

PERSPECTIVE ON THE HUMAN GENOME

Gene Pools Shouldn't Be Panned for Gold



Let's craft a treaty making this latest scientific advance a commonly held trust belonging to all.

By JEREMY RIFKIN

While there will be much celebration and self-congratulations in the wake of the announcement of the human genome, and extended discussion about curing diseases and advancing human progress, we should not kid ourselves about some of the more self-serving interests at work behind the scenes.

This great scientific advance, which deservedly will be compared with the splitting of the atom and the race to the moon, has a Janus side—one not likely to receive much attention amid all of the hype about the potential medical benefits in store for future generations.

The fact is that, with the map in hand, we are about to witness a rush to locate a treasure worth far more than any other commercial expedition in all of history. Using the map as a guide, life-science companies and genome companies hope to locate all of the 30,000 to 140,000 genes that make up the genetic blueprint of the human species. Once located, each gene is being claimed as a patented invention. Already, hundreds of genes have received patents, and there are tens of thousands left to discover. Within less than a decade, the human genome will likely be the intellectual property of a handful of life-science companies and research institutions, giving them unprecedented power to dictate the terms upon which the rest of us use this new knowledge in the marketplace and society.

To understand exactly how much potential wealth is buried inside the genome map, consider the fact that the average price of being screened for a genetic disease using one of the hundreds of non-patented genes discovered before the gene rush got underway was about \$50.

Today, if a patient wants to be screened to see if he or she has inherited a gene and that gene has been patented, the test can cost as much as \$2,500. Imagine the situation in 10 to 15 years when people will want to be screened for hundreds or even thousands of genes as part of their standard medical care.

HMOs are likely to balk, largely because the costs of screening are likely to be prohibitive. If health care providers refuse, however, and patients become ill as a result of having a genetic predisposition that could have been screened and treated, chances are likely that the mounting litigation will cost the health care system as much in losses as the patented gene screenings would have in the first place. In the final analysis, the only winners are likely to be the life-science companies because of their hold over the most valuable resource on Earth: the human genome.

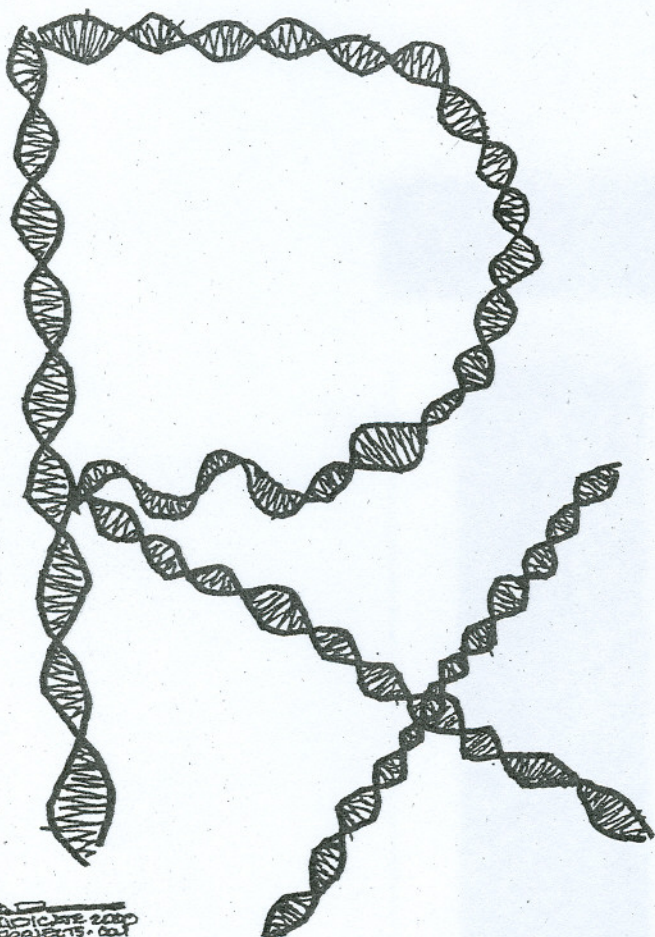
All of which begs the question, how can the genomic companies lay claim to the individual genes that make up our common evolutionary legacy? For example, when the chemists isolated, purified and synthesized the various chemical elements that make up the periodic table, they were allowed patents on the processes they used to isolate the elements, but were refused patents on the products themselves—the reason being that helium, oxygen, aluminum and other chemical elements are deemed products of nature and therefore unpatentable under patent statutes. Why should human genes be treated any differently?

It's a question the public should be pondering.

With very few exceptions, virtually all the scientists involved in this research are bio-prospectors with equity interests and financial dealings worth potential fortunes. I have yet to hear a single scientist say that if he or she discovers a particular gene it will be made publicly available to everyone, free of charge—even though much of this research is publicly

Commentary

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funded by the taxpayer and therefore subsidized from the outset.

And there is an even deeper issue to consider in this race to patent individual genes. Every parent ought to ask themselves whether their children and grandchildren will be well-served growing up in a world where they come to think of human life itself as just patented genetic data—chemical codes, owned in the form of intellectual property by global life-science companies.

We should consider crafting a great treaty to make the human gene pool—and the gene pool of our fellow creatures—a “commons,” held in trust and administered jointly by every nation on behalf of all future generations. The treaty could be similar to the one we established making Antarctica a commons.

As for the corporations’ very legitimate claim that they need to recoup their investments, let them pursue process patents for their work, but allow the prod-

ucts themselves—the genes—to be held in the public domain as we did with the chemical elements.

The announcement of the human genome map ought to be regarded as a triumph for the whole of the human race. Similarly, the knowledge that will come from locating all the genes that make up our common biological destiny should be shared as a collective responsibility.

No one doubts for a moment the great potential value in mapping the human genome. Yet if we are to use this knowledge wisely then we need to begin by ensuring that it be held in trust on behalf of our species as a whole and not made the private preserve of a handful of life-science companies.

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