

## Chapter 11

## Patenting Human DNA

Andy Miah

The scientific advances described in earlier chapters have inevitably triggered a response in the world of business and economics, and in this chapter I consider the recent activities of the American company, Celera Genomics, which aims to obtain patent rights for aspects of the human genome. This brings into question whether life, indeed human life, should belong to anyone or anybody. It raises, too, the further question as to how this new information will be used.

The issue of DNA ownership has not been neglected within bioethics and biolegal studies. Articles and books in these areas invoke concepts of human dignity, objectifying life, and life as a consumer product in the context of patenting DNA. The main part of such ethical investigations has been related to agriculture or non-human organisms. This is not surprising given the immediacy of technologies such as the patenting of the cloning procedure that was used to create Dolly the sheep. Central to these concerns are the implications such patenting has for the development of scientific research and the, supposedly, vulgar franchising (and likely exploitation) of human body parts. However, it remains unclear whether the patenting of DNA does actually count as owning life and whether this somewhat emotive response to patenting is justified. Thus, it is important to clarify the significance of patenting DNA and to outline what it would actually involve.

Numerous forms of patenting biological processes can be considered as morally problematic. The development of new drugs or therapeutic medical techniques, which might be dependent on the sequencing of a DNA strand, might also be of interest to scientists wishing to obtain patents. However, of particular interest in this chapter is the patenting of human DNA that might, some day, be used to (pro)create new human life or contribute to the sustainability of any human life. What, in particular, might be the implications for an individual if his or her genetic heritage is owned by an organisation, rather than having been passed down by biological parents? Such circumstances appear unsettling since it seems to amount to manufacturing a life that a business company might have created. I would argue, however, that such reductionism is not sufficient to discard the moral acceptability of patenting human DNA. Rather, it distracts us from the more significant social implications of this prospect. This is not to dismiss the philosophical implications as unimportant. Rather, it is to acknowledge the proper content of philosophical implications about patenting human DNA.

This lack of clarity begs the question of what is the moral significance of owning such material and to what degree one's identity is comprised by one's

genetic heritage – if, indeed, it is. For, it is not immediately clear how the patenting of human DNA could pose any threat at all to any individual. Undoubtedly, there is much controversy about this matter and intuitive appeals to human dignity, identity, and the sanctity of human life are often given as reasons for not patenting human DNA. Yet, much of this dialogue seems rather a sentimental appeal to claims about our humanness, as if this is some fixed concept that humans must possess. Thus, it is vital to clarify the credibility of such arguments and to comprehend the actual threat that patenting raises. The mere fact that a blueprint of the human genome could reveal something about a particular individual does not seem, necessarily, problematic. Yet, the way such information is used and made available to interested parties does have implications that are morally questionable. Should, for example, the owners of particular aspects of the human genome be entitled to sell this information to research companies seeking such morally worthy objectives as vaccines for diseases? Equally, should such patenting be made available to companies who seek to commercialise life, privatise organ donorship, and treat medical care as an industry to be exploited wherever possible? If not, then what claim does the former have above the latter that makes its moral evaluation acceptable?

Integral to the distaste about patenting life is the prospect of trading human life – the combining of money with human dignity. Indeed, if one is forced to state the strongest, most intuitive argument against such technology, it would be this. Arguably, where the concept of owning biological life, particularly human life, is invoked, one is immediately drawn to Huxleyan images of a very inhuman, unpleasant society where lives are automated, uncreative, and disturbingly lacking in this elusive quality of humanness. In his *Brave New World*, Huxley's descriptions are unequivocal, and the human individuals are savage and ungainly. In contrast is a perception of life that is creative, emotional, passionate, and spiritual and it remains the reaction of many people to genetic technologies.

Evidence of such disaffection has appeared most recently from the emergence of *Ron's Angels*, a company set up for the auctioning of female eggs and male sperm to infertile couples seeking 'exceptional' children. Whilst numerous companies of this kind now exist, *Ron's Angels* is interesting not simply for having arranged a standard and reasonable price for such genes; far from it. Rather, as indicated above, eggs and sperm are awarded to the highest bidder. One might argue that the method of auctioning is the most exploitative of methods of purchase. This might be contested by saying that, with auctioning, nobody pays more than that which they believe to be a fair price. However, such a claim fails to recognise the circumstances of the bidding parties, who, in this case, are likely to be particularly vulnerable, since it would seem that such donations would be necessary only where individuals or couples could not have children of their own for whatever reasons. Thus, such persons are in a situation of dependency upon the new reproductive technologies and products. One might respond to and legitimate these circumstances by arguing that such people need not use such a company, since they could seek these donations through more conventional medical services. However, it is my contention that the appeal of superficially super-human or 'perfect' genes is particularly attractive where the ease of receiving them is very

straightforward. It is this reality that lends strength to concluding that the practice is morally problematic.

Though limited in choice of stock (there are really very few donors), this pioneering genetic supermarket offers a very simply rationale for utilising its services. It claims that it is simply seeking to promote choice, providing prospective parents the opportunity to purchase the contemporary social assets of intelligence and beauty (and, to appear more legitimate, health). The introduction to the company states that,

Beauty is its own reward. This is the first society to truly comprehend how important beautiful genes are to our evolution. Just watch television and you will see that we are only interested in looking at beautiful people ... our society is obsessed with youth and beauty. As our society grows older, we inevitably look to youth and beauty. The billion dollar cosmetic industry, including cosmetic surgery is proof of our obsession with beauty.

What is the significance of beauty? It has been reported that young babies prefer to look at a symmetrical face, rather than an asymmetrical one. Beautiful people are usually given the job of selling to, and interacting with society. This continues throughout our adulthood. The act of creating better looking, or in some organisms, more disease resistant offspring (known as Genetic Modifications), has been taking place for hundreds of years. All genetic modifications serve to improve the shape, color and traits of the organism. 'Aroma and attractiveness is nature's shorthand for health and hardiness'. If you could increase the chance of reproducing beautiful children, and thus giving them an advantage in society, would you?

Any gift such as beauty, intelligence, or social skills, will help your children in their quest for happiness and success (Harris, R., 1999).

From here, one begins to recognise the potential realisation of a manufactured future for the human species, with the next line of products being the genes (sperm or eggs) of athletes or professors. Indeed, recent news headlines reveal infertility couples seeking the eggs of Oxbridge students (Harlow and Gould, 1999). One can quite easily imagine how this can generate an immediate response of revulsion at the concept of owning life, given these practices.

Condemned by many infertility groups world wide, of all the applications of genetic technologies, this practice seems unequivocally repulsive for the simple reason that it has the effect of forcing the values of one generation upon another, thus stalling social change and the possibility of reflecting upon values. The prioritising of beauty or a particular version of intelligence in some of these enterprises and the inevitable projection of this value onto future generations, implicitly coerces the user into sharing these values. It forces one to consider that if, as a prospective parent, you do not recognise these assets and provide them for your children, then you will disadvantage your child. Thus, the message appeals to an enduring notion of wanting to provide the best future for one's child. Such inferences are alarming for, as in the case of the infertile couple, it seeks to manipulate the vulnerable. It also means, of course, that the procedures are

available to others who are *not* infertile, but will use the available technology for eugenic goals.

Returning again to the patenting of human DNA, it is important to note, too, the legal implications of this process. From a legal position, whether the human genome should belong to anyone requires one to take a position on whether new life is seen as invention or discovery. It is necessary to establish whether the sequencing of DNA is, indeed, something that warrants a patent. The Patent Trading Office (PTO) deems that 'all genetically engineered multicellular living organisms, including animals, are potentially patentable' (cited in Rifken, 1998, p.44). Moreover, Donald J. Quigg, Commissioner of Patents and Trademarks in the USA, said that, 'patenting covered all but human beings as this would be against the Thirteenth Amendment to the Constitution, which forbids human slavery. This seems to entail, though, that genetically altered human embryos and fetuses as well as human genes, cell lines, tissues and organs are potentially patentable, and to leave open the possibility of patenting all of the separate parts, if not the whole, of a human being' (p.45). The requirements of being granted a patent on something are disturbingly straightforward and are as follows:

1. It must be novel (new).
2. It must not be obvious. Nothing can be patented in its natural state, including native varieties of plants or animals, or anything within the human body that has not been genetically modified. A customary use of a natural object cannot be patented either. A new or non-obvious 'use' of something occurring in nature is patentable, however.
3. It must have utility. 'Rube Goldberg' nonsense machines are not patentable. (British law, unlike U.S. law, does not require utility.) (Cited in Wertz, 1999.)

These details, it would seem then, do not preclude the patenting of human genetic material, despite the reluctance of patenting authorities to grant such rights in this age of uncertainty. So, let us now turn to some objections to the patenting of human DNA, drawing first from more general concerns about patenting biological material.

The issue of patenting raises numerous socio-economic concerns. These concerns in the case of plants and animals are discussed in detail in Part 3, but some preliminary remarks are relevant here. In the context of agriculture, for example, the fear that ownership will have a negative impact upon the sustainability of the third-world suggests a need for precaution in granting such patents (Reiss and Straughan, 1996). Nevertheless, there is an argument that genetic engineering and the patenting of modified strands of agricultural DNA, can allow a *greater* provision for third-world countries, where harsh climates and scarce resources limit people's survivability. Where new technology could be patented to enable the development of foods that could flourish in such environments, it seems desirable to promote this.

Nevertheless, the genetic engineering of foodstuffs does provoke concerns about the safety of the technology and the unknown long-term effects of human beings consuming these foods. Despite reassurance from scientists about the safety

of these foods or, at least, the proximity of levels of safety to non-GM foods, many people continue to feel distrustful about science and medicine in this respect. In the case of biological organisms, the subject of patenting raises concerns over their treatment and some commentators argue that the patenting of animals and the creation of new life forms will generate a lack of respect for animals as sentient beings, of value in themselves (Holtug, 1998; Terragni, 1993). These critics fear that animals will be seen as products, owned and to be exploited. Here, however, I am concerned with the patenting of *human* DNA, though I believe we should take note of the application of patenting to other animal species when considering the ownership of aspects of the human genome and more generally, ownership of life and the autonomy of individuals.

Concerns about the patenting of human DNA are quite distinct, though there are some parallel issues that seem exaggerated due to aspects of the technology. Firstly, whilst the patenting system might be a necessary procedure to promote research in science and medicine, if such findings are patented, then such information – such discoveries or inventions – might not be used for the greatest good. This utilitarian perspective might not be justified, though it is undoubtedly of critical interest for the patenting system (Owen, 1995). Thus, for example, if a gene sequence was developed that could contribute to the prevention of various diseases, then, ideally, one would hope that this information would be made available to all those who might be able to develop it further. However, the patenting of such findings might limit their use only to those companies who are able to pay for the licensing rights. Consequently, it is reasonable to fear that patenting might have the negative effect of stifling research that would be for the greater good of human well-being.

While not denying the need to keep in mind practical objectives like this, I want here to contest the more general objection to patenting human DNA: that it will have the effect of devaluing human life and be an affront to human dignity. Such concerns have been discussed by a number of writers in relation to the Kantian principle of treating persons as ends in themselves rather than as means to the ends of other people.<sup>1</sup> However, in the context of patenting, I would suggest that these concerns are not warranted and that patenting human DNA does not present any such difficulties, since they are premised upon a misunderstanding of the patenting process and aspire to genocentric ideals that are not justified.

The claim about human dignity as threatened by patenting is based on a misunderstanding about types and levels, since the technology under question does not belong to a specific individual. Rather, the patenting of human DNA belongs to the human species and not to any individual member of that species. Thus, any claim about dignity premised upon the Kantian notion must be extended to encompass the dignity of a species rather than any member of it. Such a concept is problematic, since to conceive of a species as having dignity is a rather abstract idea. An alternative position might be to address the concerns about patenting human DNA in the context of a claim that the human species is sacred and that such sanctity should not be compromised. It might be added that the species as it currently exists is unreservedly valuable, perhaps even perfect. Scientifically, of course, this makes little sense. To conceive of the human species as sacred, not

needing improvement, and something that ought never be altered does *not* fit with medical research nor with a realistic interpretation of the body and human identity. The claim that the human species can be improved implies that it is in fact flawed. Striving for perfection, then, by patenting and engineering 'better' humans would seem quite desirable.

Of course, there can be no denying that genes, together with the understanding of one's genetic heritage are important. The possibility that individuals might be comprised – at least genetically – in part by a manufacturing company would seem bizarre, and one could imagine the psychological difficulties that could arise for such an individual to have an intimate knowledge of their genotype (Häyry and Lehto, 1998). However, where the technology is employed to improve the standard of living, I would suggest that these psychological concerns are negligible. If the choice is between a life in suffering (or no life at all for that matter) or a life where one's genetic heritage is the product of mother, father, and science, then the latter seems more desirable. Nevertheless, whether patenting simply for enhancement purposes would be desirable is another question, which cannot be pursued further in this chapter.

My conclusion here, then, is that if any claim is to be made about human dignity, then a much richer understanding of this concept is required than Kantian principles can supply. It is necessary to consider a definition that is sympathetic to technologies that might stand to affect the species rather than any single individual. However, whether the patenting of life is actually perceived as compromising one's personal identity is a very different question requiring a quite different perspective. It is my suggestion that such ownership need not pose any serious threat to human identity and individual autonomy. The basis of my argument involves appealing to what precisely is owned where DNA might be patented. I argue that the rejection of patenting human DNA as a challenge to the sanctity of the human species is a product of genetic essentialism. That human DNA might belong to a company within the United States, or to anyone for that matter does not seem, to me, unacceptable in principle. Yet, this does not mean allowing organisations to propagate this ownership to do with it as they wish, nor to monopolise this knowledge and its findings. Neither does owning the patent to human DNA mean that any individual is owned by another. Indeed, the limitation on what is owned remains simply with the matter of genes and this alone, I believe, does not jeopardise any sense of autonomy or identity for an individual.

#### Notes

- 1 See, for example, Harris, J. (1997, June 19), 'Is Cloning an Attack on Human Dignity?', *Nature*, 387, p.754, Harris, J. (1998a). 'Cloning and Human Dignity', *Cambridge Quarterly of Healthcare Ethics*, 7, pp.163-67, Harris, J. (1998b), *Clones, Genes, and Immortality*, Oxford, Oxford University Press, Harris, J. (1999), 'Clones, Genes, and Human Rights', in J. Burley (ed.), *The Genetic Revolution & Human Rights: The Oxford Amnesty Lectures 1998*, Oxford, Oxford University Press, pp.61-94.

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