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constantly changing in ways that are neither good nor bad for the individual. This means that, on the whole, many genetic changes simply don't affect overall biology.

This has major consequences for understanding the relationship between genetics and biology, Birney says. "It means, for example, that if you look at some conserved piece of biology — say, how the kidneys work in mice and humans — not all of those bits of biology will be conserved or constrained at the level of the DNA bases, and that's quite a strong shift."

But not everyone agrees with that take. For example, John Mattick at the University of Queensland in Brisbane, Australia, argues that the widely accepted calculation of the baseline, or neutral, rate of mammalian evolution is flawed. Because measurements of constraint rely on a comparison with the neutral rate, it is possible that many of ENCODE's so-called unconstrained regions really aren't unconstrained, Mattick argues.

"I would have said that this finding suggests that many regions of our genome are evolving under weak selection pressure, or that our measurements of the neutral rate of evolution

**The ENCODE project aims to catalogue all the 'functional elements' in the human genome.**

are incorrect," says Mattick, who is an author on the ENCODE paper.

In fact, Mattick thinks scientists are vastly underestimating how much of the genome is functional. He and Birney have placed a bet on the question. Mattick thinks at least 20% of possible functional elements in our genome will eventually be proven useful. Birney thinks fewer are functional. The loser will buy the winner a case of the beverage of his choice.

Meanwhile, other scientists are gathering data to answer new questions raised by ENCODE. Many hope that other ongoing studies, such as comparable genome sequences from additional primate species, will help decide which parts of the ENCODE data to study first. ■

#### Erika Check

1. The ENCODE Project Consortium *Nature* **447**, 799–816 (2007).
2. Greally, J. M. *Nature* **447**, 782–783 (2007).
3. *Genome Res.* **17**, Issue 6 (2007).
4. *Nature* **447**, 361 (2007).

## WORDWATCH

**Cyber warming:** The greenhouse effect caused by carbon dioxide emitted specifically by the manufacture, operation and disposal of computers. A UK government task force has been set up to tackle the issue.



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## ON THE RECORD

**"We could not talk about a football World Cup, but about a World Cup at limited altitude."**

Bolivian President Evo Morales slams a decision by FIFA, soccer's governing body, to ban international matches at elevations above 2,500 metres.

## SCORECARD

### Postage stamps

 Dutch mail company TNT Post has launched a range of seed-impregnated stamps that can be planted after use, and will sprout a range of flowers.

### US vacations

 A survey shows that 20% of US holidaymakers take their laptops so they can stay in touch with the office — and some 40% check their work e-mail while they're supposed to be relaxing.

## NUMBER CRUNCH

**7 minutes 54 seconds**

is the average duration of coitus, according to a US survey.

**14,191 kilometres**

is the distance travelled by Earth around the Sun during that time, British astronomers calculate.

**143 million kilometres**

is the total amount the Earth moves during sex if you factor in the expansion of the Universe. For a precise, personalized distance based on your specific latitude (and performance), visit [www.earthmove.info](http://www.earthmove.info).

Sources: BBC News, FourFourTwo, *inhabitat.com*, ABC News, Cheltenham Science Festival