

## Patenting and Transgenic Organisms: A Reply to Lee

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It is my task to respond to Professor Lee's finely argued paper, *Patenting and Transgenic Organisms: A Philosophical Exploration*. I intend to structure my reply in the following way. I will begin by summarizing the argument that is made. Next I will critically examine some specific aspects of Lee's work, in particular her glossing over of the contested nature of patent law. Finally, I want to fill out a stated aim of Professor Lee's to "tease out the full [ontological] implications of transgenic organisms." I will do this by examining the worldview that allows the creation of transgenic organisms in the first place. It is my contention that the whole process begins or is made possible by a reductionistic view of reality.<sup>1</sup> What I would like to examine in more detail is our unwillingness or inability to appreciate the full implications of this mind-set. Specifically, I want to identify our desire to have our cake, or should I say our avocado coloured, strawberry tasting, avian substance, and eat it too in philosophical matters.

What is being discussed, of course are the developments in molecular biology and what these developments have opened up. The technological application of the findings of molecular genetics is the manipulation and exchange of genetic material across species and even kingdoms (i.e., transgenic organisms can be created, and indeed, are being created.). The question is, are these new organisms artifacts worthy of patent protection?

Professor Lee constructs her argument by contrasting what might result from the process of natural evolution with what can be created in the living world with the new technology. Armed with this polarity it is possible to conclude that transgenic organisms are paradigmatic biotic artifacts. Within the framework offered it is hard to contest the conclusion that the organism is an invention since without direct human manipulation at the molecular level it would not have come into existence. Without a doubt a flounder and a tomato will not mate. When they are brought together technologically the resultant organism qualifies for patentability.

The succinct nature of this summary of the paper's central argument should not in any way be seen to discount the contribution the submission makes. Professor Lee's philosophical exploration into novelty as it relates to genetic manipulation and the patenting of the resulting organisms is insightful. This insight should help anyone seeking to understand a world where new living beings now issue from the laboratory.

So, there is little fault to find with the paper as it is structured. But all arguments rest on premises and are no stronger than the fundamental assumptions that hold them up. Transgenic organisms may be novel artifacts but they are thought to be so within a worldview that allows us to ignore species, even kingdom, boundaries and urges us to view animals as patentable products in exactly the same sense as toasters and microwaves are patentable products of industry. Things need to be questioned more foundationally if we are to understand the meaning and significance of these new technological developments. Before engaging in this questioning, I wish to look at some more modest difficulties the paper has.

First of all, there is the impression given that modern patent law is of one piece and is a settled matter. Repeatedly, Lee refers to "modern patent law" and even the "meaning of modern patent law" as a given. But just what these laws are and will ultimately be and what their interpretation or meaning will be is still very much up for grabs. Canada, for example, has yet to approve the patenting of higher life forms.<sup>2</sup>

Secondly, there is the assumption that ethical/social/political issues can be exempted from the discussion. The author explicitly says that these are not her concern, presumably to establish a workable limit for the paper. Lee is not able to expunge all such references from her paper, however. For example, in discussing biotic artifacts (transgenic organisms) and abiotic artifacts (houses and paintings), Lee feels compelled to disclose the angst generated by the environmental risks that engineering living organisms could present. This seems to transgress the boundaries she establishes as it is unrelated to the issue of whether the organisms are novel inventions under patent law.

Even more significant is the question of whether it is possible to set aside these issues even momentarily since patents are a *legal* construct. The matter at hand is not just one of people exercising their ingenuity, which we do all the time, but whether the fruits of these efforts ought to be afforded protection under the law. The discussion of patents is inherently a legal discussion, which means it is

inherently an ethical/social/political discussion. It is impossible to bracket out these matters. Asserting that we can inevitably means that answers will be smuggled into the debate.

Indeed, it is exactly such surreptitiousness that has brought us to the point we are at today. Patents have a long history.<sup>3</sup> If we use the United States as the example, we see that they are as old as the country itself. Crafted by Thomas Jefferson at the birth of the Republic, patents were a means to increase the knowledge available to the public and to secure the wealth of the nation. The patent system that was created by lawmakers in the succeeding centuries granted exclusionary protection to applicants who had invented any new, useful, and non-obvious process, machine, manufacture or composition of matter.

Clearly, the original purpose of patenting and the laws governing the regime were developed to apply to machinery and industrial invention (i.e., to the material world.). Congress's refusal to include coverage for plant varieties under these statutes and their enactment of specific (and much more limited) protection schemes for new plant varieties would further evidence this. In a word, the patent system was manifestly not designed to cover the living world.

As we know, all of this changed with the 1980 U.S. Supreme Court ruling that a living entity could be patented. Why was this policy adopted since it went against the set position of existing patent law to exclude domesticated organisms? Ironically, Lee's text itself provides the answer. A favourable decision in the Chakrabarty case "would clear the way for the numerous products of the biotechnology revolution which were rapidly coming on stream but were held up." In other words, the decision was necessary to do away with the constraints faced by commercial interests. Those seeking pecuniary gain from the new technology needed a clear path for the fulfillment of their desires and they got it. The bigger question, ineluctable and still unanswered, is whether the interests of society as a whole were served. Subsequent decisions by the United States Patent Office itself have solidified the understanding that "anything under the sun made by man" can be patented. And it would appear that it is literally anything.

The stealth of all of this is the adoption of philosophical materialism as a guiding ideology. The questions that ought to have been publicly debated never were:

- Is there really only one ontological category in reality? Is there no difference between animate beings and the non-living world? Is everything that exists nothing but a composition of matter?
- Is life a patentable commodity or a sacred mystery?<sup>4</sup> Does life have intrinsic value or mere utility?
- Are animals nothing more than machines for our use or are they beings with an essence?

Interestingly, this is something that Professor Lee inadvertently recognizes in the paper when she makes mention of the *telos* of the animals in question. This would suggest that we are not dealing with mere objects but rather with living beings who ought to be regarded as subjects of nature.

What I am saying here is that I am unwilling to surrender this ground to our technocratic masters. The proponents of philosophical materialism should have to demonstrate the coherency, the consistency, the congruency and the comprehensiveness of their worldview. The commercial interests that want to enclose the global gene pool and transform it into a commodity to be priced in the marketplace must meet the legitimate concerns expressed by society before this should be allowed to happen. In effect, the burden of proof ought to be on those engaging in the conquest of nature, those proposing ownership of the living world, to show the benignity of their vision, to dispel the angst mentioned by Lee.

The point is that patent law ought to serve us. Clearly we can invent biotic artifacts and patent them but we also have the option to approach the issue from a different perspective. The proper question is, what ought to be the system of intellectual property rights for living beings? Where is wisdom to be found? For example, would humanity be better served by considering the Earth's gene pool to be a shared global commons to be protected and nurtured by all peoples?

I am not optimistic, however, that such a question will be asked anytime soon. The worldview that delivers our formidable technological prowess, including the technological tour de force of transgenic organisms, is firmly in place. Reductionistic, materialistic, scientism has a strangling grasp on human consciousness. Ever since Descartes asserted that essence was quantity, a mechanistic view has been dominant. Beings in reality, even living beings, are

devoid of any unique or essential quality or power that might differentiate them from the strictly material.

Of course, such a worldview is insufficient to uphold human civilization or even the most basic of human functions. To survive, much less flourish, we must live off the moral and intellectual capital of philosophical realism. It will be instructive to see this process at work.

In talking about the Beltsville pig, Professor Lee says that it was “radically abnormal in an ontological sense.” But that is the very point. In a worldview that sees life as nothing but the chemical composition of the nucleic acid sequences that make up living beings there is no normality or essence. To suggest there is refers us back to a worldview that would have us question biotechnology on a much different level.

Later in discussing the depth of manipulation involved in biotechnology, the statement is made that “their very identity [transgenic organisms resulting from genetic material moved across species and kingdom barriers] is defined in terms of their being transgenic in character and essence. This deep ontological dimension is of fundamental significance.” I’m not sure this type of language makes much sense anymore. Deep ontological reflection would recognize that fish are not tomatoes.

The point can perhaps be made more clearly by looking at what happens when the question, ‘what is it?’ is asked in the paper [referring to a cow that produces human protein in her milk]. Two answers are given, a cow or a tg (transgenic) cow. Neither answer is honest to the reductionistic view that has given rise to the creature in the first place. Reductionism’s answer: “a collection of chemicals and genetic material”. Ultimate reality really is the chemicals and genes atomistically conceived.

What we seem unable to grasp is that when Cartesian analysis turns us into one-eyed monsters life *really* is a vast organic Lego kit. Animals no longer have a *telos* and neither do we. Normality vanishes because it assumes a pre-existing reality external to the human mind.

When our guiding mindset sees the world, living and non-living, plant and animal, human and non-human, as one vast Lego kit, anything can be built. The only limit is the imagination, which means there is no limit at all. All

encasements are temporary. That is what our cow really is, a temporary encasement of a genetic program. Just like we do when we play with Legos, structures are demolished to the level of basic building blocks so that new forms can be erected.

Finally, there is the question of what good can come of this full frontal bypassing of the processes of the natural world. Certainly the technology in question delivers unprecedented power and this power can be wielded for good, as some of the examples in the paper illustrate. But what is disturbing is that all constraints have now been bypassed – not just those imposed by species and kingdom boundaries but also those imposed by morality. What respect is owed strands of genetic material? How will human beings be treated when they are viewed in this way? When no principled limits are left, nothing remains to prevent the extension of these methods to human beings themselves.

David Schindler, the great biologist from the University of Alberta, once said in a speech that human beings are rhesus monkeys with trousers on. The meaning of his remark is that what befalls the earth befalls us since we are living beings as well. [As the full mapping of the human genome has revealed our genetic make-up is very similar to that of even much simpler organisms, e.g. fruit fly]. A worldview that does not see the significance of our being a trousered ape won't observe the boundaries it implies. Modesty in dress and comportment is a virtue by virtue of what we are as human beings. So too is humility, something we desperately need in the practical arts.

#### End Notes

<sup>1</sup>This is something made apparent by Lee at the outset of her paper. "A new way of seeing" [or worldview] allows the "splicing [of] organisms" (quoting Edward Yoxen). The quote continues: "The living world can now be viewed as a vast organic Lego kit inviting combination, hybridization, and continual rebuilding. Life is manipulability."

<sup>2</sup>See Rudolph, J. R. Patentable Invention in Biotechnology, *Biotechnology Advances*, Vol. 14, No. 1, pp. 17-34, 1996. At the time of this writing the case of the Oncomouse is before the Canadian courts.

<sup>3</sup>The first known patent statute was a 1474 Act of the Venetian Senate. See Sterckx, Sigrid (editor). *Biotechnology, Patents and Morality* 2<sup>nd</sup> Edition, Aldershot, England/Ashgate Publishing, 2000, p. 10.

<sup>4</sup>We do, of course, treat living beings as commodities to some extent when we own, trade, and consume them. What patenting of transgenic organisms adds is the intellectual property claim to the creation of an entire and uniquely created species. As Leon Kass summarized the argument, "it is one thing to own a mule; it is another to own mule" (as quoted in, Hanson, Mark J. Religious

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V27, n6, pS1(20).