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Even as we witness the life today, despite millennia of profound evolutionary change, will continue to evolve tomorrow. Some of that evolution to species' features has nothing to do with humans. Some of it arises as an incidental byproduct of our existence. And some evolution results directly from intentional intervention by people. This book will recount how all of that evolutionary change can happen, how modern-day genetic engineering can influence it, and what consequences of these forces we can expect to see in the future of the Anthropocene era.

Part 1 of this book, *The laws of nature*, explores how living organisms change over time. Over some first 10 chapters, we'll unearth nature's evolutionary forces and how these forces play with genetics. Part 1 explains the intricacies of genetic biotechnology like CRISPR-Cas9 genome editing, and how CRISPR-Cas9, when used to make gene drives, can convince humans to modify the genomes of every single individual in any species of our choosing. I make the case that this kind of genetic engineering, "genetic welding," unleashed into the wild, will present a new force of evolution. I show just how fast evolution can proceed to change a species, and we'll learn what it is that makes a species a species in the first place. I infuse the conceptual points with incredible tales of organismal biology: of trichromatic squirrels and blanchet mice, of tomatoes and the opsin genes that let us see, of crocodiles and skunk musk, of chimeric sea and of the virtues of chickens. I draw on my own experience of living on three continents and conducting research in the lab and in the field of tropical habitats over the past few decades.

Part 2, *Transgressive fauna*, shifts attention toward the applications and implications of using evolutionary forces, and genetic engineering, to manipulate organisms and to create new species. We'll walk through the ecosystem consequences of species gain and loss at our current Anthropocene era. We'll deliberate the ins-and-outs of de-extinction with aurochs and woolly mammoths, of rebuilding with wisent (European bison) and cheetahs, of "gen" control over invasive species like hippos, all as modern large-scale incarnations of ecological restoration. We'll ponder the figurative dragons that we would need to confront in applying genetic welding to create and introduce new species into ecosystems. From the view of genetics, humans are just another animal. In considering the ethical soup of genetic engineering of our own species, I highlight lessons from body modification and in vitro fertilization, identifying the potential for genetic welding of human genomes to unleash what I term *guerrilla eugenics*. I share my own internal conflicts in three multifaceted ethical discussions. We'll lay bare the competing and often mutually inconsistent views of what is "wild" and what people desire from "nature," the oft-neglected considerations that are crucial in deciding how humans should deploy or prevent evolutionary engineering and genetic welding in ecosystems. What we decide