

Book Review

Designer Genes: A New Era in the Evolution of Man

Steven Potter

Random House; 2010; 208 pp. Hardback;

ISBN 978-1-4000-6905-7

£15.46; US\$25.00

Steve Potter and I have been good friends for more than 20 years and, while I was aware of how bright and insightful he was, I was not appreciative of the fact that he could write such a lucid story on (as complicated a topic as) *Designer Genes*. If any of you scientists have a spouse who is not in science, or if you have children in high school taking biology–chemistry–physics, this is a book that you can recommend to them.

The sequence of Steve's early chapters provides a simplistic and non-intimidating introduction for the lay and semi-lay reader. In the early chapters, he gives sufficient background, so that everyone might easily understand and be comfortable with the important discoveries during the past five decades in molecular developmental biology and genetics — from DNA being transcribed to RNA, RNA spliced to messenger RNA to RNA translated to the protein (gene product).

In a 'user-friendly' manner, Steve also covers recently appreciated mechanisms in the genomics field by which

we now realise that such striking human diversity and variability are achieved — including DNA base-pair changes, insertions, deletions and even 'jumping genes'. Using a few clinical diseases, dog breeding and athletic abilities as examples, Steve provides some easy-to-understand concepts about human evolution. At the end of the book, he even goes into exciting futuristic concepts about robots and computers that might extend human knowledge.

To me, the most exciting thing about the book is the realisation that, because mouse and human embryos are extremely similar, everything we know about early mouse embryo development quite clearly applies to the human as well. Scientists today have the ability to make a 'transgenic human' — just as Steve's laboratory (and my laboratory) are currently doing with transgenic mouse lines.

Steve even ventures into morality and religious issues, and he does this with great capability and sensitivity. 'When does "the soul" most likely enter the developing fertilised egg?' 'How many souls are possible from one fertilised egg?' These and many other deep questions are approached with answers that can be easily comprehended and should be acceptable to the large majority of people, whether they are scientists or not, and whether they are theologians or not.

Since the book was published in September 2010, my understanding is that it has already sold more than 300,000 copies. Not bad for a developmental biologist who still works at the laboratory bench himself!

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