Comment

A Patent on the Conscious: A Theoretical Perspective of the Law on Patentable Life

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Introduction

Just over twenty years ago, the United States Patent and Trademark Office (PTO) reversed its long-standing policy of denying patent claims on animal subject matter, and began to accept patent applications for “non-naturally occurring non-human multicellular living organisms” created through genetic engineering or other processes.\(^1\) The precursor to the 1987 policy change was the Supreme Court decision in *Diamond v. Chakrabarty*\(^2\). In *Chakrabarty*, the Court held that a “live, human-made”\(^3\) bacterium was patentable subject matter under the statutory language of 35 U.S.C. § 101. Section 101 provides that a patent may be issued to a person who “invents or discovers any new and useful . . . manufacture, or composition of matter,”\(^4\) which was defined in *Chakrabarty* as “a product of human ingenuity ‘having a distinctive name, character [and] use,’”\(^5\) and not merely a “hitherto unknown natural phenomenon.”\(^6\) The Court reasoned that Congress, in using such broad language as “manufacture” and “composition of matter,” intended patent laws to be given wide scope.\(^6\)

The *Chakrabarty* decision provided the first instance where conflicting positions regarding the meaning of “life” and its patentability emerged. Initially, the PTO rejected Chakrabarty’s claims to the bacterium on two grounds. The first was that “micro-organisms are products of nature;”\(^7\) the second was that “as living things [micro-organisms were] not patentable subject matter under 35 U.S.C. § 101.”\(^7\) The dissent in *Chakrabarty* agreed with the agency’s position, and further warned that “[g]iven the complexity and legislative nature of this delicate task, [the Court] must be careful to extend patent protection no further than Congress has provided.”\(^8\) Nevertheless, five Justices disagreed and determined that 35 U.S.C. § 101 covered living organisms. Seven years later, the PTO issued its policy statement that animals were likewise patentable subject matter. This policy statement ignited widespread controversy and debate on “scientific, regulatory, economic, and ethical issues” regarding society’s relationships with and uses of animals.\(^9\)

This Comment will explore the nature of these uses and relationships, and suggest that Congress, the PTO, and the courts have fashioned patent law in a way that fails to acknowledge their full scope. Specifically, patent law has

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3. *Id.* at 305.
5. *Chakrabarty*, 447 U.S. at 309-10 (quoting Hartranft v. Wiegmann, 121 U.S. 609, 615 (1887)).
6. *Id.* at 308.
7. *Id.* at 306.
8. *Id.* at 319 (Brennan, J., dissenting).
traditionally been supported with utilitarian and classical liberal arguments. Despite the various ways that the patenting of animals challenges this traditional framework, U.S. patent law failed to adjust in the wake of the PTO’s decision. The most effective way to address tensions between animal life and patent law is by acknowledging that animals hold a status in our society that is fundamentally different from simple life forms, and that substantial changes in the law and our understanding of the patent system must first occur if animal life is to be included. The following discussion will take issue with the manner in which animal subject matter was retrofitted into the U.S. patent scheme, and posits that a new theoretical framework for patent law is needed in order to accommodate these challenges.

Part I begins by addressing the legal developments leading to and following the PTO’s announcement of its new policy. Part II then provides a brief discussion of the major theories that underlie the PTO’s decision and the U.S. system of patent law. Part III will apply these theories to the animal patenting debate. Part IV will challenge the acceptability of the current system, given the analysis in the previous Part. Finally, Part V will suggest other theories to offer a potentially better approach to structuring animal patenting policies.

I. The PTO Policy Becomes Cemented in the Law

It should first be noted that not all observers agreed with the PTO policy statement. The agency’s decision was sharply criticized, and opponents of the policy sought a temporary ban on the issuance of animal patents.10 In fact, “[t]here were immediate calls for the agency to rescind its policy or, alternatively, for Congress to delay or forbid animal patenting.”11

A coalition of critics of the policy has emerged in the wake of the PTO’s decision. Its members raise five major ethical arguments against animal patenting: “(1) interference with the natural world; (2) devaluation of human life; (3) survival of the family farm; (4) commercialization of academic research; and (5) agriculture and laboratory animal suffering.”12

In response to these criticisms, proponents of animal patenting make three standard arguments. The first, incorporating the language of Animal Legal Defense Fund v. Quigg,13 asserts that the PTO’s policy statement is merely interpretative.14

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13 932 F.2d 920 (Fed. Cir. 1991).
Thus, irrespective of questions of morality, the legal authority to patent animals is provided only to Congress by Article I. The second argument advances the proposition that there is no place for moral judgments in the United States patent law. Finally, the third argument is that the property rights associated with animal patenting provide immeasurable benefits to society “by stimulating advancements in knowledge and technology that would otherwise be delayed or never occur.” According to this third argument, now that researchers have an incentive to experiment, they will use patented animals in a variety of “potential commercial applications . . . in agriculture, biomedical research, and the pharmaceutical industry.”

Notwithstanding efforts made by opponents to block the new policy, the rule became cemented in law a year later. In April 1988, the first animal patent was issued to Harvard University for mammals genetically engineered to contain a cancer-causing gene. On the heels of the “Harvard Mouse” patent came the Quigg cases. The district court held that the PTO’s new policy was an “interpretative rule . . . thereby exempt from the public notice and comment requirements of the [Administrative Procedure Act].” Furthermore, the court found that “the PTO could not, as a matter of law, have exceeded its statutory authority in promulgating [such a rule].” On appeal, the Federal Circuit affirmed without ever reaching the issue of whether the rule was valid law, holding that the plaintiffs lacked standing because whatever injury they may have suffered from the PTO rule as members of the general public was not sufficient to put them within the “zone of interests” protected by patent law. In

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14 Interpretive rules are those that “merely clarif[y] or explain[] existing law or regulations,” as opposed to substantive rules, which “effect[] a change in existing law or policy.” Id. at 927.


17 Dresser, supra note 11, at 403.

18 Id. at 405.


21 Id.

22 ALDF v. Quigg, 932 F.2d 920, 937-39 (Fed. Cir. 1991). Plaintiffs argued that they fell “within the ‘zone of interests’ addressed by the patent laws because patents ‘are issued not for private benefit but for the public good’ and that ‘[p]atent case law emphasizes the importance of the public interest and the constitutional requirement of a public benefit.’” Id. at 938. The court of appeals, however, viewed plaintiffs’ interpretation as overbroad, having the potential to “open[] the door to collateral attack on the validity of issued patents” by almost anyone. Id.
effect, the Quigg holdings moved the PTO’s controversial decision beyond the reach of its opponents’ legal challenges.23

Yet normative concepts about the relationships between people and things are at the core of United States property law.24 An analysis of these concepts provides insight into the position animals should properly occupy in the U.S. patent system. In this effort, it seems appropriate to rely on theory in the same manner in which it was used to construct the patent system.

Many scholars have recognized the significance of using theory to mine the complexities of the U.S. system of property rights. For instance, in Human or Animal: A Resolution to the Biotechnological Blurring of the Lines,25 Lauren Cirlin addresses the propriety of patents for human-animal chimeras,26 and focuses specifically on what it means to be “human.” In discussing the difficulties involved in undertaking a theoretical approach to problems arising in patent law, Cirlin writes:

[T]he role of the courts and the Patent and Trademark Office is not to create policy, or to stimulate philosophical contemplation. Therefore, neither can endeavor to define what constitutes a human being. By allowing the Patent and Trademark Office and the federal courts to make that interpretation the people are robbed of their freedom to define the term according to their own personal beliefs. The debate is inherently one of philosophy rather than one of politics or law.27

Animal patenting raises similarly difficult questions about how far patent law can and should extend, as well as who has the necessary authority to implement any changes. Cirlin’s discussion of the connection between law and patentable life supports the view that an examination of animal patentability cannot be divorced from the theoretical principles that underlie patent law.28

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23 See, e.g., Hecht, supra note 16, at 1059-60 (commenting that Quigg creates an ironic situation in which only those researchers and biotech companies who are beneficiaries of the rule have standing to challenge the validity of animal patents).

24 Remigius N. Nwabueze, Biotechnology and the Challenge of Property: Property Rights in Dead Bodies, Body Parts, and Genetic Information 8 (2007) (asserting that “property rights create legal relations between a person and a thing, between persons with respect to things, and between persons without reference to things”).


26 A chimera is an animal that has another species’ gene introduced into its embryonic cell, resulting in an animal that is a mixture of the two species’ cells. Id. at 502 n.4.

27 Id. at 502-03.

28 Nwabueze has hinted at this relationship in suggesting that modern biotechnical applications have come into conflict with traditional property law concepts. Nwabueze, supra note 24, at 1. Bohrer also has questioned how traditional patent doctrines can be applied to the new and different field of biotechnology. Robert A. Bohrer, A Guide to Biotechnology Law
II. The Fundamentals of Patent Law

Patent law follows the traditional property law principle that “[from the moment] the inventor made the invention, he owned it.” Yet patent protection does not confer upon the individual the right to make the product, but the right to “exclude others from making, using, or selling [the product] for a limited time.” This grant of exclusivity is presumed to encourage the disclosure of new inventions to the public, which further encourages production. It has been posited that the patent system is the very reason why this nation has experienced such remarkable technological advances. Undoubtedly, an overriding goal of U.S. patent law is to further knowledge, with the expectation that the public will benefit from technological innovations. As a result, the structure of the patent system set up in the United States has strong classical liberalism and utilitarian forces at its foundation. This structure and the PTO’s authority to grant patents are derived from the United States Constitution and from patent legislation enacted by Congress. In Chakrabarty, the Court noted that “[t]he Constitution grants Congress broad power to legislate to ‘promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.’” The Court added that “[t]he authority of Congress is exercised in the hope that the ‘[t]he productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens.’”

AND BUSINESS 71 (2007); see also AMANDA WARREN-JONES, PATENTING rDNA: HUMAN AND ANIMAL BIOTECHNOLOGY IN THE UNITED KINGDOM AND EUROPE 71 (2001) (discussing traditional and alternative theories used to explain the patent system).

30 Michael E. Sellers, Patenting Nonnaturally Occurring, Man-Made Life: A Practical Look at the Economic, Environmental, and Ethical Challenges Facing “Animal Patents”, 47 Ark. L. Rev. 269, 292-93 (1994) (emphasis added); see also 2 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND *2 (defining a property right as “that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe”); Markey, supra note 29, at 531 (“[The patent right] has nothing whatever to do with the right to make a product. It is totally and simply the government’s agreement to enforce the inventor’s right to exclude others.”).
31 See, e.g., Markey, supra note 29, at 531-32.
32 See, e.g., id. at 533 (arguing that “[e]very patent is a goad to future inventions”).
33 See id. at 532.
34 Art. I, § 8, cl. 8.
37 Id. (citing Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 480 (1974)) (emphasis added).
This theoretical foundation is relevant to the arguments posed in this Comment because the very theories that underlie patent law play a central role in the dialogue surrounding the patentability of challenged subject matter. These theories, however, raise particularly challenging questions in the animal patenting debate, and take on greater meaning and complexity as applied to complex life forms. This Part provides a basic background of the traditional theories of patent law. As it is beyond the scope of this Comment to fully explain the many complexities of these traditional theories, this Comment will instead focus on how the patent law system uses them to justify the system and its policies.

A. Classical Liberalism and Patent Law

The right conferred to the owner of a patent is the right to exclude. In effect, Congress can grant a limited monopoly to an inventor in exchange for the inventor’s later disclosure of the invention. An important limit on this authority, however, is the constitutional restriction that an applicant can only obtain the monopoly if it advances the “useful arts.” This restriction is necessary to serve one of patent law’s major purposes of spurring technological advances, and such an understanding of patent law relies heavily on classical liberalism principles.

In The Wealth of Nations, economist and moral philosopher Adam Smith created a classical theory of economics that has been applied to other areas of academia. As applied to property law, the theory states that the expectation of profit from improving one’s stock of capital rests on private property rights, and on the belief that property rights encourage property holders to develop property, generate wealth, and efficiently allocate resources based on the operation of the market. The patent system, in effect, “produced the incentive to disclose inventions and the free economic environment which encouraged their production.” As this discussion will show, however, the force of these arguments changes dramatically when applied to the animal patenting debate.

B. Utilitarianism and Patent Law

Within the structure of the U.S. patent system, individuals seeking protection for their work must go through the PTO application process. To receive a patent, the United States Patent Act requires that the invention meet the statutory requirements of subject matter and utility, novelty, and non-obviousness. The subject matter and utility requirement has traditionally

38 U.S. CONST. art. I, § 8, cl. 8.
40 Id.
41 Markey, supra note 29, at 531.
played a critical role in determining the patentability of proposed inventions.\footnote{43} As a result, disputes about proposed inventions are rooted in utilitarian arguments.

Utilitarian theory is an ethical doctrine according to which the moral worth of an action is determined solely by its contribution to overall utility. Put another way, utilitarianism is a form of consequentialism that questions whether the ends of an action justify its means. Inventions that on balance do not benefit society should be rejected.\footnote{44}

The inquiries into whether and how an invention may “benefit society” are not stagnant. “Changes in knowledge result in changes in production functions, market values, and aspirations.”\footnote{45} Regardless of the seemingly benign quality of these kinds of changes, caution in patent law and scientific research is urged. “[N]ew ways of doing the same things . . . invoke harmful and beneficial effects to which society has not been accustomed.”\footnote{46}

III. Theoretical Arguments in the Animal Patentability Debate

A. Classical Liberalism and Animal Subject Matter

Arguments in favor of animal patenting rely to varying extents on the theoretical principles of classical liberalism, as discussed in Part II.A above. Again, it was from this classical liberalism foundation that four rationales in support of patent law have developed: patent law is thought to “provide[] . . . the incentive to invent in the first place, the incentive to disclose that invention, the incentive to risk the investment of the large sums and long years of effort required to bring the invention into the marketplace at a reasonable price, [and] the incentive to design around and beyond disclosed inventions.”\footnote{47}

Various scholars have acknowledged that the move toward animal patenting is attributable to “scientific discoveries enabling researchers to create ‘transgenic’ and other genetically-altered higher animals, and potential


\footnote{44} See, e.g., Brenner, 383 U.S. at 534 (“The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility.”). But see, e.g., Lowell v. Lewis, 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817) (No. 8568) (“All that the law requires is, that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society.”).

\footnote{45} Harold Demsetz, Toward a Theory of Property Rights, 57 AM. ECON. REV. 347, 350 (1967).

\footnote{46} Id.

\footnote{47} Markey, supra note 29, at 532.
commercial applications for such animals in agriculture, biomedical research, and the pharmaceutical industry.” In fact, since the “Harvard Mouse” patent there has been an increase in the number of animal patent applications. There also is “ample evidence to support the proposition that transgenic research will subside as a result of lost economic incentives if animal patent barriers are erected.” “The most dramatic evidence of the economic incentive resulting from animal patenting has been the significant increase in the stock values of corporations engaged in biotechnology research.”

However, the intended push to incentivize may backfire. Some suggest that patents in genetic research “could create a ‘tragedy of the anticommons,’ which [is] the underutilization of a scarce resource caused by multiple owners blocking each other through the proliferation of fragmented and overlapping intellectual property rights.”

Patents on genetic research that lock away new information make it impossible for researchers to “invent around” them, essentially creating a “‘double’ monopoly.” Consequently, the commercial incentives used to rationalize biotechnological patents are themselves responsible for delays in the publication of research findings and for stifled collaboration.

While these arguments speak broadly to the conflict between incentives and biotechnological patents, they are particularly relevant to classical liberalism arguments used to support animal patenting. If providing a patent to animal subject matter does not lead to the normative results predicted by classical liberalism theory, the theory’s applicability in the realm of animal patents is called into question. It further raises the difficult question of whether the ends of patenting conscious life justify the means, and more specifically, whether utilitarian arguments still demonstrate a balance that provides net benefits to society.

48 Dresser, supra note 11, at 405.
49 Sellers, supra note 30, at 283-84.
50 Id. at 283.
51 Id. at 284.
54 David Blumenthal et al., Data Withholding in Genetics and the Other Life Sciences: Prevalences and Predictors, 81 Acad. Med. 137, 145 (2006) (explaining that the commercialism of academic science likely results in data withholding).
B. **Utilitarianism and Animal Subject Matter**

“[P]roperty rights specify how persons may be benefited and harmed, and, therefore, who must pay whom to modify the actions taken by persons.”

This distinction between harm and benefit forms the basis of utilitarian arguments made in the animal patenting debate.

1. **Are the risks of animal patenting overstated?**

Proponents argue that the “risks associated with [animal patenting] technology are largely overstated.”

A patent grant suggests that an inventor has adequately explained why the invention’s asserted benefits outweigh any projected harms. Thus, where animal subject matter meets the utility requirement, the amount of suffering that occurs will most likely be outweighed by the amount of suffering that is reduced as a result of the research encouraged by animal patents. Transgenic animals injected with human genomic material can be used to “pharm” vital drugs for human use. They can also be used as test subjects for medical treatments intended for human beings, as sources of organ and tissue transplantation for humans, and for a variety of other applications that are beneficial to society as a whole.

2. **Are the benefits of animal patenting overstated?**

Despite such persuasive utilitarian reasoning, some argue that there is a fundamental flaw in this class of arguments made in support of animal patenting. Robinson broadly concluded that because the patent system “is rooted in a contradiction, there can be no such thing as an ideally beneficial patent system, and it is bound to produce negative results in particular instances, impeding progress unnecessarily, even if its general effect is favorable on balance.”

This anti-utilitarian argument simultaneously attacks principles of utilitarianism as well as principles of classical liberalism. Under this view, even when property rights encourage the property-holder to develop his property and generate wealth, he will only do so for his own benefit, which may not coincide with the benefit of other people or society at large. As applied to the animal patenting debate, this argument is manifested in the fear that animal patents will lead to the commercialization of academic research. The result is that academic

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55 Demsetz, *supra* note 45, at 347.
58 *Id.* at 32-40.
60 Cf. Note, *Distributive Liberty: A Relational Model of Freedom, Correction, and Property Law*, 107 HARV. L. REV. 859, 864 (1994) (discussing power, gained through law, as positional and as a “function of one’s capacity to move others to act or to abstain from action in a way that makes room for one’s will”).
Agendas will shift away from education-oriented objectives towards more commercially lucrative objectives. The legitimacy of this concern is further bolstered by the large amount of federal financial support offered to academic researchers. In the end, private industry may receive benefits disproportionate to public benefits.

3. Does the utility requirement work?

There is also a compelling argument that the PTO “uses a utility requirement insufficient to manage the problems that arise in connection with biotechnological inventions.” Despite the “ethical concerns [and] significant risks to patients, public health, and to the practice of medicine” triggered by patents on biotechnological subject matter, a presumption of utility nevertheless exists, where the PTO presumes that the utility requirement has been met until the patent examiner can prove otherwise. This presumption makes it more difficult for patent examiners to reject applications for animal subject matter. Thus, “a heightened utility standard is necessary in order for patent examiners and federal court judges to adequately consider such applications.” In particular, a heightened standard would force researchers to consider more deeply the utility of the animal invention before experimenting and applying for a patent.

These theoretical defenses and challenges raise serious concerns about whether utilitarian arguments demonstrate that the current structure of patent law as it pertains to animals may cause harm equal to the benefits it generates. Congress rarely excludes otherwise patentable subject matter on policy grounds, however. As of 1988, the only instance of this was in 1954, when Congress enacted legislation to prohibit patenting in the field of nuclear weapons technology. Congress found that the public would not be benefited by the incentive and disclosure requirements of patent law as applied to this field.

In responding to attempts by opponents of animal patenting to place such patents into the same category as nuclear weapons, proponents have argued that animal patents do not meet the exclusionary criteria because they do not violate

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63 Sellers, supra note 30, at 288.
64 Cirlin, supra note 25, at 521.
65 Joly, supra note 52, at 390.
66 Cirlin, supra note 25, at 521.
67 See id. (concluding the same with respect to “inventions involving human material”).
68 Id. at 521-22.
69 See id. at 522.
70 See Dresser, supra note 11, at 404.
71 Id. (citing 42 U.S.C. § 2181(a) (1982)).
72 Id.
any moral norms.73 Merges argues that “even in those cases where moral norms have been invoked to deny patents, the inventions at issue posed a direct threat to a readily identifiable norm—a marked contrast to the case of biotechnology inventions”74 involving animal subject matter, since species integrity is regularly challenged by acts of nature and the commercialization of animals is not a new phenomenon. “Even under traditional immoral use doctrine, . . . courts sometimes have held that an invention was patentable so long as it had some nonimmoral applications,”75 and utilitarian arguments in support of animal patenting indicate that these other applications exist.

Irrespective of whether supporters or opponents make the stronger argument for what the status of animal patentability should be in U.S. law, one thing this debate makes clear is that animal subject matter was poorly incorporated into the existing patent law scheme.

IV. A Patent on the Conscious

Assuming it is possible to move beyond the stifling nature of the Quigg decision to examine the traditional utilitarian and classical liberal theories that underlie patent law, these theories do not permit an adequate discussion of all the challenges raised by animal patenting.

The PTO’s policy statement that complex animals are patentable subject matter is based in a new, broad reading of the language of 35 U.S.C. § 101. Complex animals are different in kind from the bacterium,76 plants,77 and oysters78 that have previously received the green light from the PTO because they are conscious beings.

Because animals are distinct from their living, patentable predecessors, they should be subject to a different treatment under U.S. patent law. Their consciousness makes them distinct: indeed, according to John Locke, it is only a “conscious thinking thing . . . [that] is sensible, or conscious of Pleasure and Pain, capable of Happiness or Misery, and so is concern’d for it self, as far as that consciousness extends.”79 Though some may question the extent to which

74 Id.
75 Id. at 1066.
77 See ex parte Hibbard, 227 U.S.P.Q. 443 (B.P.A.I. 1985) (holding that a corn plant with increased free tryptophan levels is within the scope of patentable subject matter).
78 See ex parte Allen, 2 U.S.P.Q.2d 1425 (B.P.A.I. 1987) (holding that polyploid oysters are “non-naturally occurring manufactures or compositions of matter” that are patentable under 35 U.S.C. § 101).
animals can experience the range of emotions experienced by humans, that animals are conscious beings and can experience pain cannot be denied. Yet patent claims on animals divorce us from our everyday human understanding of complex animals by their language. It is certainly true that “our society determined long ago that it is acceptable to sacrifice the welfare of animals in order to obtain benefits for human beings,” in areas such as food, transportation, and drug testing. Nevertheless, society, science, and the law also have acknowledged the significant differences that exist between microorganisms, plants, and animals.

Ordinary human experience tells us that society considers animal life as distinct from that of the plants, microorganisms, and inanimate objects also covered by patent law. Animals serve not only as sources of food, transportation, or test subjects, but also as guards, aids, and companions. Scientific researchers separate microorganisms, plants, and animals by classifying them into three distinct taxonomic kingdoms. In addition, more so than plants and microorganisms, some animals are genetically similar to humans. Obvious examples are chimpanzees and gorillas, who share a ninety-nine percent DNA match with human beings.

It has been acknowledged that certain animals might “have rights because they have some interests and perhaps even some limited capacity for choice.” The existence of such legislation as the Animal Welfare Act and the anti-cruelty

80 See, e.g., Humane Methods of Slaughter Act, 7 U.S.C. § 1901 et seq. (2000) (federal law requiring that animals be stunned to lose consciousness during the slaughtering process); Animal Welfare Act, 7 U.S.C. §§ 2131-2159 (2006) (acknowledging as its purpose “to insure that animals intended for use in research facilities or for exhibition purposes or for use as pets are provided humane care and treatment”); Twenty-Eight Hour Law, 49 U.S.C. § 80502 (2000) (prohibiting the confinement of animals for more than 28 consecutive hours without unloading the animals for feeding, water, and rest); see also Darian M. Ibrahim, Return to Descartes: Property, Profit, and the Corporate Ownership Of Animals, 70 WTR L & CONTEMP. PROBS. 89, 90 n.6 (2007) (discussing how “scientists routinely conduct pain experiments on animals, which would be pointless if animals could not feel pain”).

81 For example, the patent for the “Harvard Mouse” described the subject matter as “a transgenic non-human eukaryotic animal (preferably a rodent such as a mouse) whose germ cells and somatic cells contain an activated oncogene sequence introduced into the animal.” U.S. Patent No. 4,736,866 col.1 l.30-35 (filed June 22, 1984).

82 Hecht, supra note 16, at 1056.

83 Mark W. Lauroesch, Note, Genetic Engineering: Innovation and Risk Minimization, 57 GEO. WASH. L. REV. 100, 114 (1988); see also Animal Patents: Hearing Before the Subcomm. on Courts, Civil Liberties, and the Administration of Justice of the H. Comm. on the Judiciary, 100th Cong. 525 (1987) (statement of Iver P. Cooper, Patent Counsel, Association of Biotechnology Companies) (arguing that it is “hypocritical to object to patenting animals while tolerating the traditional exploitation of animals, by mankind”).


statutes enacted in all fifty states\textsuperscript{88} provide strong indicia that animals hold a special position in the U.S. legal system. In contrast, “no such legislation has been enacted to protect microorganisms, possibly because microorganisms are considered more like inanimate chemical compounds than animals.”\textsuperscript{89}

Congress’ failure to amend § 101 is a failure to acknowledge the great complexity that the PTO’s 1987 policy statement ushered into patent law. “Biotechnological advances have . . . posed many challenges to the law of property, whose concepts were formulated in the period pre-dating most modern biotechnological applications.”\textsuperscript{90} This is not to argue that animals cannot or should not be considered patentable subject matter. There are strong classical liberalist and utilitarian arguments in favor of animal patenting. However, given the seemingly vast difference between animals and other patentable life forms, the question is whether these classical liberalist and utilitarian arguments still have the same force and relevance when applied to the animal patentability debate. I suggest they do not, and that we must look to other theoretical principles in order to revise the patent law framework within the larger property law framework in a way that provides the proper acknowledgement and respect for animal life.

V. A New Framework

In analyzing the role of property rights in our social system, Demsetz argued that “[p]roperty rights are an instrument of society [that] derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others.”\textsuperscript{91} Given the shifting nature of these expectations, property law is dynamic.\textsuperscript{92} “What is property today may not qualify as property tomorrow.”\textsuperscript{93} As new technological advances emerge, patent law must accommodate these new expectations, rather than retrofit untraditional forms of property rights into a pre-existing patent scheme. This is not to deny that patent law is framed to anticipate future ingenuity that a contemporary Congress could not possibly foresee.\textsuperscript{94} In the case of animal patentability, however, the fit appears clumsy.

\textsuperscript{88} Jones, \textit{supra} note 16, at 904.
\textsuperscript{89} Id. at 905.
\textsuperscript{90} NWABUEZE, \textit{supra} note 24, at 1.
\textsuperscript{91} Demsetz, \textit{supra} note 45, at 347.
\textsuperscript{92} JAMES W. ELY, JR., THE GUARDIAN OF EVERY OTHER RIGHT 6 (1992).
\textsuperscript{93} NWABUEZE, \textit{supra} note 24, at 13.
\textsuperscript{94} This understanding is supported by the novelty requirement of the patent statute. See 35 U.S.C. §§ 101-103 (2006); Cathryn Vasseleu, \textit{Patent Pending: Laws of Invention, Animal Life Forms and Bodies as Ideas, in THINKING THROUGH THE BODY OF THE LAW} 105, 109 (Pheng Cheah, David Fraser & Judith Grbich, eds., 1996) (“If an invention can be anticipated it is unlikely to be a novelty.”).
The traditional theoretical principles underlying patent law need to be reconsidered, and a limited property framework surrounding animal patentability should be adopted. Although the debate over animal patentability is far from being solved, the new framework proposed here offers one promising resolution to the debate: a sui generis form of protection derived from theoretical principles that properly account for the unique status of animals in our society.

A. The Morality Consideration

The application of morality principles is not new to U.S. patent law. In 1954, morality considerations motivated Congress’ decision to create legislation denying patents on nuclear technology.\footnote{See 42 U.S.C. § 2181(a) (2006).} Over a century before the legislation was first enacted, Judge Story charged the jury in Lowell that “the law will not allow the plaintiff to recover, if the invention be of a mischievous or injurious tendency,” such as patents “to poison people, or to promote debauchery, or to facilitate private assassination.”\footnote{Lowell v. Lewis, 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817) (No. 8568).}

Yet proponents of animal patenting maintain that there is no place for moral judgments in United States patent law.\footnote{See, e.g., Hecht, supra note 16, at 1056-58.} Many of these critics acknowledge that while utility was previously interpreted to allow moral considerations to bar patentability, this interpretation of utility has largely been rejected.\footnote{See, e.g., Juicy Whip, Inc. v. Orange Bang, Inc., 185 F.3d 1364, 1366-67 (Fed. Cir. 1999) (asserting that “the principle that inventions are invalid if they are principally designed to serve immoral or illegal purposes has not been applied broadly in recent years”).} As Hecht comments,

Patent laws have not typically been amended to answer any of the kinds of ethical or moral concerns voiced by the animal rights groups. Instead, the United States patent system hinges on a principle of neutrality, whereby the system neither supports nor discriminates against technologies.\footnote{Hecht, supra note 16, at 1057.}

Nevertheless, interest has been expressed in resurrecting the Lowell doctrine, and the refusal of courts to explicitly overturn moral utility suggests that the principle can still be applied in some circumstances.\footnote{See Samantha A. Jameson, A Comparison of the Patentability and Patent Scope of Biotechnological Inventions in the United States and the European Union, 35 AIPLA Q.J. 193, 202-03 (2007).} Though their impact receives little scholarly attention, moral considerations play a significant role in

Incorporating a morality concept is neither as far-fetched nor as unmanageable as proponents of the current framework may suggest. “When it acts on animal patent applications, the Patent Office is in effect making public policy decisions with no public input.” In fact, the PTO has incorporated policy considerations into its guidelines, though the rules receive no deference from the courts because the PTO has no substantive rulemaking authority. However, as Judge Markey cautioned, the opinions of those outside of the legislative process regarding patentability are irrelevant. “It’s not our business. Public policy, as we all know, is for the Congress.”

B. The New Theoretical Framework: TRIPS and the EU Example

If the right to patent animals is preserved, then Congress should reincorporate morality considerations into the patent law framework. The propriety of taking affirmative steps to reincorporate a morality principle is bolstered by the fact that international agreements to which the United States is a party, such as TRIPS and NAFTA, contain provisions whereby members “may exclude from patentability certain subject matter, including plants and animals other than micro-organisms.”

TRIPS generally requires that patents be available in all areas of technology, which presumably includes biotechnology, but allows exceptions from patentability for the protection of “ordre public or morality.” The language of the agreement provides:

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103 Rai, supra note 102, at 1131-32.
104 Markey, supra note 29, at 538.
105 Id.
109 TRIPS, art. 27(1).
111 TRIPS, art. 27(2).
Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.\textsuperscript{112}

The ordre public standard, also applied in the EU,\textsuperscript{113} includes “the protection of public security,” “the physical integrity of individuals as part of society,” and “the protection of the environment.”\textsuperscript{114} Through observing the morality-based theoretical framework taken from TRIPS and the EU system, the U.S. patent system may find that such exclusions will help it “ascertain [its own] nec plus ultra, the invisible line beyond which human research should never go.”\textsuperscript{115}

\section*{C. Morality in Application}

In order to streamline the use of morality considerations in U.S. patent law, Congress has to find a method through which such considerations can be effectively maintained by the patent system. While the ordre public standard of TRIPS and the EU provides a useful example of morality considerations in application, such a standard would be difficult to apply in our system because it would require Congress to cede a substantial, and potentially impermissible, level of authority to the PTO to make routine policy judgments. However, legislation that forces a de facto standard of morality into patent law may prove to be a more effective tactic.

Principles of title theory offer the most promising approach to incorporating morality in U.S. patent law and developing our own nec plus ultra.\textsuperscript{116} The United States has long recognized that an owner of property can divide title into legal and equitable interests.\textsuperscript{117} Favre proposes that interests in animals may similarly be divided into legal title and equitable title,\textsuperscript{118} to create a state which he has coined “equitable self-ownership.”\textsuperscript{119}

\begin{thebibliography}{99}
\bibitem{112} Id.
\bibitem{113} To be excludable subject matter, EU patent law requires that commercial exploitation of the invention be contrary to the ordre public or morality. Council Directive 98/44/EC, On the Legal Protection of Biotechnological Inventions, 1998 O.J. (L 213) 13, art. 6. Ordre public and morality correspond to the moral and ethical principles of the member states, according to the Directive. \textit{Id.} at recital 39.
\bibitem{114} \textsc{Nuno Pires de Carvalho}, \textsc{The TRIPS Regime of Patent Rights} 208 (2d ed. 2005).
\bibitem{115} \textit{Id.} at 205.
\bibitem{116} \textsc{David Favre}, \textsc{A New Property Status for Animals: Equitable Self-Ownership in Animal Rights, in Animal Rights: Current Debates and New Directions} 234, 240-41 (Cass R. Sunstein & Martha C. Nussbaum eds., 2004).
\bibitem{117} \textit{Id.} at 240.
\bibitem{118} \textit{Id.} at 240-41.
\bibitem{119} \textit{Id.}
\end{thebibliography}
Under Favre’s system, responsibility for the animal would remain with the legal owner of the animal. The holder of this legal title would be viewed as having a guardianship over the animal, with duties set by existing animal protection laws. Equitable title, on the other hand, would be transferred to the animal. The legitimacy of this transfer of equitable title to an animal has support in the current U.S. legal system on two grounds. The first is that the current property system gives the legal and equitable owner of an animal the power to act to change the title status of the animal. The second ground is that giving an animal self-owned status, and thereby making it a juristic entity, is the equivalent of affording this status to other non-human entities such as corporations.

This standard allows Locke’s understanding of the human self to be applied to animal subject matter. Providing animals with equitable self-interest in themselves recognizes fully the position of animals in our society, and properly incorporates this understanding into the patent system. As discussed, Quigg effectively foreclosed standing to animal rights groups and other activists seeking to vindicate the rights of animals against the patent system. As juristic persons, animals would now be able to sue for the enforcement of laws protecting their interests. Through legislation providing this new status and legal avenue, a de facto standard of morality will develop in patent law because animals will be capable, so to speak, of making the ultimate determination of when we have reached our nec plus ultra.

Conclusion

It is clear that the application of patent law’s traditional classical liberal and utilitarian arguments have not provided full support for the patentability of animal subject matter. When and if Congress acknowledges that patent rights over animal subject matter are vastly different from patent rights over other simple life forms, it should put an end to the debate by expressly amending § 101 or passing new legislation. Until then, patent rights over animal subject matter will remain precariously perched atop a scheme to which many will continue to argue it does not belong.

121 Id. at 497-98.
122 Id. at 491.
123 Id. at 490-91.
125 See generally Locke, supra note 79.
126 See Cass R. Sunstein, Standing for Animals (with Notes on Animal Rights), 47 UCLA L. Rev. 1333, 1367-44 (2000) (proposing that animals be given standing to sue on behalf of their own interests).
In a U.S. patent law system that has revived the morality principle, there is room for compromise on both sides of the debate. In the proposed modernized system, Congress will have acknowledged the full scope of society’s relationship with animals, animals will have a forum through which their interests may be vindicated, inadvertent policy decisions will no longer be promulgated by the PTO, and the courts will be provided with the proper guidance to continue to serve their role as the final arbiters of justice.