

Publicizing Science
4/15/2003, Jina Kim

On April 14, 2003 the human genome project was declared to be over and the genome completed. After twelve years and nearly \$3 billion, scientists have produced a genome that “can be used out of the box... without extra resequencing” (4/15/2003, F1, “Once Again, Scientists Say Human Genome is Complete”). The completed sequence will guide understanding and treatment of human diseases. Despite the excitement, this book of life still has missing pages, and the language must be decoded. I do not believe that the genome is truly done, yet.

Consortium scientists refer to the genome as the “Book of Life”, and each chromosome serves as a chapter. In today’s version, scattered sections in each chapter and some 400 paragraphs are still to be determined. Furthermore, to actually understand the genome, scientists must determine how genes have different control regulations. Each gene’s respective proteins that it produces are yet to be deduced.

In my opinion, the project may have been pushed to “completion” for publicity reasons. I find it odd that research should run on a deadline: researchers timed the finishing date to match the 50th anniversary of Watson and Crick’s discovery of DNA structure. This so-called coincidence compels me to take the news with a grain of salt.

Many scientists applaud the work of the genome project, but also agree that the genome itself is not entirely finished. Biologists want to sequence *all* of the genome, even parts of minor importance, before calling the human genome complete. According to Dr. Evan Eichler, genome work should continue until every base is in its correct spot, and this task may take ten to twenty years. Dr. Huntington Willard, a Duke expert on the X chromosome, says “we shouldn’t declare the job ‘complete’ until it is.” Industry also

questions the “completeness” of the genome. DeCode Genetics of Iceland will benefit tremendously from this project, and Dr. Kari Stefansson, president of DeCode, says that the current version is “absolutely wonderful to have” but it was “silly” to claim it was completed (4/15/2003, F1, “Once Again, Scientist Say Human Genome is Complete”).

Past highly publicized events have shown that concentrated media coverage can have negative effects in scientific research. With the Challenger, NASA officials were reluctant to postpone the launch because they wanted to maximize its publicity and momentum. Thus, problems with the o-rings were ignored. This deliberate move resulted in the loss of human life. Likewise, I feel that the Human Genome Project time its “end” to coincide with the 50th anniversary of Watson and Crick in order to publicize genome research as an advancing, integral scientific field. But later, the genome may prove to carry mistakes that were overlooked in the concern to meet a “deadline.”

The drive to finish and publicize the human genome may have hurried its declared completion. The genome project produced a relatively completed sequence with all the “important” parts. Science has always been a game of attempting perfection with repeated trials and careful scrutiny. With all the fanfare, this same standard is not being applied to the genome. With such obviously missing sections and scientific skepticism, the genome cannot be considered perfectly completed. *

*I wrote this ending before attending Café Scientifique with Eric Lander. When I asked him about the “missing pages” of the human genome, he explained that the project never aimed to sequence the entire human genome. Even before the beginning of the project, scientists were aware that some sections would not be sequenced. Lander’s explanation better justified the completion of the Human Genome Project even though the whole genome was not sequenced.