

Preface

The sight of a miniature ship perfectly assembled inside a glass bottle can impress even the deepest sceptic. But mystery always fades when we learn the simple tricks that underlie apparently remarkable feats. The creation of living things from inanimate matter is no different. The tricks in this case lie in the DNA sequences that program their construction. They teach us how a crocodile can be transformed into a kangaroo, and how the tiniest and most magnificent examples of life are constructed. Together, these tricks define the substance of genetics. Genetics does not disprove the existence of God, but it does teach us that every aspect of our appearance and behaviour can in some way be accounted for by the operations of our body. It also demonstrates that we could, if we wished, synthesize new forms of life from first principles, and change ourselves beyond all recognition. The twentieth century outlined the key principles of genetics; in the twenty-first, this knowledge will transform human existence in unimaginable ways.

In the eighteenth-century Enlightenment, European civilization was transformed from a consciousness dominated by religious doctrine into its modern secular

incarnation. We are at the cusp of a new Enlightenment, defined by the accumulated genetic knowledge that enables us to entertain the possibility of modifying our own nature and of creating artificial life. This tremendous power for change is unprecedented. This book is an attempt to account for that power by examining the inner workings of genetics. It should not be read as advocating a particular course of action. My view is slightly different: the creation of synthetic life is an inevitability.

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