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Arthur L. Caplan
University of Pennsylvania, caplan@mail.med.upenn.edu

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Breaking Bioethics

What's So Special about the Human Genome?

ARTHUR L. CAPLAN

Glenn McGee argues[1] that the time is now for debating the morality of patenting human genes. In one sense he is surely right. While thousands of patents have been issued or are pending on many gene sequences, public policy with respect to ownership of the human genome is still far from settled.[2] So a debate about the ethics of patenting genes is, if nothing else, timely. In another sense however, Professor McGee is wrong.

While there is plenty of interest, as reflected in the growing literature on the subject,[3,4] in debating the moral acceptability of patents being issued on bits and pieces of human DNA, invocations of ethics are often nothing more than weapons in the battle to control ownership of what many believe will be the most lucrative patents in all of science for decades to come. When looked at closely, talk of ethics is more often than not a cover for self- or corporate interest. Those who are trailing in the race for control of a particular sequence or set of sequences are a bit quicker to agonize over the morality of patenting than are those preparing an application to the U.S. Patent and Trademark Office.

Discussions of the ethics of patenting are not always rhetorical. There are honest differences of opinion about which policies of ownership and control best serve the public interest. There are those who think that issuing patents will provide the necessary incentive to transfer knowledge from the lab bench to the clinic or the pharmacy shelf.[5] Others are not persuaded that allowing the patenting of human DNA sequences is the way to get the greatest practical return on the public's investment in the genome project.[6]

The question of the benefits associated with patenting is a crucial one for American public policy.[7] It is also an ethical argument in that the consequences of an act or policy certainly must be weighed in any assessment of the ethics of allowing patents. But, when the fight is over the desirability of patents for enhancing technology transfer then the debate is as much a matter of economics as it is of ethics.

There are what amount to essentially ethical objections to the patenting of human genes. But, those who have fundamental ethical objections to the patenting of human genes have not always been clear about precisely what their moral objections are.[8] To many, efforts to block the patenting of the human genome simply boil down to objections to the scientific study and manipulation of that genome. When patenting is made the target of purely moral objections, those making the objections often seem less comfortable with the push to map, sequence, and engineer the human genome than they are with the morality of patents themselves.[9] Nevertheless, there are purely ethical reasons to oppose patenting and they must be addressed by the biomedical, legal, and policy communities.

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Moral objections to the patenting of human DNA fall into three areas. It is wrong to patent because to do so is an act of arrogance or hubris. It is wrong to patent because patenting confers ownership over that which ought not to be commodified or turned into the object of commerce. And patenting is morally wrong because it allows individual ownership over something that is community property or a public good.

To some it is simply inconceivable that anyone could lay claim to the ownership of the blueprint for humanity.[10] No human being, no matter how clever or how innovative, should be allowed to lay claim to the fundamental knowledge that defines our species. Even if, as McGee suggests,[11] genes are the creations of our scientific theories in as much as we organize the world according to our needs and interests, it is still the case that laying claim to own what it is we find in the biological world cannot be done without an arrogance or hubris about our creativity and its role in revealing genomes. The fact that humans are bright enough as a species to decipher some of our essential biological instructions does not put us in a position to say that we own this information any more than discovering Newton's laws or the principles of thermodynamics or fluid mechanics allows anyone to say that they own this information. Those who do taxonomy and systematics know that Professor McGee is right—they are imposing an idiosyncratic and peculiarly human set of organizational principles upon the natural world. But in doing so they do not thereby derive a claim to own the species, genera, or phyla that they baptize. Similarly, although the cleverness and skill of genomic scientists ought to be admired and even to be used as the basis of tenure and salary promotion, it does not constitute a valid basis for ownership claims over the content of the information genomics produces.

Related to this ethical objection is the worry that patenting human genes is profane.[12] The notion behind this objection is that patenting is wrong because it is commercializing what ought to remain outside the realm of commerce. There is no way to treat our genes as our property without thereby cheapening and degrading the molecules that play an essential role in making us human. Patenting our genes is the moral equivalent of slavery—granting legal ownership over something that ought to be beyond commercial possession by any person, government, or corporation. The resistance to patenting that is prominent in many cultures and religious outlooks is based on the idea that the only way to confer a respect for human life and humanity is to place some aspects of ourselves outside the world of business and markets. This is one reason that slavery and prostitution are seen as morally wrong. It is why western societies will not permit a market in human body parts or tissues. Prohibitions on the sale of babies reflect the idea that although there might well be a market that would emerge for the transfer of new human lives it would be repugnant to permit it to exist. And it is why it is not legally acceptable to offer human cadavers for sale on the open market. To cement respect for human life, the body and its parts must not be made the object of commerce.[13]

The final in principle moral reason advanced against the moral permissibility of patents is that patents cannot be issued because the ownership of the human genome is already settled. Allowing individual or corporate patents ignores the fact that it is our common genetic glue that holds us together as a species, and that is something all of humanity has as its common legacy. If the human genome is viewed as a

family heirloom or picture book, then although it could be bought or sold, putting it on the market not only threatens its symbolic and cultural significance, but transforms what ought to be a family treasure into just another bit of private property.

Few scientists view genes, even human genes, in this way. It may seem simply silly to work oneself into an emotional frenzy over strands of nucleic acid. But, even if they are not always well articulated, it is precisely these metaphysical moral concerns that are at the heart of the objections, especially religiously based objections, to patents. And, contrary to the views of McGee and others who favor allowing patents to go forward,[14] these concerns will not be addressed by talk of optimizing technology transfer or providing appropriate fiscal reward for those who have labored long and hard at the lab bench and computer to crack our genetic code. Those who believe there is an essence to humankind and a specialness to human beings ground their belief in heredity, blood, ancestry, and roots. These are concepts that lead directly to genes. It takes a lot of capital investment, training, and hard work to find and identify genes. But these facts will not persuade those who see our genetic inheritance as definitive of who we are to reward those who map and sequence our code with ownership rights.

For there to be a sense of the sacred, there must be a sphere that is profane. To have a sense of the dignity of human life there must be an acknowledgment that there are some parts of our biology that we hold in common and keep outside the marketplace. What we all have in common is our genome, and as such it cannot belong to any one of us. These are the core arguments against genetic patents. Those who favor allowing patenting to continue in this area will have to meet the claim that keeping the human body and its parts off limits to the forces of the market is an important way to make a moral statement about who we are.

Notes

1. McGee G. Gene patents can be ethical. *Cambridge Quarterly of Healthcare Ethics,* this issue, 417–21.
2. Marshall E. Companies rush to patent DNA. *Science* 1997;275:780-1.
3. Caplan AL, Merz J. Patenting gene sequences. *British Medical Journal* 1996;312:926; Poste G. The case for genomic patenting. *Nature* 1995; 378:534-6.
4. See note 3, Caplan, Merz 1996.
5. See note 3, Poste 1995.
6. Thackray A, ed. *Biotechnology and the Rise of the Molecular Sciences.* Philadelphia: University of Pennsylvania Press, 1997. Heller MA, Eisenberg RS. Can patents deter innovation? The anticommons in biomedical research. *Science* 1998;280:698–99.
7. Joint appeal against human and animal patenting. National Press Club. Washington, D.C., 18 May 1995.
8. See note 7, Joint appeal 1995.
9. See note 7, Joint appeal 1995.
10. See note 1, McGee 1998.
11. Pope John Paul II, Address to Pontifical Academy of Sciences, 28 October 1994. *Vatican L'Osservatore Romano* [weekly edition] 1994; Nov. 9:3.
12. de Wachter MAM. The European Convention on Bioethics. *Hastings Center Report* 1997;27(1):13-23. See also note 7, Joint appeal 1995; note 11, John Paul II, 1994.
13. See note 1, McGee 1998; see also note 2, Marshall 1997; note 3, Poste 1995.
14. Sung LM, Pelto DJ. Greater predictability may result in patent pools. *National Law Journal* 1998;6:2–10.