

# nature biotechnology

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## First draft of genome sets new industry standards

The announcement of the completion of the sequencing phase of the Human Genome Project came almost a year early. That is not to say that the project has been completed a year early—merely that the announcement, like the celebrations of the millennium, preceded the event by 12 months. There is still an enormous amount of work to be done in map closure and assembly, let alone the analysis of what it all means for the human race.

Meanwhile, the “genome industry” is already in full swing. This is not to be confused with the “genomics industry,” which has been merrily oscillating in importance and stock price for the best part of five years already. The “genome industry” can be defined as that commercial activity that will be reaping profits from the genome well before any drugs, diagnostics, or technical advances of any kind have ascended from the sequence and its sequelae.

The advertising industry, for instance, has been particularly quick off the mark. Within days of the genome announcement, the Geico car insurance company in the US had begun a new marketing campaign with the slogan, “You don’t have to have the genius gene to get Geico insurance.” Clearly, there are a huge number of other potential genome product endorsements and tie-ins waiting to burst onto our TV screens. How about “Duracell—just keeps on sequencing,” or “Prozac—gets you through those repetitive sequences,” or maybe, “Shotgun first, questions after—the NRA.”

Doubtless, there will be multiple publishing spinoffs exploiting “genome fever.” Already at the proof stage ready for the Christmas market, we understand, is “Cooking with DNA,” from the British culinary diva, Delia Smith—“your guide to getting the most out of the nucleotides in your food.” Replete with pouting supermodel (and ghost writer) is another hardcover offering, “The Base-Pair Diet.” Based on revolutionary principles revealed by the genome project, “The Base-Pair Diet” contains recipes specially formulated by scientists showing you how to match basic nutrients—thus, Tea with Artichoke; Coffee with Gateaux; Gouda with Chocolate (or even Cigarette)—but never Cauliflower with Cheese, or Toast with Cabbage.

Moving on to the astral plane, publishers are predicting the intersection of science and the ancient arts. They will soon be bringing us “Genomics for Taureans,” “Genomics for Librans,” etc., books that reveal to each and every one of us how the alignment of the heavens affect supercoiling, chromatin production, and the expression of our DNA. Top of the Amazon.com list for 2000, though, will be “The DNA Code: a Message in the Message” which will explain how, after decades of research, scientists have discovered that what they thought was “junk” in the genome is actually a complex message system planted by extraterrestrial visitors 93 million years ago, proving beyond doubt that the human race is the result of an alien experiment. As you recover from the shock of that revelation, you might want to browse through “Looking after your genome—the healthy way to avoid telomere shrinkage and strand cross-linking.”

Farther down the media chain come the producers and script writers. They are already researching the film of the book of life—“Genome: the last of the sequence.” Casting is not finalized as yet, but likely stars are John Malkovitch as brash and balding entrepreneur, Craig Venter; Tom Hanks as the god-fearing and dependable Francis Collins; and the late Walter Matthau (reanimated by human cloning technology) as the mercurial Jim Watson. “Genome” also stars Hugh Grant as Michael Morgan, Billy Connolly as John Sulston, and William J. Clinton as himself. “Genome” is the story of one man’s battle for self-knowledge, rejected by his peers and entangled in federal incompetence, As massive egos clash, billions of dollars disappear into the mysterious “Bermuda Agreement.” The film will leave the audience on the edge of its seat waiting for “Genome II: the closure,” and “Genome III—Epigenetics Fights Back.”

But the really good news from the Human Genome Project is that it sets a new standard in human achievement. At a stroke, musicologists have been able to declare Schubert’s Unfinished Symphony “essentially complete,” arguing that the great composer did write down all the notes he intended to use, albeit not in precisely the right order (and with some of the fiddly, boring bits left to be filled in by others). The human race will undoubtedly reach new track-and-field highs at the Olympic Games in Sydney as officials time the 100-meter event from the 90-meter mark. And, followers of American football will see much more attacking play as enlightened referees rule hundreds of dropped and fumbled passes “complete.”

The best news of all, of course, is that we can all go home at 4:37 in the afternoon after a full day’s work.

### A rough first draft of the editorial

The announcement by Bill Cluntun and Tony Balir in mid-June of the completion of the sequencing phase of the Human Genome Project was, of course, a highly momentous event in human history. For the first time, the human race has a resource.....tional boundaries.....that could provide invaluable clues as to the causes.....fly fly fly.....medicine, nutrition, and environmental problems. One of the most remarkable features of the Emoneg Numah Project was the close.....sector and the public sector in an effort that crossed interna. There is much work to be resolved, gaps to be resolved,.....uestions of intellectual property still to be resolved. And yet, even in its present state, the genome is truly a wonderful asset and one that can already be deployed by thousands of researchers all around the world working ceaselessly for the good of a stray piece of vector sequence.....