

## Contents (draft)

<b>List of Figures</b>		<b>v</b>
<b>List of Boxes</b>		<b>vi</b>
<b>List of Tables</b>		<b>vi</b>
<b>List of Abbreviations</b>		<b>vii</b>
<b>Acknowledgements</b>		<b>viii</b>
<b>Prologue</b>	<b>Why Yet Another Book About Evolution?</b>	<b>1</b>
<b>Chapter 1</b>	<b>Darwin, Dogs &amp; Dilemmas</b>	<b>13</b>
	Darwin: what you need to know	13
	Darwin and dogs	15
	Darwin's dilemma	18
	Resolving evolution's enigma	21
<b>Chapter 2</b>	<b>Rethinking Domestication Dogma</b>	<b>23</b>
	The traditional story of domestication	23
	How domestic animals differ from their ancestors	25
	Barking up the wrong tree?	26
	Rethinking the dogma	33
	Playing with nature	35
	The juvenilization of domestic animals	37
	Protodomestication: a speciation event	39
<b>Chapter 3</b>	<b>Thyroid Hormone: What It Is, What It Does</b>	<b>44</b>
	The power of thyroid hormone	44
	Thyroid hormone and iodine	47
	The grand hormonal cascade	53
	Thyroid hormone and brain function	56
	Thyroid hormone and coat colours	57
	Thyroid hormone and behaviour	64

	Thyroid hormone and fetal growth	65
	Thyroid hormone and nutrition	70
<b>Chapter 4</b>	<b>Orchestrating Life: Thyroid Rhythms</b>	<b>75</b>
	Rhythms of life—an overview	75
	What sets the rhythm?	81
	Thyroid rhythms as conductors—hormone pacemakers	84
	Thyroid rhythms and individual variation	86
	Genetic control of thyroid rhythms	92
	Thyroid rhythm theory	95
	Testing the hypothesis	97
<b>Chapter 5</b>	<b>Thyroid Rhythms in Protodomestication &amp; Breed Development</b>	<b>101</b>
	Wolf to woof	101
	Protodomestication of the dog	108
	Breed development in dogs	111
	The first sheep, goats and cattle	115
	Modern domesticates: farmed and hatchery salmonids	116
	Protodomestication vs. speciation	119
	The genetics of protodomestication	123
	Summary and discussion	127
<b>Chapter 6</b>	<b>How Speciation &amp; Adaptation Actually Work: Some Examples</b>	<b>131</b>
	Seasons, stress and food	131
	Origin of the polar bear from a brown bear ancestor	136
	Multiple speciation events	140
	Adaptation in birds and fish	143
	Speciation, adaptation—or something else?	146
	Ecotypes: neither species nor subspecies	151
	Summary and discussion	153
<b>Chapter 7</b>	<b>More Examples: Island Dwarfs &amp; Giants</b>	<b>155</b>
	The unique and the bizarre— <i>island species</i>	155
	Island syndrome	158
	Parallels with protodomestication	161
	Restricted fetal growth and island dwarfs	164
	Stegodons on Flores Island, Indonesia—an example	167
	Dwarf <i>Homo</i> on Flores Island?	173
	Gigantic rodents and flightless birds	175
	Gigantism in reptiles and birds	179
	Selection on islands	182
	Summary and discussion	183
<b>Chapter 8</b>	<b>A Final Example: Explaining Human Evolution</b>	<b>188</b>
	The conundrum of the first hominids	188
	Whence came the hunter?	189
	The first hominid to walk	190
	The first hominid tool user	199
	Big bodies & big brains on the move— <i>Homo erectus</i>	201
	Life on the cold front— <i>Homo neanderthalensis</i>	202
	Anatomically modern humans— <i>Homo sapiens</i>	207
	Recent dietary adaptations	211
	Summary and discussion	213

<b>Chapter 9</b>	<b>Health Implications of Thyroid Rhythms</b>	<b>219</b>
	An evolutionary context for thyroid dysfunction	219
	Thyroid hormone and depression	227
	Thyroid hormone and obesity	228
	Thyroid hormone and birth defects	231
	Diagnosis and treatment of hypothyroidism	232
	Disruptors of thyroid function	233
	The future—personalized medical treatment?	236
<b>Chapter 10</b>	<b>Evolution Made Personal</b>	<b>240</b>
	Summary	240
	Final thoughts and questions	247
<b>Appendix</b>	<b>Time-line for major events in human history</b>	<b>255</b>
<b>Glossary of terms</b>		<b>256</b>
<b>Bibliography</b>		<b>261</b>
<b>Index</b>		<b>319</b>