proper to animals that are thus exterminated by means of their continued existence or even their overpopulation. As if, for example, instead of throwing a people into ovens and gas chambers (let’s say Nazi) doctors and geneticists had decided to organize the overproduction and overgeneration of Jews, gypsies and homosexuals by means of artificial insemination, so that, being continually more numerous and better fed, they could be destined in always increasing numbers for the same hell, that of the imposition of genetic experimentation, or extermination by gas or by fire. In the same abattoirs. I don’t wish to abuse the ease with which one can overload with pathos the self-evidences I am drawing attention to here. Everybody knows what terrifying and intolerable pictures a realist painting could give to the industrial, mechanical, chemical, hormonal and genetic violence to which man has been submitting animal life for the past two centuries. Everybody knows what the production, breeding, transport and slaughter of these animals has become. Instead of thrusting these images in your faces or awakening them in your memory, something that would be both too easy and endless, let me simply say a word about this “pathos.” If these images are “pathetic,” if they evoke sympathy, it is also because they “pathetically” open the immense question of pathos and the pathological, precisely, that is, of suffering, pity and compassion; and the place that has to be accorded to the interpretation of this compassion, to the sharing of this suffering among the living, to the law, ethics and politics that must be brought to bear upon this experience of compassion. What has been happening for two centuries now involves a new experience of this compassion. In response to what is, for the moment, the irresistible but unacknowledged unleashing and the organized disavowal of this torture,

voices are raised—minority, weak, marginal voices, little assured of their right to discourse and of the enactment of their discourse within the law, as a declaration of rights—in order to protest, in order to appeal [...] to what is still presented in such a problematic way as *animal rights*, in order to awaken us to our responsibilities and our obligations. (Derrida, 2008, pp. 25–26, italics added)

Presumably, when interpreting Derrida according to his own principle for understanding philosophers (in epigraph above), he can be seen to draw attention to the fact that he has failed to demonstrate the limit of the human and the animal. Consistent with his deconstructive interrogation, Derrida defers the demonstration (i.e., “demonstration” in his sense of discursive reasoning of “the moral” to be gained) (2009, p. 34). We emphasize the word “demonstrate” to intensify our focus within Derrida’s lengthy remarks on this limit. Derrida issues a call to us to articulate various implications and to follow his thought. Unavoidably, this involves some preliminary comment, *en passant*, on a tradition of philosophical thought, with its heavily invested taxonomy that is thereby also an economy of order, and which Derrida engages as part of his interrogation of this limit. To speak of a tradition here is to speak of a long-honoured authority, i.e., the authority that belongs to tradition. It is a tradition that has been determinative of the limit(s) of human and animal. But, for Derrida (as with others, no doubt) this time-honoured authority is in question, given contemporary recognition of the conceptual and actual violence, i.e., the *geno-cide*, being done to “the animal,” to animals, and, indeed, thereby also to humans in their multifarious arrogations of right and force.

AUTHORITY/POWER OF A TRADITION

Long ago, Aristotle denominated the human being as a *zoon logon echon*, i.e., a living being capable of speech, one living being among other living beings. But, even then, man—*ho anthropos*—was said to be the only living being having speech in the sense of discourse (logos). As is well known among Western philosophers, in the transition to the Latin renderings of this Greek concept, philosophers of the medieval and scholastic era denominated the human as *animal rationale*, i.e., rational animal. With this rendering, the human being is understood to be the only such being within human experience (excluding theological claims that allow for divine beings or other supranatural beings such as angels, demons or extraterrestrials).

These are, of course, metaphysical interpretations, dependent on one or another epistemological clarification of a concept of rationality. The human is categorized as *an animal* (one having *animus*, a principle or source of physical/physiological motion as well as a principle of action in the sense of a free-will act). But, the human is nonetheless distinguished from *all* animals by the stipulated essential difference of rationality, i.e., the ability to reason, the capacity for cognition that is part and parcel of human consciousness. Rationality is said to be essential to the human way to be, which implies that rationality is not a mere accident in the sense of a contingent trait that may or may not characterize a human being.

In the modern philosophical period, with the advent of Descartes, we have the human identified as *res cogitans*, i.e., as a thinking thing. As the essence of the human, the ego or the I that thinks (i.e., the ego of *Ego cogito ergo sum*—I think therefore I am) is entirely distinct from the body, from corporeality. Thus, for Descartes *res cogitans* has no reference to animality, to the body as extended thing (*res extensae*) as such. However, accounting for Descartes' remarks in the *Meditations*, Derrida noted that Descartes preferred not to “disentangle” the “subtleties” involved in clarifying the concepts of animality and rationality, even as Descartes' thought intensified the modern epistemological and ontological efforts to clarify the relation of mind and body, thus of consciousness to the structure and function of the brain. After all, “Modern science suggests that there is no manifestation of the human personality that is not produced through the brain even though the brain may not be the effective cause” (Anderson, 2004, p. 82).

In the late modern period, the philosopher Nietzsche sought to overturn the traditional conceptual framework of metaphysics, noting that the relation of animality and rationality remains “as yet undetermined.” But, if so, then the question remains how we are to conceive anew the being that we presumably mean when we say “human being” and when we distinguish it from that which is animal as such, so as to speak with authority of the human way to be, but also to speak with authority of the animal way to be—assuming these general categories mean something without being expressions of mere dogma.

Heidegger, a twentieth century existential phenomenologist, emphasized Nietzsche's insight, turned away from metaphysical interpretations of the human way to be, and rejected the primacy of consciousness (*Bewusstsein*) as such for identifying the essential structures of human existence. Heidegger remained concerned with the governing technological framework of contemporary thinking. Calculative thinking (*rechnendes Denken*) that is prominent in the sciences orders the whole of reality according to the conscription (*die Gestellung*), requisitioning (*Be-stellen*) and positioning (*das Stellen*) of things into “standing reserve” (*der Bestand*)—even humans themselves “already ordered into this requisitioning,” in which case one cannot say that this is merely a matter of “human machination with the character of exploitation” (Heidegger, 2012, p. 28). If animals, then, are conscripted, positioned, requisitioned and inventoried into a standing reserve as part of the ordering that characterizes industrial production, it is because humans are themselves already ordered by this pervasive and invasive calculative thinking that moves the industry of requisitioning. Through this thinking, the requisitioning of nature *disposes* both humans and animals to the violence of a positioning, that itself transforms into a dis-position, thus to the dis-posing characteristic of the mass slaughter that befalls both humans and animals in genocide and *geno-cide*.

Heidegger comments on the immeasurable suffering that “creeps and rages over the earth” consequent to calculative thinking. But, even Heidegger retained a commitment to the concept of an essence of animality that set off, distinguished,

the human being from all animals as a matter of ontological priority. Heidegger granted humans their existence in a world that is a world only through their formation of it (*der Mensch ist weltbildend*), but restricted animals to a captivation (*Benommenheit*) by and absorption (*Eingenommenheit*) in their environment, a world contrasted to environment such that all animals are declared “poor in world” (*das Tier ist weltarm*) (1995).

In contrast, yet not wholly in contrast, to the metaphysical denominations of philosophy, as a matter of empirical science the human is distinguished as a species within a genus. The science of evolutionary biology installs for human understanding a taxonomy according to which the human is designated *Homo sapiens*, and thereby declared to be one hominin among others within the family Hominae, while the genus *Homo* is distinguished from the genus *Pan* (chimpanzee) and *Gorilla*, with the human species-differentia designated as “*sapiens*.” Taxonomically, the emphasis is on morphology, i.e., similarity of physical forms and articulated bodily structures. However, the paleoanthropologist Lee Berger posits that:

Modern-day genetic research is providing evidence that morphological distinctions are not necessarily proof of evolutionary relatedness. Recent evidence suggests that humans are in fact more closely related to the chimpanzee and bonobo than either species is to the gorilla. Chimps and humans share something like 98 percent of genes, indicating that we share a common ape ancestor. (Berger, 2010)

Here we have the assertions of empirical science, all of which count as descriptions only, not to be confused with the sort of evidence that would contribute to prescriptions of human or other “nonhuman animal” moral status. The taxonomy in place today continues to shift with ongoing analyses of biological and paleoanthropological evidence. The taxonomical concept, “*sapiens*,” as a species-differentia within the genus *Homo* does not in and of itself signify moral status allowing to argue, on this supposed authority alone, that a member of the genus-species *Homo sapiens* has a privileged moral standing relative to other species within the genus or in relation to species of another genus. Indeed, the empirical sciences have every reason to be instructed by Hume, the only empiricist philosopher in the modern period, who asserted in 1739 that despite the rationalism of his day, “no truth appears to me more evident than that beasts are endow’d with thought and reason as well as men” (Hume, 1985, p. 226).

That said, however, we can also be instructed by Peter Singer when he says, “No nonhuman animals, not even the other great apes, come close to matching our capacity to reason” (Singer, 2006, p. 145). But here, in the setting of empirical sciences such as primatology, we have the installation of what Donna Haraway has rightly called a “construction of nature” and “a biopolitical divide.” The emphasis here is on an insistent yet ambiguous, unsettled division between the human (uncaged primate) and the nonhuman (laboratory encaged primate) who can never be (as a consequence of a stipulated taxon) anything more than mere “*proto-human*” (Haraway, 1989; 2007).

DERRIDA'S INDICTMENT

Thus, given the indeterminacy associated with both philosophical and scientific declarations about the human, it behooves us to consider Derrida's concern for the limit between the human and the animal. Following remarks concerning the animal from Heidegger's *The Fundamental Concepts of Metaphysics*, Derrida stated: "My presence"—that is to say, the presence of the human being in his and her "life-world" (*Lebenswelt*)—is there only *to reveal what the thing would be in my absence*" (Derrida, 2008, p. 160; italics added). In other words, the point here is to understand what it really means "to let be" a thing, in the present case to let be a given animal, without the imposing, transposing or disposing governance that belongs to human design, including the research designs (protocols) of biomedical practice. Derrida is concerned about all human designations of the animal according to which the animal is "subject"—*subjected* to—and which constitute a "dominion" that the human asserts to be his right or by force, thus by whatever authority or power, be it philosophically or religiously grounded. Among such assertions of dominion, Derrida cites Hobbes, who says that humankind has the right over non-rational animals:

That is, one may at discretion reduce to one's service any animals that can be tamed or made useful, and wage continual war against the rest as harmful, and hunt them down and kill them. Thus, *Dominion* over animals has its origin in the *right of nature* not in *Divine positive right* [...] Since therefore it is by natural right [i.e., whatever 'natural strength and powers' are mustered] that an animal kills a man, it will be by the same right that a man slaughters an animal. (Hobbes, 1998, p. 108)

The foregoing discourse discloses a number of conceptual issues, all consequences of a self-definition, a part of humanity's autobiography, and essentially uncontested "philosophemes" (units of knowledge that function to maintain power). Derrida interrogated this in 1997 in a public lecture entitled "L'animal que donc je suis" (The animal that therefore I am). And, indeed, speaking philosophically, i.e., from the beginning of the Western tradition up through the twentieth century, one can say that the human continues to construe himself as *an* animal, albeit as more than *mere* animal. This self-definition, however, is such that humans generally insist, as Derrida reminds, on an ambiguous and perhaps even contradictory contrast, indeed on a rupture with "animals in general"; for, the human insists above all that "the animal is deprived of language" (Derrida, 2008, p. 32). More to the point, the general singular term *animal* "applies to the whole animal kingdom with the exception of the human." All beings for whom the taxonomical identification is located within the animal kingdom as a stipulation of *zoo*-logy, *bio*-logy or physical *anthropo*-logy are, without question, thereby deprived of language as such—deprived of the *logos* that is proper to speech, to human discourse, because the power of *logos* is said to be proper only to the human being among all living beings.

Reviewing Descartes' *Meditations*, Derrida makes a distinction between "the law of nature," which in the animal entails mere *reaction* to environmental stimuli, and "the law of freedom," which in the human entails *response and responsibility* (p. 83). In other words, an animal is capable naturally of reaction to causally stimulating events, whereas the human is ever capable of response to phenomena that engage his faculties of consciousness and sensibility in any possible experience. Response is a manifestation of human judgment, a cognitive capacity that issues from the deliberative freedom of the human will. "The Cartesian animal," writes Derrida, "would [by contrast with the human] remain incapable of responding to true questioning. For it lacks the power of real questions" (p. 84). Thus, the "limit to the response," is for Descartes "the limit of the animal." More accurately, one must say that the limit to the response is at best, for Descartes, the limit of the given animal, although Derrida questions this, given the multiplicity of differential structures that multiply the limits for the human-animal relation.

For Derrida, however, it behooves us to go beyond the modern metaphysical interpretations:

[...] it is not just a matter of giving back to the animal whatever it has been refused [heretofore] [...] It is also a matter of questioning oneself concerning the axiom that permits one to accord purely and simply to the humans or to the rational animal that which one holds the just plain animal to be deprived of. (p. 95)

Derrida sets himself the task of deconstructing the metaphysical interpretations according to which the human being is denominated a rational animal, all the while aware of developments within contemporary primatology². This habitual discourse is to be interrogated anew and the reigning axiom to be challenged. Derrida reminds us of the discourse according to which:

The animal is not a rational being, since it is deprived of the "I think" that is the condition for understanding and reason. In that way, deprived for the same reason of liberty and autonomy, it cannot become the subject of rights or duties, given the correlation between right and obligation that is proper to the subject as a free person. (p. 99)

Derrida's indictment of this discourse is perhaps most forceful when he says, "I think that Cartesianism belongs [...] to the Judeo-Christian-Islamic tradition of a war against the animal, of a sacrificial war that is as old as Genesis [...] No ethical or sentimental nobility must be allowed to conceal from us that violence [...]" (p. 101). Indeed, taking Kant's doctrine of practical reason into account, Derrida adds further:

One could say, first, that in the end such a bellicose hatred in the name of human rights, far from rescuing man from the animality that he claims to rise above, confirms the waging of a kind of species war and confirms that

the man of practical reason remains bestial in his defensive and repressive aggressivity, in his exploiting the animal to death. (p. 101; italics added).

It is here, in this exploitation of the animal to death, that the human—who is himself bestial—is charged with *geno*-cide, with torture, with the simultaneously repressive and aggressive death of the animal as such, all part of a dogmatically asserted sovereignty of the human over the beast in the whole scheme of nature. But, then, if the human is himself bestial, then we have before us the sovereignty of the sovereign beast over all other beasts—as it were, the “first animal” among animals, thus *l’animal que donc je suis*.

The foregoing discloses Derrida’s reference to a religious conception of the human being, which is at base consistent with that of the Greek, scholastic and modern European philosophical tradition. The consistency is in part a consequence of the attempted syntheses of the Greek attention to ontology (study of beings) and the Judaic, Christian and Islamic attention to theology (study of divine being), thus to the philosophical development of an *onto-theo*-logical discourse that contributes to the dominion of the human over all animals³. Commenting on Adam’s relation to the animals, Derrida reminds us that God “created man in his likeness *so that* man will *subject, tame, dominate, train, or domesticate* the animals born before him and assert his authority over them” (p. 16). The divine creative act is thus purposive, *teleo*-logical: “God destines the animals to an experience of the power of man, in order to see the power of man in action, in order to see the power of man at work, in order to see man take power over all the other living beings” (p. 16).

For those who accept the authority of the biblical religious tradition, this power of man is unproblematic, given the authority of God (*Elohim, YHWH*) to command Adam. However, Derrida reads Genesis as “an awful tale,” in the sense of inspiring awe, surely, but also in the sense of recognition of harm (p. 18). It is “awful” precisely to the degree that man becomes “master of nature and of the animal,” the human claiming “superiority over what is called animal life,” this superiority being both “infinite and par excellence” such that man’s superiority is “at one and the same time *unconditional* and *sacrificial*” (p. 20). Such, observes Derrida, “would be the law of an imperturbable logic, both Promethean and Adamic, both Greek and Abrahamic (Judaic, Christian, and Islamic).” So imperturbable is this logic, says Derrida, that “Its variance hasn’t stopped being verified all the way to our modernity” (p. 21).

But, one can say the tale of Genesis is “awful” in another sense; and here one must review the religious account. Derrida distinguishes the relation of Adam to animals, as described in “the two accounts of Genesis”:

before the fall [of Adam and Eve] and the institution of nakedness [i.e., Adam’s and Eve’s awareness of their nakedness, which is the origin of their awareness of the difference of good and evil and, thereby, of their contravention of the divine imperative], God clearly commanded Adam to

feed himself *as a gatherer* and *not as a hunter*. He has to eat what grows on the surface of the earth and on trees [Gen. 1:29]. It is later, after the fall, that Abel will have himself preferred by God by offering up to him the sacrifices of a sedentary cultivator. Finally, Cain had been more faithful to God's arch-primary commandment, and the whole history, that is to say, the fault and criminality that install historicality, is linked to God's preference for Abel's animal offering [...]" (pp. 112–113; italics added)

In short, Derrida says pointedly, "Abel is also he who dominates and raises animals, then makes a sacrifice of them to God." (p. 113) It is thus with Abel and not with Cain that the animal becomes sacrificial and, as sacrifice, the utmost manifestation of human sovereignty, of man's dominion, over all animal life. In the garden of Eden both Adam and Eve eat from the bounty of its trees, both man and woman herbivorous. After the fall from grace through sin, the human becomes carnivorous, the animal's skin or "hide" having become first the means to cover, to hide, human nakedness, the hide of the human's otherwise manifest shame. Henceforth, the animal serves as the means to God's dispensation of forgiveness for the human: The animal thus becomes sacrificial as the sufficient compensatory justice for all human transgressions of the divine imperatives.

We must ask ourselves, therefore, what word the religious, ancient Hebrew tradition uses for "animal" when Adam is invited to call the animals before him so as to name them. The word (e.g., Genesis 1:21) is *nephesh*, often translated as "living creature," thus the animal associated first and foremost with life, and only thereafter specified as "soul" and related (with some error in concept) to the philosophical concept of "mind." The man, *ha adam*, is created in the image (*tzelem*) of God (a confounding idea even yet) and given dominion (Gen. 1:28) over all animals that are brought forth "after their kind." The idea of Adam and Eve created in God's image lends reason, according to biblical anthropology, to the distinction of human and animal as one in which only the human relates to the divine, and that this relation to the divine is possible through the human's proper capacity of spirit (*ruach*) in addition to life, to *nephesh*, that the animal is said to lack (Anderson, 2004).

Derrida is clear about the relation of the human to the animal as stipulated in the religious context of the limit: "[...] the beast ignorant of right and the sovereign having the right to suspend right, to place himself above the law that he is, that he makes, that he institutes, as to which he decides, sovereignly" (Derrida, 2009, p. 32). Thus, it makes sense to speak of *human* right(s), even if only as a self-assignment and self-appropriation. Such right(s) are the stipulation of the human in his sovereign power to command, thereby to dispose of the animal according to human interest. The human as sovereign may manifest his "zoophilia," e.g., at best, in his domestication of the animal that "lives with" the human as household pet (Haraway, 2008). But, generally, the human interest prevails over all animal interests, such that *zoo-philia* is displaced by a reigning *zoo-polemos* in word and deed that conceptually enframes, then encages, the animal as research subject.

One may declare the foregoing to be a political-philosophical assessment. But, the story or, if one will, the “fable,” of Genesis can also have a moral lesson that ostensibly instructs the human as to both his rightful sovereignty and his rightful subjection of the animal. Here we have the moral question of the limit(s) that Derrida does not demonstrate but which must be taken up in following his interrogation. Of central significance here is the credence one is to give to the fable that tells a moral lesson. In this regard, Derrida says “in the prevalent or hegemonic tradition of the political, a political discourse, and above all a political action, should in no case come under the category of the fabular [...]”—for the fable, which cannot but be both “aweful” and “awful,” is such that the fabular gives “the impression of knowing [...] the effect of knowledge, resembling knowing where there isn’t necessarily any knowing [...] [i.e.,] the knowing is a pretend knowing, a false knowing, a simulacrum of knowing [...]” (Derrida, 2009, pp. 34–35).

Thus, where the fabular is merely phenomenally (i.e., *dissembling*) a knowing, that which is given as known is in point of fact not known. This raises unavoidably and even necessarily, as a matter of responsibility, the question as to the *justification*, the *justice*, of any political decision, any political action that is issued on the basis of the fabular—including any *bio*-political decisions and actions affecting historically delimited and ongoing commitments to the supposed limit(s) of the human and the nonhuman animal. Those deaths and suffering that are hardly fabular but quite real in the industrial slaughter of animals and animal biomedical experimentation, which “are yet carried off and inscribed in the affabulatory score,” elicit our interrogation, even a revision, of our concepts of justice (p. 36).

DERRIDEAN BIOETHICS?

In July 2010, the Physicians Committee for Responsible Medicine (PCRM) in the United States issued a position paper on animal research. Taking into account the U.S. Animal Welfare Act regulations, PCRM proposed not only “the exploration of methods that replace animal use,” but also insisted on a regulatory mandate for replacement of animals in research (PCRM, 2010). The American Psychological Association similarly cautions researchers, albeit with reference to a utilitarian conceptual framework that is consistent with the usual regulatory oversight expected from Institutional Animal Care and Use Committees (IACUC)⁴.

In a discussion on the ethics of animal research in the context of scientific practice in the United Kingdom, and accounting for the Animals (Scientific Procedures) Act of 1986, Festing and Wilkinson opined, “No responsible scientist wants to use animals or cause them unnecessary suffering if it can be avoided, and therefore scientists accept controls on the use of animals in research” (Festing and Wilkinson, 2007, p. 1). But, here too, the focus is on cost-benefit analysis, “benefit” here meaning “research for the benefit of human health,” with reduction and refinement in the use of animals preferred over replacement. Thus, the governing strategy is rank-ordered—(1) reduction in use, (2) refinement of

methods of use, and (3) replacement of animal experimentation with other research methods. This is consistent with the final report of a working group of the Laboratory Animal Science Association (LASA) and the Animal Procedures Committee in the United Kingdom, which argued that “[t]he introduction of a process for retrospective reporting of the severity of scientific procedures on animals would be beneficial in terms of enhanced openness and public accountability, and could also bring animal welfare and scientific benefits.” The report further states that it is problematic that protocols up to now are not “designed for reporting actual severity” but, instead, provide only “predictions of potential adverse effects,” in which case there is no actual reporting of “degree of pain, suffering, distress or lasting harm actually experienced by animals involved in the projects” (LASA, 2008, pp. i–2).

In its engagement of such issues, the Nuffield Council on Bioethics states on its website that “the proper moral treatment of a being depends on the characteristics it possesses, rather than simply on the species to which it belongs,” the relevant features including:

Sentience (the capacity to feel pleasure and pain); Higher cognitive capacities (for example, the ability to use language and learn complicated tasks, such as making and using tools); The capacity to flourish (the ability to satisfy species-specific needs); Sociability (being a member of a community); Possession of a life (attributing value to life itself)⁵.

At issue here is whether these traits present absolute constraints or are relative to the weight they have, given some utilitarian estimate of human benefit that overrules objection to the use of animals for biomedical research.

However, these position statements beg the following questions: What does it mean to be a responsible scientist when the scientist designs a research investigation involving the use of animals? To whom—or to what—is the scientist responsible when proposing or otherwise conducting research on nonhuman animals? What are the conditions under which animal suffering is necessary because, so it is said, “it cannot be avoided”? Problematic in any claim that animal suffering is necessary is the fact that there is little scientific data available to warrant this claim. Usually, human suffering “refers to the subjective experience of unpleasant emotions such as fear, pain and frustration that are private and known only to the person experiencing them” (Dawkins, 2008, p. 1). As a working definition of “suffering,” the working group of the Nuffield Council on Bioethics proposed the following: “A negative emotional state which derives from adverse physical, physiological and psychological circumstances, in accordance with the cognitive capacity of the species and of the individual being, and its life’s experience” (Nuffield Council on Bioethics, 2005, p. 62). The British Society of Animal Science addresses the issue of animal pain, stating that “The ‘cost’ to animals can be defined as any harm in the form of pain, distress or other forms of suffering that an animal experiences at any stage of its life as a consequence of the research⁶”. Aside from assumption and belief, then, the sci-

entific question is (a) whether nonhuman animals have such subjective experiences, and (b) how this is to be known by a scientist involved in animal experimentation.

Consider that bioethicist Peter Singer and Paola Cavalieri have proposed granting human rights to nonhuman great apes, thereby blurring a limit between the human and the animal, in this case certain primates. Singer and Cavalieri go so far as to privilege nonhuman primates over dysfunctional, handicapped (e.g., the mentally ill) humans in the allocation of rights. One notes here that the proposal is such that these rights are construed as *human* rights and not as *animal* rights per se (Cavalieri, 2003; Cavalieri and Singer, 1993). Singer and Cavalieri base this proposal on a scientific claim that these primates have the cognitive capacity to learn language. The point here is not lost on Derrida, who, confronting this “humanist logic,” argues that:

To put this limit to the test of the worst experimentations, it is enough (I leave it to you) to imagine a thousand situations in which one would have to decide which life goes first—before the other [...] [Saving] a human embryo a few weeks old, destined after birth to live a short life—one day, for example—and a life of mental and physical handicap—saving such a life without the slightest future ought to come before the lives of millions, or an infinite number of living animals in full health and with a full future. *Who will say that this choice really is possible or easy?* [...] what is certain is that in the humanist logic [...] the putting to death of the newborn, abandoning the newborn to its death, the failure to assist a person in danger that that represents, will be judged to be criminal and cruel, whereas the killing of billions of beasts would not be. (Derrida, 2009, pp. 109–110; italics added)

By contrast to a proposal such as that of Singer and Cavalieri, Derrida is less concerned with the question whether animals have language and more with the question of their suffering. Following Jeremy Bentham, Derrida asks: Can they suffer? This is a problematic question for Derrida inasmuch as it brings to the fore the moral demand to interrogate the human capacity for compassion, i.e., the sharing of suffering among living beings, assuming the so-called responsible scientist can share in the suffering of the animal that, though a living being, is a subject of the animal research process stipulated in the scientist’s research design, the protocol that authorizes the research. To share in the suffering of the animal is to manifest compassion such as humans are declared to possess; and this raises the additional question about the limit(s) that belong to human compassion⁷.

To ask whether animals *can* suffer seems naive, given that the IACUC review presupposes that animals *do* suffer and that such suffering *should* be minimized during all processes that are part of the use of animals in biomedical research. But, Derrida asserts a mandate, unequivocally: “The relations between humans and animals must change. They must, both in the sense of an ‘ontological’ neces-

sity and of an ‘ethical’ duty” (2004, p. 70). Ontology, of course, concerns the way one construes the being of the given animal as one being, in this case a living being, among other beings. To speak of ethical duty here is to intend a redetermination of the ethics of animal experimentation; and to speak of duty here is to intend a non-utilitarian discourse. It will not do merely to transpose the concept of human rights to animals, even if limited (as proposed by Singer and Cavalieri) to some species of nonhuman primates. For, when one does so one merely presupposes, tacitly and without warrant, the priority of the human as the focal point on the basis of which an analysis may proceed. Indeed, Derrida “regard[s] it as ridiculous and heinous to place certain animals above handicapped humans in some new hierarchy” (p. 73).

Derrida is clear why this is untenable: “A certain concept of the human subject, of post-Cartesian human subjectivity, is for the moment at the foundation of the concept of human rights,” which is wholly problematic insofar as “this Cartesian legacy determines all of modernity, including the human relation to ‘the animal’” (pp. 70-71). Thus, Derrida cautions against a violence that has its origin in concept, arguing that “to confer or to recognize rights for ‘animals’ is a surreptitious or implicit way of confirming a certain interpretation of the human subject, which itself will have been the very lever of the worst violence carried out against nonhuman living beings” (p. 71). The ethical duty one has toward animals, if this is to be clarified correctly, requires that one interrogate—and ultimately reject—this surreptitious interpretation of the human, and do so as a matter of ontological necessity.

The clarification of the former is impossible without the clarification of the latter. To Derrida, a proposal such as that of Singer and Cavalieri is unacceptable; he maintains that:

To want absolutely to grant, not to animals but to a certain category of animals, rights equivalent to human rights would be a disastrous contradiction. It would reproduce the philosophical and juridical machine thanks to which the exploitation of animal material for food, work, experimentation, etc., has been practiced (and tyrannically so, that is, through an abuse of power. (p. 71).

Thus, the distinction between use and abuse/misuse of animals is blurred in animal experimentation, to the point of either ignoring or denying from the outset, without a prior interrogation of the question, that such use is misuse and abuse of human power, i.e., a show of human force in contrast to the exercise of human right that is not mere dogma. One has to ask whether and how animal experimentation is itself an instance of what Derrida calls “the ‘techno-scientific’ pathologies of the market or of industrial production,” (p. 71) which includes animal research linked to the R&D component of industrial production of biomedical technologies and biomedical techno-scientific pathologies for numerous animal species. One must ask this even while conceding that, as Derrida opines, obliquely, inviting our further interrogation of the claim: “No doubt it will always be necessary to kill animals” (p. 75).

Awareness of animal suffering is, for Derrida, to be gained not in the setting of an isolated animal killing but in the setting of industrial slaughter. Hence, the scale, itself a consequence of technological enframing of animal existence, is central to the assessment. We have here what Derrida calls an intolerable spectacle, hence his question: “If you were actually placed every day before the spectacle of this industrial slaughter, what would you do?” (p. 76). This is not an idle question. It poses the problem of every individual human’s ethical duty in the face of what should be intolerable, *every* day. Derrida is clear:

I’m saying that we must not invoke the violence among animals, in the jungle or elsewhere, as a pretext for giving ourselves over to the worst kinds of violence, that is, the purely instrumental, industrial, chemico-genetic treatment of living beings. Whether this treatment is carried out for the production of food or in the form of experimentation, it is necessary to set up rules so that one cannot do just whatever one pleases with nonhuman living beings. (p. 78)

This means questioning why a procedure is acceptably instrumental; why the scale must be industrial; why the protocol must be chemico-genetic; etc. However, and this is a steep barrier to surmount: These must be rules that are equivalent in force and in law [*droit*] to rules against genocide: “[G]athering together hundreds of thousands of beasts every day, sending them to the slaughterhouse, and killing them en masse after having fattened them with hormones” (p. 78)—this, for Derrida, is a spectacle for which the concept “genocide” (*geno*-cide, elimination of genus after genus, species-group after species-group, up to the millions in number, daily) applies.

But, allowing for this appropriation of concept, one has to ask: Does genocide apply in the case of biomedical research, in which animals are used/misused/abused? One can surely experience a use of an animal that is a misuse, even a use of an animal that is abuse, hence the regulatory restrictions on research methods that accept animal suffering. But, neither misuse nor abuse of an animal necessarily amounts to genocide, in the sense stated by Derrida. Of course, Derrida is prepared to surrender the word, but if and only if one is well aware of what he is talking about so as not to dismiss—prematurely and without interrogation—any claim that, ethically speaking, such use/misuse/abuse is tolerable (Derrida, 2004). So, one may suspend judgment, for the moment, as to whether animal experimentation in general, when sanctioned institutionally (e.g., through IACUC review of research protocols), amounts to genocide. Derrida provides a provisional, somewhat broad guideline:

The difficulty of ethical responsibility is that the response cannot be formulated as a “yes or no” [...] It is necessary to give *a singular response*, within *a given context*, and to take the *risk of a decision by enduring the undecidable*. In every case, there are two contradictory imperatives. (p. 81); italics added).

The institutional review (industry, academia, research centre) of research protocol works with specific cases of animal research, no doubt. But, the task here is to reconsider whether the risk to animals is not exceeded by a decision of an IACUC in the event its members are not prepared to endure the undecidable and sustain the case as undecidable rather than approve given protocols. In short, Derrida is moving the regulatory decision not in the direction of approval, but instead in the direction of a declaration that the matter is undecidable, and therefore not permissible, whatever the instrumental value presupposed.

This is not to say that the undecidable is endured on the ground of a declaration of right. If the concept of right in the context of human rights is a matter for deconstruction, it is also a concept that must be rethought, says Derrida. The point here is not to set forth a declaration of animal rights but, instead, “to reconsider the history of law and of the concept of right” such that we can then speak with more clarity of how “right” applies to the animal, to animals, including the animal that is used/misused/abused in the institutional setting of biomedical research (pp. 78-79). Two examples suffice to point out what Derrida means to demonstrate here.

Consider a case of biomedical research involving an animal (thus, a singular case) that opens up the ethical review to contradictory imperatives and poses for reviewers the prospect of enduring the undecidable. Kevin Eggan (Department of Stem Cell and Regenerative Biology and the Harvard Stem Cell Institute) pursues research on amyotrophic lateral sclerosis (ALS), the construction and deconstruction of stem cell models of degenerative neurological disease, and cell reprogramming (Han, et al., 2005; Egli, et al., 2009; Eggan, 2008). In 2004, Eggan presented a research proposal to Harvard’s ethical review boards “to use stem cells extracted from cloned human embryos to study the development of diabetes, Parkinson’s disease, and Alzheimer’s disease” (Kaplan, 2004). From the perspective of regenerative human medicine, Eggan’s research is unproblematic. He works with a mutated gene (SOD1=superoxide dismutase-1) that is identified as a cause of ALS in less than 20% of human ALS patients. Working with mice as an *in vivo* model to phenocopy the disease, mice stem cells are bred “to have either the normal human SOD gene or the mutated version, then allowed [...] to differentiate into motor neurons in large numbers [...] [Both] the normal and the mutated motor neurons [show] signs of neurodegeneration when cultured with SOD-mutant support cells” (Dana Foundation, 2008).

This kind of research involves “breeding and maintaining SOD1 mutant mouse colonies” (Leitner, et al., 2009, p. 1). There is commercial breeding, thus an “industrial production,” of these *transgenic mutant mice* (“transgenic,” “mutant” and “mice” already signals the need for interrogation) as well as individual research laboratory breeding and management of colonies of such “mice.” Some strains are inbred (e.g., 20 generations of brother-sister mating), yielding the research scientist’s desired genotype, consistent with the protocol. Other strains are congenic through targeted mutations and transfer of transgenes (e.g., back-crossed for 10 or more generations). Some mouse models are hybrid, e.g.,

“breeding transgenic males back to a wildtype [...] female,” (Leitner, et. al., 2009), thus assuring replacement of the genome. All such genotypically-altered “animals” are considered “stock” for research, and thus made available from facilities such as The Jackson Laboratory (located in Bar Harbor, Maine/USA).

“Transgenic mutant SOD1 mice are the only ALS mouse models currently available that exhibit all of the histopathological hallmarks observed clinically in sporadic and familiar ALS” (Leitner, 2009, here and for the remaining in-text citations in this paragraph, pp. 1-6). Experimentation in this way means high degenerative morbidity in such “mice”—“In all of these mouse models, massive death of motor neurons in the ventral horn of the spinal cord and loss of myelinated axons in ventral motor roots ultimately leads to paralysis and muscle atrophy,” with disease progression varying from “slow” (4–6 weeks) to “fast” (7–10 days). In addition to mortality due to progression of the disease, deaths also occur due to infection, “damage incurred in the process of delivering the therapeutic intervention of interest,” or because of “other non-disease-related” causes. Further, “SOD1 mouse models of disease, especially on congenic backgrounds, appear to be quite sensitive to environmental factors”; i.e., “there is evidence to suggest that SOD1 mutant mice may be more susceptible to these potential stressors than wildtype animals.” For example, a given researcher may subject these mutants to “intense, high endurance exercise regimes,” which “have been shown to exacerbate motor defects and shorten life-span.” Further, “both stressful and enriched housing conditions [e.g., stressors such as excessive handling, crowded cages, presence/absence of nesting material, noisy environments, erratic changes in light/dark cycle, etc.] can cause physiological and behavioral consequences to laboratory mice [...] and may impact the measured survival of SOD1 mutant transgenic mice.”

Clearly, this is a research model in which “an animal”—the transgenic mutant mouse—that has been genetically altered from its wildtype suffers from the onset through to death of neurological deficits, including: “collapse or partial collapse of leg extension towards lateral midline (weakness) or trembling of hind legs during tail suspension”; “toes curl under at least twice during walking of 12 inches, or any part of foot is dragging along cage bottom/table”; “rigid paralysis or minimal joint movement, foot not being used for forward motion”; and finally, the “mouse cannot right itself within 30 seconds from either side.” This suffering is both foreseen and intended as part of the scientist’s research protocol. Some researchers expect therapeutic delivery is required at disease onset, while others argue for pre-onset delivery, whatever the observations of neurological score and, thus, observed suffering. In preclinical studies using this transgenic mutant model, “death [...] is typically measured as the inability of an animal to right itself within 15–30 seconds if laid on either side,” entailing “euthanization” (because “the animal is no longer capable of reaching the food hopper or water source”) (p. 5).

As a matter of humane use of these mutants relative to the goal of therapeutic efficacy, it is recommended that, before a researcher undertakes thorough pre-

clinical studies in large cohorts of these models, s/he should “ensure that the therapeutic intervention of interest has the intended effect on the target tissue of interest [e.g., brain tissue, spinal cord tissue] using a reasonable biological correlate” (p. 6). Such “target tissue confirmation studies” count as “proof-of-concept studies” and allow for reduction in the number of animal models to be used in the preclinical study—the difference between the concepts “animal” and “animal model” being that the former refers to the *natural* being and the latter to the *enframed* being. Thus, “a preclinical study is not warranted if the treatment of interest is unable to reproduce *in vivo* the biological effect predicted or shown *in vitro*” (p. 6).

The foregoing is but one example of animal experimentation in which one can interrogate a “limit” between the human who uses/misuses/abuses otherwise wildtype mice through breeding of inbred, congenic and hybrid mutants. But, as the Nuffield Council working group remarks, genetic modification remains a matter of concern, i.e., “concerns about the unpredictable consequences that the deletion or addition of one or a combination of genes may have on animals that have been modified” (Nuffield Council on Bioethics, 2005, p. 80). After blastocyst implantation in a surrogate, “chimera with reproductive cell modification” leads to inbreeding, i.e., transgenic offspring (p. 98). “The welfare implications for animals used in these kinds of experiments cannot be predicted because it is not known beforehand what type of defect may be produced by the genetic modification,” although there are usually “severe development effects” (p. 99). Further, it is well known that reproductive cloning techniques are designed “to facilitate the targeted genetic modification of animals,” (p. 100) a clear violence that presents the problem of a simulacrum of scientific/biomedical knowledge, i.e., what Derrida called the “fabula” that displaces real knowledge. Movement in the direction of commodification is evident, given the claim that:

One of the aims of the international community of mouse geneticists is to develop at least one mouse mutant line for every gene in the mouse genome over the next 20 years. The total number of mice that are expected to be used in mutagenesis and phenotyping studies is of the order of several million each year in the UK alone. (Nuffield Council, 2005, p. 122; Abbott, 2004)

There is an even more troubling example that relates to Derrida’s concern for limit(s) between human and animal. How are we to process news such as “Researchers in California have created living mice with functioning human stem cells in their brains,” as reported in *National Geographic News* in 2005? (Handwerk, 2005). What does such research mean if it “raises the specter of animal-human hybrids,” even if in the case of this animal model “less than one-tenth of one percent of the test mice’s brain cells are human”? (Handwerk, 2005) Surely, such researchers consider themselves responsible scientists, because this research “suggests that it will be possible to create mouse ‘models’ of human brain tissue, enabling scientists to try out both stem cell interventions and other

potential cures on living human brain cells without having to use humans in the process.” (Handwerk, 2005) In this decision, the humanist logic that concerns Derrida is nowhere interrogated, nor is it unlikely to be interrogated because of its invisibility to most researchers and bioethicists, whose conceptual framework of bioethics analysis tends to be thoroughly modern (i.e., utilitarian or deontological).

The U.S. National Academy of Sciences has issued a series of voluntary research guidelines that “proposed limits on the amount of animal ‘humanization’ that should be permitted.” (Handwerk, 2005) (The very concept of “animal humanization” speaks volumes, pointing in the direction of the undecidable, as the animal as wildtype is contrasted to the animal model that is transgenic.) But, notably, the Academy does not move in the direction of permanent restriction. One bioethicist, Glenn McGee, opines that “[c]ritics of this research would have you believe that to grow our cells in other creatures is repugnant and inhumane. Mice already grow human ears and are used in many experiments to grow colonies of other human cells.” (Handwerk, 2005) One may argue these mixtures are modest indeed. But, what happens if/when, as examined by William Saletan in his article “Making Manimals” in *The Washington Post*, a scientist decides to “increase the ratio of human to animal DNA,” inserting human brain cells “early in embryonic development,” thus to “shape the animals’ architecture,” allowing embryos to grow to maturity, even implanting the resulting embryos in a foster adult, so the embryo can develop, so as to then perform additional experiments on the human embryonic stem cells (hESCs) cultured from this “transgenic animal” having whatever ratio of human to animal DNA (Saletan, 2007)?

It is curious indeed when one asserts that such research is quite “logical,” i.e., “The more you humanize animals, the better they serve their purpose as lab models of humanity [...] It’s the future of medicine” (Saletan, 2007). Such research even moves onward to primates, to inserting “human neural stem cells in monkey brains,” with scientists hoping that such cells will integrate appropriately into mouse or rat [or monkey] brain (Ourednik, 2001, p. 1822). This is not to deny a fact of scientific research: “Embryonic cell mixing and recombination experiments between related species are a traditional approach of experimental embryology, used for more than a hundred years to understand embryonic processes at the cellular level” (James, et al., 2006, p. 97). But, there is more here to be considered than meets the eye, and which should draw the attention of the Derridean deconstructive eye.

Transgenic animals are yet different from proposed *chimeras*, such as the embryonic mouse/human chimera created by researchers (following National Academy of Sciences injection protocol and approved by the Rockefeller University Bioethics Committee). In research conducted at Rockefeller University, scientists worked “to insert human stem cells in mice before [the mice have constructed their own brain architecture],” (Saletan, 2007), i.e., “embryonic day 3.5 mouse blastocysts” having “10–15 cell clumps” that are “cultured in vitro for 6 days”

(James, et al., 2006, p. 91). For now, there is a scientific limit in these experiments: “Because in vitro culture of blastocyst outgrowths cannot begin to recapitulate the dynamic process of early embryonic development in vivo, it is unclear from these experiments whether hESCs and mouse ICM [intracellular mass] derivatives would combine to form a coherent embryo” (p. 96). Further, “Given the strikingly disparate developmental schedules for mouse and human embryogenesis, it is unexpected that embryonic cell types from the two species could be combined within chimeras to form a coherent embryo” (p. 97). However, James et. al. nonetheless argue that:

Due to obvious barriers precluding the use of human embryos in [...] cell mixing experiments with hESCs, human/non-human chimeras may need to be generated [...] Embryonic chimeras generated in this way offer the opportunity to study the behavior of specialized human cell types in a non-human animal model. (p. 96)

Accordingly, James et. al. pursued their experiments to the next logical stage of research design:

To determine whether embryonic chimeras generated by blastocyst injection would give rise to developmentally viable embryos in vivo, we transiently implanted hESC-injected blastocysts into the uterus of pseudopregnant foster mice and harvested them, along with uninjected controls, at embryonic day 8 [...] Of 28 chimeric embryos that were implanted, 24 formed deciduae that contained embryos [...]. (p. 97)

With this experiment, James et. al. have published data that “establish for the first time that hESCs can integrate into the mouse embryo, validating the potential for non-human embryos to serve as a surrogate environment in which to study hESCs and their derivatives” (p. 98).

Thus, following Derrida, one must ask, as a consequence of both ontological necessity and ethical duty, what happens to the limit between the human and the mouse when scientists report “Strikingly, hESCs that engrafted to mouse embryos localized to their niche of origin, the ICM, despite a hundred million years of evolutionary distance” (p. 91)? We must also ask ourselves what might be said about this limit when scientists then propose:

These approaches can be extended to take advantage of the large collection of mutant mice for use as host, and genetically modified and/or diseased hESCs as graft, to address both basic embryological properties of hESCs as well as to shed light on their potential application for cell-based therapies. (p. 91)

What happens to yet other limits when one learns from other experiments that “chimeras generated from the more evolutionarily distant species were not viable, presumably due to irreconcilable differences between developmental pro-

grams”? (p. 100) Or, on the other hand, that “chimeras generated from mixing embryos of closely related species [...] resulted in successful development to adulthood”? (p. 100)

Already, we have the evidence of completed experiments and publication of research reporting grafting human neural stem cells into the brains of fetal monkeys (Ourednik, 2001). In addition, we have a postnatal chimera such as XO47, “an average green vervet monkey,” (Shreeve, 2005), a research animal among others at a biomedical research facility on the Caribbean island of St. Kitts. As part of research conducted by Yale University’s psychiatrist and neurosurgeon Eugene Redmond, XO47 has “three million human brain cells injected into his cranium [the basal ganglia]” as part of *in vivo* research related to Parkinson’s disease (Schreeve, 2005). Would one consider a scientist responsible (in Derrida’s sense) if s/he decides to mix embryos of more closely related species—say, cell mixing of hESCs and chimpanzee blastocyst? Given the 98+% genomic similarity of the two species, notwithstanding different number of chromosomes (46 for human, 48 for chimpanzee), there is hope of successful development resulting in a coherent embryo implanted in a pseudo-pregnant chimpanzee, that is then permitted to develop to term for subsequent *in vivo* experimentation. After all, it is argued, that such a viable chimeric *humanzee*, made possible by blurring the current limit between a human (*Homo sapiens*) and a chimpanzee (*Pan troglodytes*), could “be of considerable value for the modeling of human development and disease in live animals,” and thus for scientific progress in human neurogenesis. (Shreeve, 2005)

Yet, again following Derrida, is it not the case that “all modern genetic research, including the sequencing of the human genome itself, underscores how trivial biological difference really is between a human being and the rest of life” (Schreeve, 2005)? Indeed, the Working Group on Interspecific Chimeric Brains commented that:

Many of us expected that, once we’d pooled our expertise, we’d be able to say why human cells would not produce significant changes in non-human brains. But the cell biologists and the neurologists couldn’t specify limits on what implanted cells might do, and the primatologists explained that gaps in our knowledge of normal non-human primate abilities make it difficult to detect changes. And there’s no philosophical consensus on the moral significance of changes in abilities if we could detect them. (Greene, 2005)

Perhaps it is to be said that biological difference as such, or in and of itself, cannot be governing in any discourse concerning the ontological and moral status of beings, human or nonhuman.

In 2005, one commentator wrote:

In the future brave new world of neuroscience, surgeons hope to be able to replace lost or diseased parts of the brain with new, healthy neural stem

cells grown in the lab. Testing this therapy first in animals would show how well the cells integrate themselves in the brain [...] If stem cell therapies for Alzheimer's or Parkinson's disease were to be developed, regulatory authorities might specifically require tests in primates before going further in permitting clinical trials with human patients. ("Testing," 2005)

Despite ongoing questions about whether primates generally provide good animal models for human neurodegenerative disease, Greene et al. consider "whether experiments with stem cells and the brain" pose "any new, unique ethical quandaries" (Greene, et al., 2005). This panel "unanimously rejected ethical objections grounded on unnaturalness or crossing species boundaries," citing empirical claims that "the notion that there are fixed species boundaries is not well supported in science or philosophy" (Committee, 2005). Concurring with the U.S. National Academy of Sciences, the panel sees "no new ethical or regulatory issues regarding chimeras themselves" (Greene, et. al., 2005). Such a claim is defensible only by appeal to the humanist logic that is in contention.

That said, the panel does concede that "[o]ne conceivable result of H-NHP [human-nonhuman primate] neural grafting is that the resulting creature will develop humanlike cognitive capacities relevant to moral status." (Greene, et. al., 2005) Indeed, the panel concluded unanimously that it was "unable to rule out the possibility of effects on cognition of the sort that matter to moral status." (Greene, et. al. 2005) Thus, on this view, cognitive capacity is central to moral standing, which is different from either phenotypic or genotypic differences determined by biological assessments. But, even here the problem of threshold is not clear. Neural grafting has effects that are not immediately evident to the eye. Biologist William Hurlburt opines that "a visible chimera would veer dangerously off course [...] That's why chimeric creatures are monsters in mythology in the first place" (Schreeve, 2005). If recombinant genetics research, i.e., specifically primate bioengineering, were able to produce a *humanzee* that has visibly human features such as a human face, would this be morally objectionable? But, if yes, then phenotypic presentation does contribute to moral evaluation (to be distinguished from mere aesthetic or emotional response). And, what of the so-called gonad quandary? If an animal-nonhuman chimera experiment really works through the introduction of fully potent human embryonic stem cells into the very early embryo of a chimpanzee, then "the human cells should differentiate into all of the embryo's cell lineages, including the one that eventually forms the animal's reproductive cells" (Schreeve, 2005). Is this research consequence morally objectionable, given an assortment of other consequences associated with the resultant chimera's reproductive success? If yes, then genotypic presentation does contribute to moral evaluation.

DeGrazia (2007) and Eberl and Ballard (2009) have engaged in the problem of such animal research somewhat more carefully. Eberl and Ballard, following Thomas Aquinas, outline "a metaphysical framework in which to argue how a-h [animal-human] chimeras ought to be defined ontologically" (Eberl and Ballard, 2009, p. 476). For them, "The ontological question at hand, on the

Thomistic view, is whether an a-h chimeric embryo, through the addition of human cells, possesses the intrinsic capacity to produce a cerebral cortex that supports self-conscious rational thought” (p. 476). The key question here is one of personhood and not mere rational capacity, and specifically whether the animal-human chimera is no longer the equivalent of a “nonrational sentient animal” but a rational animal. Thus, Eberl and Ballard argue,

If certain types of a-h chimeras qualify as persons, then any experiments that involve their destruction, or otherwise harm them when it is not to their own benefit, would be impermissible—or at least require stringent justification—despite whatever other goods may be promoted through such experimentation. (p. 476)

DeGrazia argues in favour of respect for nonhuman primates and the prohibition of experimentation on them (2007). He argues, “Great Apes [i.e., chimpanzees, bonobos, gorillas, orangutans] are so much like paradigm persons with respect to relevant characteristics that we ought to regard them as our equals in moral status” (DeGrazia, 2007, here and for the remaining in-text citations in this paragraph, pp. 312–321). By “paradigm person” DeGrazia means “normal human children, adolescents, and adults [who are] characteristically psychologically complex, linguistically competent, and highly social.” (Great Apes have a “capacity for intentional action,” displaying “unusual deliberateness, planning, or reasoning—activities that also indicate a degree of rationality”; they are self-aware, as well as socially self-aware given their social structures (“long-term relationships, dominance hierarchies, and shifting allegiances”) and “apparently altruistic actions that seem neither conditioned nor instinctual.” Thus, on DeGrazia’s account, “normal, postinfancy Great Apes are *borderline* persons”.

But, more to the point, DeGrazia’s analysis also links well with Derrida’s question of whether an animal suffers; for, as DeGrazia says, “[T]he thesis that all humans, and only humans, have moral status is undermined by the considered judgment that cruelty to (sentient) animals is wrong, a judgment whose coherent defense requires attributing some moral status to victims of cruelty” (p. 314). Great Apes, as sentient borderline persons, possess moral status so as not to be subjected to cruelty, including cruelty they may undergo as subjects of scientific experimentation—which is to be prohibited,

unless (1) their participation is realistically expected to pose no more than minimal risk to them, or (2) greater risks are justified by the prospect of direct veterinary benefit to them and the absence of alternatives offering a better benefit/risk ratio. Moreover, if Great Apes find participation aversive, making clear signs that they don’t want to continue, these communications should count as dissent and should disqualify the subjects from further participation—unless they face substantial veterinary need and participation in the study is the best hope for meeting it. (p. 325)

DeGrazia thereby argues in consequence, “The chimera studies under consideration, which are intended to lead to the growth of human neurons in primate subjects’ brains, would not meet these ethical standards and therefore should be prohibited” (p. 325).

The discussions of DeGrazia and Eberl and Ballard are important first steps toward needed discussion, presenting some ways (whether through scholastic or other metaphysical analysis) to sort out scientific-technological limits of human/nonhuman animal relations. Nonetheless, the foregoing analysis leads to one salient conclusion: Only a redetermination of our ethical duty—such that, as Derrida proposed, this duty is (1) not grounded in mere human self-interest, thus (2) not grounded in a posit of human right, (3) not driven by some utilitarian calculus privileging human interest over animal interest, and (4) not grounded in declarations of ontological-moral status issued in scholastic/religious or late modern philosophy—would position us reasonably to interrogate the multiplicity of human/nonhuman animal limits. And, without doubt, this interrogation must occur proactively, if we are to find ourselves responsive to scientific-technological pathologies generated by ostensibly responsible scientists engaged in animal experimentation.

The Nuffield Council points to some basic questions that are yet unsettled in this regard; namely that some make a distinction between animals having life as an absolute value, such that “it would be wrong deliberately to take a life for any purpose, even for the saving of a greater number of human lives”; while others argue that the life of an animal has intrinsic value, such that “it would be wrong deliberately to take a life for any purpose without careful justification” (Nuffield Council on Bioethics, 2005, p. 242). The latter view entails what has been called “forced consequentialist sacrifice,” insofar as animals used in experiment “suffer costs and do not accrue any benefits, while humans receive all the benefits.” While the debate on the question of absolute vs. intrinsic value continues, the working group claimed, at the least, by way of a conditional proposition: “Harmful research involving animals must be morally unacceptable if animal life is seen as having absolute value, or if forced consequentialist sacrifice is always seen as wrong” (p. 242).

Whatever one’s proposed settlement to the foregoing conditional proposition, before a redetermination of ethical duty can happen as a matter of fact, in contrast to what can happen as a matter of discursive deconstruction, one must be attuned to the requisite comportment. Derrida points to it when he says:

A principle of ethics or more radically of justice, in the most difficult sense, which I have attempted to oppose to right, to distinguish from right, is perhaps the obligation that engages my responsibility with respect to the most dissimilar [*les plus dissemblable*] [...] the entirely other, precisely, the monstrously other, the unrecognizable other. The “unrecognizable” [*méconnaissable*], I shall say in a somewhat elliptical way, is the beginning of ethics, of the Law, and not of the human. So long as there is rec-

ognizability and fellow, ethics is dormant. It is sleeping a dogmatic slumber. So long as it remains human, among men, ethics remains dogmatic, narcissistic, and not yet thinking. Not even thinking the human that it talks so much about. (Derrida, 2009, p. 108)

Like Derrida, Isaac Bashevis Singer (cited above in epigraph) understands what is at stake here, adding to the clamour that would wake us from our dogmatic slumber. His words signal that the use/misuse/abuse of animals—even that of the otherwise wildtype mouse that has been transfigured into a transgenic chimera—amounts to “an eternal Treblinka,” thus, to *geno*-cide—even if it is understood that this type of genocide is measured by a law other than that posited by the human *qua* sovereign. For, as Derrida reminds, this sovereign assumes, without just reason, “the beast [as being] ignorant of right and the sovereign [as] having the right to suspend right, to place himself above the law that he is, that he makes, that he institutes, as to which he decides, sovereignly” (p. 32).

In all humanist logic to date, “There is no ‘crime against animality’ nor crime of genocide against nonhuman living beings”—i.e., no such crime as a matter of human delimitation of “right” [*droit*] (p. 110). But, if we have learned anything from Derrida’s deconstructive engagement of sovereignty in relation to this humanist logic, it is that the human must, as a matter of ethical duty (in Derrida’s sense of ethics) dispossess himself of this expropriation, as a matter of justice due to all animals, howsoever dissimilar. Derrida admonishes: “Having doubts about responsibility, decision, one’s own being-ethical, can be, or so it seems to me, and ought perhaps to remain, the indefeasible essence of ethics, of decision, and of responsibility” (p. 119). Foreswearing the modern humanist logics, then, to be a scientist responsibly, to be a bioethicist responsibly, each must keep be guided not by the obligation of non-maleficence as the first of principles in biomedical ethics, but rather, in a world of heightened scientific-technological pathologies generated by the biomedical sciences, the architectonic rule *to endure the undecidable*.

In that context, the Incompleteness Theorem of Bioethics holds that: (A) In any well-formed theory of the ethical, the truth of some moral propositions is undecidable within the frame of the theory, in which case (B) it is obligatory that one endure the undecidable as undecidable, rather than posit a simulacrum of truth that, in consequence, violates the principle of non-maleficence that applies to all living beings⁸.

This theorem—which accounts for postmodern critiques of modern foundationalist, systematic philosophy, thus also of the systematic approach in modern moral philosophy—imposes a limit to human claims to knowledge, and therefore an insuperable limit to the human claim to sovereignty over the beast. Thereby, the political-philosophical and onto-theological traditional *problématique* that Derrida has surveyed is displaced in the interest of both humans and animals in all their diversity and multiplicity. This means, for bioethics, and for biomedical research involving animal experimentation in particular, a reassessment of what

it means to be cruel to animals beyond the current regulatory structure that is grounded, objectionably, in utilitarian calculations of human interest. This means, then, with reference to the case examples illustrated above, that rather than have such experiments approved and even considered approvable via the regulatory apparatus now in place, such research protocols should have been allocated to the undecidable, with the ethics review committees sustaining this undecidability and thereby ruling such experiments not permissible, in deference to the lack of justification that is to be found in a fable as opposed to in real, scientific knowledge.

With this theorem we stand at “the threshold of responsibility” that Derrida would have us interrogate. Thus standing, moved by a deconstructive thinking, we must think, *without knowing*,

that we don’t even consider the existence (whether natural or artificial) of any threshold to be secure, if by “threshold” is meant *either* an indivisible frontier line *or* the solidity of a foundational ground. Supposing that we dwelled on the threshold, we would also have [to] endure the ordeal of feeling the earthquake always underway, threatening the existence of every threshold, threatening both its indivisibility and its foundational solidity.
(p. 310)

Thus we have all the more reason to endure the undecidable—and from there, in the pursuit of the good, to begin to sort out “the best practicable” when we cannot have “the best” of human/nonhuman animal relations. And, importantly, the best practicable is ever a function of the defeasibility of the assortment of propositions we seek to advance, whether empirical or philosophical.

NOTES

- ¹ See Chapter 1, Reading Selection: “Forward” [sic, “Foreword”], *Roots of the Holocaust*, September 16, 2005, in Professor Michael Bazzyler (Whittier Law School) and Professor Stephen Feinstein (University of Minnesota), *Holocaust, Genocide and the Law* (HGAL Reader), Spring 2006. In their course reader on “Holocaust, Genocide and the Law,” Bazzyler and Feinstein cite the “Foreword” of *Roots of the Holocaust* concerning “the earliest known case of the word [holocaust] having been applied to the actions of the Nazi regime.” It is reported that *Newsweek* used the word with reference to “the mass burning of banned books by the Nazi government in May 1933,” i.e., “a holocaust of books,” thus without any reference to Nazi genocide of Jews (which, of course, is historically posterior to this date). Further, it is asserted here that Jonathan Petrie “demonstrates conclusively that ‘holocaust’ [...] had, long before the rise of the Nazis, an extensive history of being used to describe both natural and manmade catastrophes, and that its application to the Shoah was neither unique nor a product—as sometimes claimed—of theologized notions of the murder of millions of Jews” (p. 20). Thus, as a concept within the history of ideas, “holocaust” cannot be restricted to the denotation it has been assigned, i.e., the Nazi genocide of the Jews (thus to the Jewish Hebrew descriptor, Shoah), even as “genocide” has broader reference than this historical event. Given this account of “holocaust” and its association/correlation to “genocide” in the context of Nazi genocide, Derrida may reasonably broaden the concept of genocide (*geno*-cide) to include human use/misuse/abuse of nonhuman animals. (See also Patterson, 2002)
- ² In “Violence Against Animals,” Derrida says: “While tremendous progress is being made in primatology, this progress is not receiving the attention it deserves. It describes, in a direct and sometimes astounding way, extremely refined forms of symbolic organization: work of mourning and of burial, family structures, avoidance if not prohibition of incest, etc.” In this regard, see de Waal, Frans. “Our Inner Ape: What Primate Behavior Tells Us About Human Nature,” Invited Keynote Address. <http://www.youtube.com/watch?v=RjQkwldlfm>; also de Waal, 2006; de Waal, 2009.3
- ³ See Aquinas, Thomas. *Summa Contra Gentiles*, transl. by the English Dominican Fathers. New York, Benzger Brothers, 1928, book 3, part 2, ch. 112.
- ⁴ See American Psychological Association, “Guidelines for Ethical Conduct in the Care and Use of Animals”, <http://www.apa.org/science/leadership/care/guidelines.aspx>
- ⁵ See Nuffield Council on Bioethics, “Ethical Issues: Is it morally acceptable to cause pain, suffering and death to animals?” <http://www.nuffieldbioethics.org/animal-research/animal-research-ethical-issues>
- ⁶ See Jarvis, S., J. E. L. Day, and B. Reed. “Ethical Guidelines for Research in Animal Science,” British Society of Animal Science. http://www.bsas.org.uk/downloads/Ethical-guidelines_website.pdf
- ⁷ To be fair to him, in this contrast with Derrida, Singer does say (in “Morality, Reason and the Rights of Animals,” that “[u]nless there is some compensating benefit [...] we should consider similar experiences of pain to be equally bad, whatever the species of the being who feels the pain.”
- ⁸ Those familiar with the philosophy of mathematics will recognize here my adaptation of Gödel’s theorem.

REFERENCES

- Abbott, Alison, “Geneticists prepare for deluge of mutant mice”, *Nature*, vol. 432, 2004, p. 541.
- American Psychological Association, “Guidelines for Ethical Conduct in the Care and Use of Animals”. <http://www.apa.org/science/leadership/care/guidelines.aspx>.
- Anderson, Ray, “Theological Anthropology”, in *The Blackwell Companion to Modern Theology*, London, Blackwell Publishing, ch. 6, 2004.
- Aquinas, Thomas, *Summa Contra Gentiles*, transl. English Dominican Fathers, New York, Benzger Brothers, 1928, book 3, part 2, ch. 112.
- Berger, Lee R., “Viewpoint: Is it time to revise the system of scientific naming?”, *National Geographic News*, Thursday, October 28, 2010. Reprint from December 4, 2001. http://news.nationalgeographic.com/news/2001/12/1204_hominin_id.html
- Cavalieri, Paola, *The Animal Question: Why Nonhuman Animals Deserve Human Rights*, Oxford, Oxford University Press, 2003.
- Cavalieri, Paola and Peter Singer, “The Great Ape Project—and Beyond”, in *The Great Ape Project*, New York, St. Martin’s Press, 1993, pp. 304–312.
- Committee on Guidelines for Human Embryonic Stem Cell Research, “Guidelines for Human Embryonic Stem Cell Research”, National Research Council, National Academy of Sciences, Washington DC, 2005.
- The Dana Foundation, “Stem Cells and Neurogenesis: The 2008 Progress Report on Brain Research”. <http://www.dana.org/news/publications/detail.aspx?id=10788>
- Dawkins, Maria Stamp, “The Science of Animal Suffering”. *Ethology*, 2008. Web version. DOI: 10.1111/j.1439-0310.2008.1557.x
- Derrida, Jacques, “On Reading Heidegger: An Outline of Remarks to the Essex Colloquium”, *Research in Phenomenology*, vol. 17, 1983, pp. 171–185.
- , “Violence Against Animals”, in *Derrida, Jacques and Elisabeth Roudinesco. For What Tomorrow...A Dialogue*, Stanford, Stanford University Press, 2004, Web. (Original French edition: De Quoi Demain, Editions Galilee, 2001); <http://www.all-creatures.org/articles/an-tp-switch2.pdf>
- , *The Beast and the Sovereign [La bête et le souverain]*, vol. 1. Chicago, University of Chicago Press, 2009.
- , *The Animal That Therefore I Am*, New York, Fordham University Press, 2008.
- DeGrazia, David, “Human-Animal Chimeras: Human Dignity, Moral Status, and Species Prejudice”, *Metaphilosophy*, vol. 38, nos. 2–3, 2007, pp. 309–329.
- de Waal, Frans, *The Age of Empathy*, New York, Harmony Books, 2009.
- , “Our Inner Ape: What Primate Behavior Tells Us About Human Nature”, Invited Keynote Address. <http://www.youtube.com/watch?v=RjQkwldlfn>

—, *Primates and Philosophers: How Morality Evolved*, Princeton, Princeton University Press, 2006.

—, “The Origins of Morality”, Radio National: The Science Show, Transcript, June 23, 2012, 12:05PM. <http://www.avc.net.au/radionational/programs/scienceshow/frans-de-waal—the-origins-of-morality/4051518>

Eberl, Jason T. and Rebecca A. Ballard, “Metaphysical and Ethical Perspectives on Creating Animal-Human Chimeras”, *Journal of Medicine and Philosophy*, vol. 34, 2009, pp. 470–486.

Eggan, Kevin C., “Using stem cells and reprogramming to understand disease”, *Regenerative Medicine*, vol. 3, no. 6, 2008, pp. 799–801.

Egli, Dieter; Vladislav M. Sandler; Mari L. Shinohara; Harvey Cantor; and Kevin C. Eggan, “Reprogramming after chromosome transfer into mouse blastomeres”, *Current Biology*, vol. 19, no. 16, 2009, pp. 1403–1409.

Festing, Simon and Robin Wilkinson, “The Ethics of Animal Research: Talking Points on the Use of Animals in Scientific Research”, *EMBO Reports*, vol. 8, no. 6, 2007, pp. 526–530. <http://www.nature.com/embor/journal/v8/n6/pdf/7400993.pdf>

Greene, Mark, “Experts discuss use of human stem cells in ape and monkey brains”, July 14, 2005, Office of Corporate Communications, Johns Hopkins University School of Medicine. http://www.hopkinsmedicine.org/Press_releases/2005/07_14_05.html

Greene, Mark, et al., “Moral Issues of Human-Non-Human Primate Neural Grafting”, Policy Forum, *Science*, vol. 309, 2005, pp. 385–386.

Han, Steve S.W.; Luis A. Williams; and Kevin C. Eggan, “Constructing and deconstructing stem cell models of neurological disease”, *Neuron*, vol. 70, no. 4, 2011, pp. 626–644.

Handwerk, Brian, “Mice with Human Brain Cells Created”, *National Geographic News*, December 14, 2005. http://news.nationalgeographic.com/news/2005/12/1214_051214_stem_cell.htm

Heidegger, Martin, “Positionality”, Bremen and Freiburg Lectures. Bloomington, Indiana University Press, 2012, pp. 23–43.

—, *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, Bloomington, Indiana University Press, 1995.

Hobbes, Thomas, *De Cive*, Cambridge, Cambridge University Press, 1998.

Hume, David, *A Treatise on Human Nature*, Harmondsworth, Penguin, 1985.

James, Daylon; Scott A. Noggle; Tomasz Swigut; and Ali H. Brivanlou, “Contribution of human embryonic stem cells to mouse blastocysts”, *Developmental Biology*, vol. 295, issue 1, July 2006, pp. 90–102. <http://www.sciencedirect.com/science/article/pii/S0012160606002260>

Kaplan, Katherine A., “Professors Ask to Clone Cells”, *The Harvard Crimson*, October 14, 2004; <http://www.thecrimson.com/article/2004/10/14/professors-ask-to-clone-cells-a/>

Laboratory Animal Science Association and The Animal Procedures Committee, “Final Report of a LASA/APC Working Group to Examine the Feasibility of Reporting Data on the Severity of Scientific Procedures on Animals”, October 2008.

Leitner, Melanie; Sheila Menzies; and Cathleen Lutz, “Working with ALS Mice: Guidelines for preclinical testing and colony management”, Bar Harbor, Maine, The Jackson Laboratory, October 14, 2009.

Mathews, D.J.H., et al., “Cell-based interventions for neurological conditions: Ethical challenges for early human trials”, *Neurology*, vol. 71, no. 4, 2008, pp. 288–293.

Muotri, Alysson R., et al., “Development of functional human embryonic stem cell-derived neurons in mouse brains”, *Proceedings of the National Academy of Science (USA)*, vol. 102, 2005, pp. 18644–18648.

Nuffield Council on Bioethics, *The Ethics of Research Involving Animals*, London, 2005

Ourednik, Václav, et al., “Segregation of human neural stem cells in the developing primate fore-brain”, *Science*, vol. 293 (5546), 2001, pp. 1820–1824.

Patterson, Charles, *Eternal Treblinka: Our Treatment of Animals and the Holocaust*, New York, Lantern Books, 2002.

PCRM Board of Directors, “PCRM Position Paper on Animal Research”, July 21, 2010. <http://www.pcrm.org/research/animaltestalt/animaltesting/pcrm-position-paper-on-animal-research>

Saletan, William. “Making Manimals,” *The Washington Post*, June 24, 2007; http://www.washingtonpost.com/wpdyn/content/article/2007/06/22/AR2007062201643_pf.html

Schreeve, Jamie, “The Other Stem-Cell Debate”, *The New York Times*, April 10, 2005; Web.

Singer, Peter, “Morality, Reason, and the Rights of Animals”, in Frans de Waal, *Primates and Philosophers*, Princeton, Princeton University Press, 2006.

“Testing human brain cells in non-human primates: the debate”, *The Times Higher Education*, July 22, 2005.

<http://www.timeshighereducation.co.uk/story.asp?storyCode=197533§ioncode=26>

Wood, David, “Thinking with Cats”, in Peter Atterton; Peter and Matthew Calarco, eds., *Animal Philosophy*, London, Continuum, 2004, pp. 129–144.