

# Contents

<b>Preface</b> .....	v
<b>1 Human Genetic Engineering</b> .....	1
1.1 Genetics: A Primer .....	5
1.2 Selecting Traits .....	9
1.3 Genetically Engineered Humans Have Already Been Born .....	10
1.4 The Beginnings of Genetic Engineering .....	11
1.5 Types of Genetic Engineering .....	13
1.6 <i>Gattaca</i> .....	15
1.7 Designer Babies .....	16
1.8 Replicants .....	17
1.9 Replicant Future? .....	19
<b>2 Building Better Sportsmen: The Genetic Enhancement of Athletes</b> .....	21
2.1 Improving the Genetic Blueprint .....	26
2.2 Detecting Gene Doping .....	27
2.3 Tweaking Genes .....	29
2.4 Ethics .....	33
<b>3 Cloning</b> .....	37
3.1 Hollywood's Take on Cloning .....	37
3.2 Dolly .....	39
3.3 Cloning Technology .....	40
3.4 Human Cloning Step by Step .....	41
3.5 Cloning Hurdles .....	42
3.6 Human Cloning Today .....	43
3.7 Dark Endeavor: Ethics, Risks, and Consequences .....	45
3.8 Benefits .....	46

<b>4</b>	<b>The Human Clone Market</b>	51
4.1	Snapshot of the Future	51
4.2	Black Market Organs	52
4.3	Organ Cloning	55
4.4	Xenotransplantation	57
4.5	Resurrection	60
4.6	Ethics	63
<b>5</b>	<b>Bioprinting</b>	65
5.1	Bioprinting Step by Step	67
5.2	Bioprinting Techniques	68
5.3	Success to Date	71
5.4	Challenges	75
<b>6</b>	<b>Printing Humans</b>	77
6.1	The Fifth Element	78
6.2	Printing Body-Parts	82
6.3	Rejuvenation	83
6.4	The Route to Printing Humans	84
6.5	Human Replication Technology	87
<b>7</b>	<b>Designing Humans</b>	89
7.1	Customized Astronauts	91
7.2	Underwater Humans	99
7.3	Super-Soldiers	104
<b>8</b>	<b>Perils and Promises</b>	109
8.1	Genetic Identity	110
8.2	Genetic Right	113
8.3	Designer Babies	116
8.4	Gattaca: Fingerprint of the Future?	118
8.5	Genetic Tampering	119
<b>9</b>	<b>Evolutionary Engineering</b>	123
9.1	<i>Blade Runner</i> : Authentic Future?	124
9.2	More Human Than Human?	125
9.3	A Posthuman/Transhuman Era?	128
9.4	Directed Human Evolution	130

9.5	Pantropy .....	133
9.6	Animal Hibernation .....	135
9.7	Pantropy, Continued .....	137
<b>Appendix .....</b>		<b>141</b>

Beyond Human

Engineering Our Future Evolution

Seedhouse, E.

2014, XI, 153 p. 58 illus., 35 illus. in color., Softcover

ISBN: 978-3-662-43525-0