Life According to Nature

Problems and Prospects of Evolutionary Ethics

By

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To my parents, Martha H. Wilson (1929-2020) and William A. Wilson Jr. (1924-2017), who modelled science, wit, and compassion.

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Introduction

'Nothing,' says the philosopher in an 18th century tale about the pursuit of pleasure and the meaning of life,

> is more idle than to inquire after happiness, which Nature has kindly placed within our reach. The way to be happy is to live according to Nature, in obedience to that universal and unalterable law with which every heart is originally impressed.[1]

What could all this mean? What is the 'universal and unalterable law' allegedly impressed upon our hearts? And why should we believe that life according to nature, rather than a life lived according to reason, or tradition, or some other value, guarantees happiness?

This is a book about human history, the history of philosophy, evolutionary theory, and the way we live now. My aim is to examine critically, but also sympathetically the suspect concept, drawing on three sources of information and speculation: evolutionary theory, anthropology, and philosophy. Evolutionary theory reminds us that we are products of nature, with impulses and emotions that are ingrained and resistant to eradication. At the same time, it makes evident our differences to other primates and to one another. Anthropology shows us what is fundamental to the human way of life and also how much variation there can be in how societies organize themselves. Philosophy provides the concepts for the explanation and critical evaluation of our beliefs and practices. At its worst, philosophy reinforces age old prejudices, presenting them as wisdom. At its best, it explodes preconceptions and suggests new ways to think and act.

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[1] Samuel Johnson, *The History of Rasselas, Prince of Abyssinia*, 55-6.

Human beings have and have always had culture—or better, cultures—beliefs, attitudes, and practices that are transmitted from generation to generation by teaching and by simple observation and imitation with occasional modifications. It is human nature to be encultured. But civilization, which I take here to involve technology employing metals, the practices of reading and writing, and the use of energy sources other than the culinary fire, along with all that followed from these historical innovations, is a particular form of culture. It intensifies and relieves, introduces and negates, the pressures experienced outside it. We did not always have it and, perhaps fortunately, we still do not have it everywhere. By adopting as far as possible a perspective from outside civilization we gain new perspectives on our exceptional powers of invention and our ability to use knowledge and ideas to assist and to harm, and to build and to destroy.

The ancient Stoic philosophers, who first propounded the ideal, characterized life according to nature as life 'developed to full perfection and supplied with all its needs.'[2] For many of us today, the words 'developed,' 'needs,' and 'supply,' create a certain unease. Supplying needs globally is, we suspect, a playbook for nature's destruction. Nature seems the antithesis of development. Our situation appears dire even without further development in the same general direction.

Over the millennia, we have modified our original habitat in well-intentioned but destructive ways. The fact that metals can be smelted at temperatures attainable in brick furnaces and that some plants and animals can be domesticated, together with our natural capacities—our dexterity, ingenuity, capacity for planning and organization, and our ability to command and tendency to obey—have dramatically altered patterns of work and leisure. Our efforts transform raw materials. We dig them up, or pump them out, or chop them down,

[2] Cicero, *On Ends*, tr. Rackham, 421.

burn them, change them into something else, distribute these things, and dispose of them. Doing this faster and more efficiently produces the growth favoured by economists.

Human creativity, know-how, and dynamism have filled the world up with waste products and toxic chemicals, exterminating and poisoning other animals, making slaves and quasi slaves of our factory and office workers, polarizing rich and poor, confining women, creating criminal classes and subjecting individuals to painful and futile forms of punishment. The production and distribution that political economy seeks to maximize has a byproduct: the accumulation of trash, much of it useless and indestructible, the end product of the processing of raw materials into consumer goods. Rusting scrap metal and old machinery litters the exurbs and the countryside; an island of plastic bags covers thirty square kilometres of the ocean. Heavy metal effluents containing lead and cadmium, the residues of pesticides and herbicides, arsenic, nitrates, mercury compounds, radioactive waste, PCBs, hormones, prescription drugs, and all the poisonous by-products of manufacture mix with soil, air, and water. The more subterranean fuels and minerals are brought to the surface, the more surface is erased. The wolves, badgers, bears, foxes, snakes, birds, jaguars and other creatures that populated the outer and inner worlds of our ancestors may soon exist only in children's books. The remaining animals will be the pathetic, overbred specimens wallowing in muddy, excrement-filled farmyards and sheds, or confined in cages, or cooped up between four walls.

Psychologists, criminologists, and economists, as well as philosophers and ecologists, have catalogued the costs as well as the benefits of progress and development. Urbanization and office work subject city dwellers to crowding, to loss of natural light and its replacement with artificial illumination, to bad air and water, and to the din of motors, horns, and sirens. Historically, the overproduction of

manufactured goods led to conflicts over markets and tariffs; today, overconsumption of manufactured foods leads to obesity and illness. In the most prosperous countries, the demand for psychological counselling in the hope of resolving problems with spouses, children, and co-workers, or to cope with feelings of anxiety, loneliness and futility increases year by year.[3]

To every technology-generated problem, we cheerfully suppose, there must be a technological solution. We will make socks and mittens out of plastic water bottles and fuel for automobiles out of corncobs. To combat global warming, we can shoot aerosols into the atmosphere or plant vast colonies of algae or simply erect walls and dikes to hold back the oceans. To deal with declining energy supplies, we can invent more efficient motors for automobiles or build nuclear reactors and shoot their byproducts into space with rockets. To combat international terrorism, born of the mixture of political anger and physico-chemical know-how, we can devise better screening machines and surveillance devices. For depression, there is an array of new drugs; for the absence of intimacy, there are internet simulacra, and lifelike talking robots are on the way.

Technology has not conquered scarcity. We have increased the number of human beings making demands on vanishing resources and redistributed scarcity, so that many can live in conditions of nutritional and cultural plenty that are virtually devoid of risk, while others must exist in dependent states just this side of starvation and death from disease. For a large population to live in a concentrated area, it must invent large-scale forms of bureaucratic organization for working, for trading and distributing goods, and for fighting offensive and defensive wars. The pursuit and defence of prosperity requires armies and weapons, and arms and armour make excellent export products, stimulating conflagrations all over the globe. The ‘rules

[3] Robert J. Lane, *The Loss of Happiness in Market Democracies.*

of stable possession'—respect for private property—that are mostly observed in small communities where people know and respect one another, are conspicuously violated, not only by conquerors and marauders motivated by gain, glory or sadism, but by kleptocratic regimes and entrepreneurs in charge of vast workforces, by, in other words, the most conspicuous figures of civilization.

Since the invention of atomic bombs, biological weaponry, nanoparticles, linear accelerators, and other powerful tools, the possibility of self-elimination of a too-clever species of engineers is not out of the question. Climate change that now directly causes several million additional deaths per year through heatstroke, drowning, freezing, and the migration of infectious diseases will cause millions more as food and water supplies suffer, and people are forced to fight for resources. There may be persons to whom it is a matter of indifference whether their descendants or anyone's descendants persist beyond a generation or two. It would not matter in their view if a nuclear world war fought in the year 2100 exterminated all the human and most of the plant and animal population or if a plague reduced the numbers of our species by 50%, because they will not likely be around to experience it, and neither will their children or grandchildren. The survival of humans as such has no particular value in their eyes. But this position is morally repellent. The end of the species, if it comes about, will not be a graceful fading away, but an event of mass horror with years of suffering and starvation.

We recognize, to be sure, that the most troubling features of modern life are by-products of the effort to improve and satisfy, and that, if we have paid dearly, we have also been well rewarded. The history of civilization is the history of the development of latent human capability, including the aesthetic sense and the capacity for abstract thought. Everything we admire and applaud about civilized life—not only the creation of useful, life-saving products, but also novels, paintings, and

mathematical theories—is a product of these capabilities, co-ordinated in a remarkable manner. We have enriched, refined, and complicated human experience, prolonging life and restoring health. We have such enviable goods as plentiful and varied food, water at the touch of a tap, medicines to relieve pain, and air conditioning to cool it down indoors. And we have access to a variety of occupations and activities that satisfy our natural love of novelty and cognitive engagement, and our love of vicarious emotional experience and indulgence in fantasy. We are surrounded by a variety of objects that can satisfy our liking for shapes, colours, and designs of intricate manufacture, and the appetite for goods and experiences provides employment for persons who would otherwise sit bored and idle, or be up to no good, or starve.

Both perspectives on civilization—that we have liberated ourselves from the constraints imposed by a harsh and variable nature, and that we are destroying our habitat and will drive our species along with many others into extinction have repressed it—are valid. No one is to blame for having caused 'the present' because no one ever tried to bring about 'the present,' and the effects just cited. They are the result of accumulated decisions made over thousands of years, each of which appeared rational and just to the decision-makers in its context. It is nevertheless reasonable to ask whether we could subtract from our lives many of the unwanted byproducts of civilization including environmental degradation and the oppression of human by human, and, if so, what additions to our lives—new practices, new ways of doing things—this would require.

My interest is in the relationship of life according to nature with moral ideals. Despite the criticisms of ancient philosophers I offer in this book, I understand the concept of morality as Socrates did in his debate with Thrasymachus. Physical force, coercion, and manipulation abound in nature and in the lives of humans everywhere. Thrasymachus, and later Nietzsche, held morality and its appeal to justice and fairness to

be an invention of the numerous inferior weak to defend themselves against the strong and superior few. There is an element of truth in this accusation; morality is protective of the weak from abuse by the strong. But that is its point, as Socrates understood, and that is why morality is present in some form in every culture. It furnishes concepts of justice and fairness and states prohibition rules that forbid actors to use physical force, coercion and manipulation to obtain ends judged to be wrong. It is the verbal equivalent of a blocking operation; a 'Don't do that!' or 'Stop that!' command. [4]

Until the late nineteenth century, morality and social policy were based on what people believed about human nature, and what they believed was a tangled compendium of fact and error, including motivated ignorance and outright illusion. It is only since the improvement of the social and biological sciences that we have been able to entertain the possibility of basing our practices on what can be known, or at least surmised with confidence, about ourselves.

In later chapters, I will refer frequently to the claims of scientists and philosophers who have urged that our institutions and practices should be reformed in line with what we know or can surmise about the evolutionary origins and psychological underpinnings of our capabilities and behaviour. It would be curious, they maintain, if topics of the greatest moral importance, including selfishness, partiality, sexual morality, and social equality, as well as exclusion, exploitation, and aggression, were not illuminated by such studies. Steven Pinker in *The Blank Slate: The Modern Denial of Human Nature* maintains that 'The new sciences of human nature can help lead the way to a realistic, biologically informed humanism….They promise a naturalness in human relationships, encouraging us to treat people in terms of how they do feel rather than how some theory says they

[4] David Braybrooke et al., 'Rules in Practice,' in Braybrooke, et al *Logic on the Track of Social Change*.

ought to feel.'[5] For Daniel Dennett, 'ethics must somehow be based on an appreciation of human nature—on a sense of what human nature is or might be like and what a human being might want to have or be.'[6] Robert Trivers and Irven DeVore maintain that, because there are biological, genetic and natural components to our behaviour, '[W]e should start setting up a physical and social world which matches [our] …tendencies.'[7] Charles Murray cautions in turn that '[S]pecific [social] policies based on premises that conflict with scientific truths about human beings tend not to work.'[8]

The more we can learn about human nature, it seems, the more humane and the less wasteful our institutions and practices will be. Frustration results, these writers imply, when needs are not satisfied, when capabilities are suppressed, or when people are required to behave in ways that are unnatural for them; it is costly—emotionally and often economically—to maintain institutions and practices that are unnatural. Pinker argues that the denial of human nature has promoted cruel childrearing regimes, parental guilt over children who turn out badly, urban planning that violates the human desire for natural light, ornament, and surroundings to scale, and the release of psychopaths under the illusion that they can be reformed by counselling.[9]

The interest in human nature has been strongest amongst theorists who take their cues from the theory of evolution by natural selection. Evolutionary theory has inspired many writers, beginning with its discoverer Charles Darwin himself, to consider its applications to social and political life. Yet the prescriptions and policies claimed

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5 Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, xi.

6 Daniel Dennett, *Darwin's Dangerous Idea*, 268.

7 Robert Trivers and Irven De Vore, filmscript for *Doing What Comes Naturally*, quoted in Arthur L. Caplan, ed., *The Sociobiology Debate*, 321.

8 Charles Murray, 'Where are the Female Einsteins?'

9 Pinker *The Blank Slate*, xi.

over the years to be rooted in Darwinian biological realities range from the disappointing to the disturbing. Rather than restoring to us an appreciation of the unity of nature and a sense of the fragility of life on the planet, sociobiology, evolutionary psychology, and evolutionary ethics have remained fixated on selfishness, aggression, sex and gender differences, and appropriate social roles. Rather than addressing the problems posed by the needs and desires of all, they have appealed to concepts of inheritance, innateness, and evolutionary significance to parade values –or at least to sigh over inevitabilities—that appear to clash with Pinker's promised humanism.[10]

Moral philosophers have been somewhat reluctant to engage with this literature. Philosophy, they maintain, is a discipline defined by a long tradition of reasoned argument. It did not have to deal with evolutionary biology in the past and it can defend its ideas without doing so now and in the future. It tells us how a world with properly behaving ethical people would look and what should happen in it. The notion that we are equally endowed with rationality and rights and entitlements on the non-empirical level is its starting point.

The segregation of pure philosophy from the natural and social sciences is an admission of defeat. It invites the challenge that philosophers are not 'facing reality' –as the title of a recent book on racial inferiority has it.[11] At the same time, the images delivered to us by the social and behavioural sciences cannot claim to be reality's mirrors. Because they touch on matters of such importance to our lives, the human sciences are subject to more bias than are the physical sciences. Validity, reliability, ethical constraints, and overly narrow sampling afflict many studies.[12] As is the case in biomedical research, statisti-

[10] For trenchant critique of earlier appeals to natures, natural laws, and natural behaviour in normative contexts, see Lorraine Daston, *Against Nature*.

[11] Charles Murray, *Facing Reality*.

[12] Peter Singer, 'Ethics and Sociobiology.'

cally significant correlations leave the precise nature and direction of causation indeterminate. The frequently employed survey method in the social sciences does not allow for clarification requests and qualified answers. Attitudes change over time in a population, rendering surveys and studies out of date, and beliefs and attitudes vary from country to country and subculture to subculture. People do not always know what they think or how they feel or remember how they typically behave. It is easier to respond to a questionnaire or interview with a presentable answer in keeping with one's self-image. Evolutionary psychology tries to get underneath the level of cross-cultural differences in attitudes and behaviour, but at the risk of becoming irrelevant to life as it is lived within a particular culture.

Nevertheless, the recommendation to try to understand more objectively human abilities, needs, and interests as they are relevant to designs for living is sound. Much interest has focussed on the evolution of altruism in social animals as providing a platform for human morality,[13] and a number of philosophers have taken up the challenge to explain the relevance of our deeply rooted attitudes and dispositions to moral norms.[14] Although neither prudence nor morality licenses every form of behaviour that evolution may have wired us up to engage in, evolutionary psychology can alert us to what arrangements and practices individuals are likely to find oppressive and what practices it is likely to be difficult to change without considerable effort.

A principal aim of this book is however to dismantle certain conceptual bridges running from natural variation to inevitable social disadvantage and an equally inevitable diminished quality of life. We recognize that human qualities and skills vary from person to person;

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[13] See Philip Kitcher, *The Ethical Project*; Elliott Sober and David Sloan Wilson, *Unto others: The Evolution and Psychology of Unselfish Behavior*.

[14] For mostly favourable treatments of evolutionary ethics, see the collection of papers of Michael Ruse and Robert J. Richards, eds., *The Cambridge Handbook of Evolutionary Ethics*.

there are gradations of height, IQ, industriousness, parental concern, mathematical talent, empathy, and numerous other variables which are partially heritable, partially sex-linked, and partially the result of experience and exposure, decisions and accidents. Genetically similar and genetically diverse populations will differ in their typical phenotypes and their own distributions of traits. Since these features affect their outcomes, only in a monotonous world of identical clones, it might seem, could there be any hope of greater social equality. This is not going to happen, and no one would wish to be an inhabitant of such a world.

To address these issues, I concentrate in this book on human abilities, the nature of work, relations between the sexes, and warfare. The first wave of evolutionary ethics was built on such notions as 'man the intelligent primate,' 'man the hunter,' 'man the harem-master, ' and 'man the warrior.' These concepts have been exposed as simplistic in the last decades by anthropological researchers. Hunting, male sexual profligacy, and aggression unquestionably belong to the human template, as does the capacity for abstract thought. Equally central to the establishment and continuation of our species are gathering, cooking, sharing, female sexual appetite and choosiness, long childhood, conflict-avoidance, rule following, peace-making, and motivated irrationality.

This is a hybrid work. In the following chapters, I refer frequently to some of the most prominent names in the history of philosophy, commenting on what I take to be their unappreciated insights as well as on their influential factual and moral errors with regard to human nature and the social world. Although this interweaving might seem unusual, it has a purpose. For the 19th century philosopher Johann Gottlieb Fichte, the appreciation of history and the exercise of philosophical creativity were closely linked; the theorist who takes current conditions as natural and necessary, he thought, can never grasp 'the

entire sense of what is presented before him,' while the historian can see that 'entirely different nexuses and relations of things are possible…indeed far more possible, natural and rational—than those that are given.'[15] In interweaving some of the most significant normative and descriptive passages from the history of philosophy with biological and cultural history, I aim to validate Fichte's observation.

[15] Fichte, *The Closed Commercial State* [1800] tr. Curtis, 137-8.

Part I

Nature and Culture in the History of Philosophy

Chapter One

Civilizations-Critique: A Brief History

The critique of civilization and the appeal to a more natural way of living have a surprisingly long history. The Old Testament prophets looked with dismay on their own economically successful but polarized societies and, predicting doom, awaited the coming of the Messiah. The notion that human history began in an early paradise and declined into hardship and conflict is a striking theme of many archaic texts. The Garden of Eden, according to the ancient Hebrew account, was the habitat of the first human beings, who lived without toil and psychological stress, surrounded by beauty and plenty, and exempt from disease and death. That way of life was unsustainable, according to the myth, because of the humans' refusal to obey and their wish to take matters into their own hands.

In the orthodox version of the Bible, the frugivores Adam and Eve are expelled from their garden paradise and condemned to sweaty labour, to tilling and herding, and nourishment on the 'herb of the field,' i.e. grains. The fruit of the Tree of Knowledge did not confer moral illumination, but rather the knowledge of how to do good and evil. After the Fall, Eve, formerly Adam's companion and equal, became his servant. Toil and suffering, a major climate disaster, the Flood, wars and plagues, political oppression, and other trials and tribulations followed, along with a massive multiplication of the earth's population.

From the somewhat more reliable reports of archaeologists and from ancient texts, we learn how, in early village societies, backbreaking field labour and water carrying replaced hunting and gathering, with the more docile members of the group assigned the most labo-

rious tasks. Livestock were fenced in, and nomads who had hitherto followed their herds from pasture to pasture found themselves settled in huts and houses. Grains provided life-sustaining calories in bread and the pleasures of alcoholic beverages but also introduced tooth decay, obesity, and other diseases of the sedentary life.

Early Greek poets too looked back to a preceding age of perfect welfare. According to Hesiod, our ancestors were 'a golden race of mortal men who … lived like gods without sorrow of heart, remote and free from toil and grief….' The Golden Age was followed, according to Hesiod, by a short-lived Silver Age of simpletons. After the Bronze Age of people 'hard of heart like adamant,' who destroyed each other and themselves, humanity entered the Iron Age, when, the poet lamented, 'men never rest from labour and sorrow by day, and from perishing by night….' Everything is getting worse, and soon 'all will be at war with all.'[16]

Three other ancient accounts, based on unknown earlier sources, reconstruct life before civilization, in two cases portraying it as a temporary and fragile condition, and in all three cases accusing technological progress of eroding morality. In the *Laws,* Plato envisioned a series of natural disasters that had repeatedly annihilated humanity at intervals of 'millions of years,' leaving only a small population to start over rebuilding civilization.[17] In the last annihilation, occasioned by a great flood, a few unskilled shepherds survived on the tops of mountains after the great cities of the plains were utterly destroyed. With the destruction of the cities, political systems, tools and technical skills, laws, virtue and vice were wiped out. Knowledge of mining and metalworking disappeared, timber was unobtainable without tools, and all means of conveyance disappeared. Some cattle and goats survived, so meat and milk were available. Pottery and weaving, two

[16] Hesiod, *The Works and Days*, tr. Evelyn-White, 46.

[17] Plato, *The Laws* 677-9, in *Complete Works*, ed. Cooper, 1365-8.

skills given by the gods so that the human race could never entirely perish, could be revived since they did not require metal. The restart condition, Plato continues, wasn't so bad. There were few quarrels, because 'where neither wealth nor poverty exists …tendencies to violence and crime and feelings of jealousy and envy simply do not.' Ignorant of foreign warfare and its techniques, as well as of the urban warfare that consists of lawsuits and party strife, the survivors were 'simple and manlier and at the same time more restrained and upright in every way.'[18]

In his *Life of Greece* by Dicaearchus, a 4th century BCE pupil of Aristotle and a prolific author, early humans are described as unacquainted with agriculture 'or indeed any art.' Things grew 'of their own accord,' and people were 'free from labours and care,' and from disease, and 'killed no animate being.' As there were no possessions worth accumulating, they lived in 'health, peace and friendship.' Though life was hard in some respects, the moral deterioration of the human race came about only after people began to hunt and to domesticate animals for food and later on to plant crops. Having learned to kill for their benefit, and now able to accumulate wealth, they practised violence towards other humans as well as violence towards animals. Possessions were now worth having. '[S]ome made it a point of honour to seize them [from others] by gathering themselves together and calling on each other [for help] and war was invented.' As 'sharing stops choking,' they learned to apportion goods to some extent, but imperfectly. [19]

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[18] Ibid., 679e, 1368.

[19] See the translations of reports of Porphyry and Zenobius in David C. Mirhady, *Dicaearchus of Messana: The Sources, Texts and Translations*,' 64-5. As Zenobius explains the saying, 'When meats were set out as common dishes and not in individual portions, the more powerful seized the food from the weaker, and it happened that these choked to death because they were not able to save themselves.' Ibid., 67.

Three centuries later, around 40 BCE, the Epicurean Titus Carus Lucretius, author of the philosophical poem *On the Nature of Things*, envisioned early humans as 'living their lives after the wide-wandering fashion of wild beasts.'[20] They had no ploughs, no shovels, no pruning shears, or sickles. They inhabited forests and mountains and dined on acorns and arbutus berries, drinking from rippling brooks and springs. Their conjunctions were temporary. Women were attracted to men by reciprocal desire, or bribed with food—not meat, but 'choice pears,' or they were overcome by male lust and 'violent force.'

In time, these feral humans acquired huts, skins, and fire. They learned techniques for living by observing other animals, for example, weaving and music from birds. And by observing how berries and acorns falling from trees and shrubs produce seedlings, they learn to sow and to graft.'[T]hey tried ways of cultivating the little plot they loved, and saw wild fruits grow tame in the ground with kind treatment and friendly tillage.' They cleared the forests for meadows, pools, streams, vineyards, and plantations, and the farms divided by rows of grey green olives presented a charming sight. Wedlock was invented, and the men for the first time 'saw their offspring born of them.' They grow soft as a result of these comforts and familiarities and tender towards women and children, 'signifying by voice and gesture with stammering tongue that it was right for all to pity the weak.' The original social compact was to 'do no hurt and suffer no violence.'

Deterioration is ascribed not to the abandonment of a vegetarian diet, but rather to metallurgy. Forest fires devour trees down to their roots, and molten ores of silver, gold, copper, and lead are seen to flow out of the rocks. Human beings now become dangerous to one another in a new way, for, according to Lucretius, whatever ill will they might have borne one another and whatever flashes of homicidal anger they

[20] Quotations are drawn from *On the Nature of Things*, tr. Smith, Bk V: 925-1456.

might have experienced, they were less lethal to one another with bare hands, nails, teeth, stones and branches than with metal weapons. It is not malice, however, or love of fighting and killing that produces war, but moral blindness, not knowing 'the limit of possession.'

The smelting of iron also brings into use the loom, agricultural tools for farming and hewing trees, hence shipbuilding, and so commodities, trade, and dangerous sea voyages. Kings go on to found cities, to divide land and livestock, and to award them to their favourites, distinguished by power, beauty, and genius. Money is introduced, which negates these natural advantages. Envy and ambition are stimulated as a result—since now even those disfavoured by nature can become rich or powerful. Bloodbaths follow. Kings are slain, 'proud sceptres lay overthrown in the dust, the illustrious badge of the topmost head, bloodstained beneath the feet of the mob…So things came to the utmost dregs of confusion, when each man for himself sought dominion and exaltation.' In short, there is a war of all against all. Order is at last established by laws and magistrates. This is effectively a second social contract; one based not on the sentiment of pity and good heartedness but on explicitness and enforcement.

Lucretius seems at the end of Book V to be eminently satisfied with the present. He cites the appearance of 'Navigation, agriculture, city walls, laws, arms, roads, clothing and all other practical inventions as well as every one of life's rewards and refinements, poems, pictures and polished statues of exquisite workmanship. All without exception were gradually taught by experience and the inventiveness of the energetic mind, as humanity progressed step by step.' As an Epicurean atomist, however, he held out no hope for the persistence of anything. Maturity is always followed by degeneration, the dissipation of parts and eventual reshuffling of their atomic constituents. The equilibrium of Book V is followed by the horror of Book VI which recounts the collapse of civilization, caused by a vicious plague. Lucretius dwells on the uselessness

of religion and the futility of wealth and power in the face of the destructive powers of nature and the invisible atoms that carry lethal diseases. The book ends with a grim and sorrowful image of the piled-up rotting bodies of the dead and the desperation of the still living. The poem is a critique of individual greed, Roman imperial ambition, and the Stoic idea of a well-ordered cosmos guided by Providence.

These histories attracted new and sympathetic attention in the 18th century under absolute monarchies and increasing hardship for the poor. In the *Discourse on the Origin of Inequality,* written under the rule of Louis XV of France, some twenty or so years before the outbreak of the French Revolution, the philosopher Jean-Jacques Rousseau looked back to the 'youth of the world,' as he vividly imagined it, as a time of equality and human happiness.

> As long as men were content with their rustic huts, as long as they were limited to sewing their clothing of skin with thorns or fish bones, adorning themselves with feathers and shells, painting their bodies with various colours, perfecting or embellishing their bows and arrows, carving with sharp stones a few fishing Canoes or some crude Musical instruments…they lived free, healthy, good, and happy, insofar as they could be according to their Nature. [21]

In a series of stages occurring in dim prehistory, Rousseau thought, personal freedom had been curtailed by the formation of social hierarchies, and individual artistry and skill had given way to organized and alienated labour.'[T[he study of…original man, of his real wants and the fundamental principles of his duty,' he decided, 'is the only proper method we can adopt to obviate all the difficulties which the origin of moral inequality presents.' The natural differences between persons in

[21] Jean-Jacques Rousseau, *Discourse on the Origin of Inequality* [1755] in *Collected Writings of Rousseau*, 6 vols., tr. Bush et al. 3:49.

age, health, strength, and character did not suffice to explain observed differences in wealth, honour, power or authority, which accordingly had to be supposed artificial and authorized by convention. But how could persons with no natural distinction achieve positions of power and dictate their own terms? Rousseau's answer, following Lucretius, was that certain historical accidents, together with 'the development of our faculties and the advance of the human mind,' had issued in the evolution of the two populations of the weak and the strong. The creation of social classes and the oppression of the poor were the by-products of the metallurgical revolution. 'Vast forests were changed into smiling fields, which had to be watered with the sweat of men, and in which slavery and misery were soon seen to germinate and grow with the crops.'[22]

It was not only the rediscovery of ancient literature that stimulated criticism of the present and curiosity about life before and outside of civilization. Europeans were intrigued by reports of encounters with tribal peoples, beginning with the conquest of parts of the Americas by the Spaniards in the 15th century. Some years after his death, Rousseau's contention that the happiest epoch of human life had antedated the introduction of metal tools and weapons and increased human interdependency appeared to be vindicated by the European discovery of Tahiti in 1766 by Louis Antoine de Bougainville and confirmed by such later visitors as Captain Cook. This beautiful tropical island of fishermen and gatherers was temperate and abounded in natural resources. The dress, manners, and craftsmanship of the natives were found admirable; their weaving, dyeing, matting, and manufacture of boats and fishing implements were deemed superior to European products. 'The fertile soil and the benevolent climate,' the traveller Georg Forster wrote, 'bring forth by themselves so many kinds of nourishing plants that the natives can depend on an undisturbed and

[22] Ibid.

carefree happiness with regard to their sustenance. …The desires and needs of these people are limited, as one might expect, and even the great purpose of our existence, the production of reasonable creatures, is not trammelled and laden with as many oppressive vices as in civilized countries where the cares and miseries of married life make people so troublesome and sour.'[23] Philbert Commerson described Tahiti as 'a utopia…the only corner of the world where there live men who are without prejudices, without needs, without dissension,' a realm where women 'disperse happiness.'[24] Nature's wants there, observed another, 'are but few, and the uncivilized part of mankind, in general seem contented if they can acquire those few.'[25]

The imaginary prehistories, though based on ancient memories and oral traditions, contain more truth than error. Bronze, a soft metal with a low smelting point, is poorly suited to the manufacture of tools and weapons, and only the rigidity of iron could support plough agriculture and the effective militarization of humanity, a development occurring in the second millennium BCE. Metal adorned and metal enslaved, as Elise Boulding remarks. 'The first dagger appeared soon after the first earring, and shortly after that, much of Europe and Asia was armed.'[26] The dead were now buried with their weapons, rather than with their tools. As larger meat-and-grain fed populations encroached upon one another's borders, and as there were now holdings to fight for, to acquire or to defend, standing armies became a feature of civilization.

While warfare and the desecration of the bodies of other humans are practices now recognized to date back to the Upper Palaeolithic,

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[23] Georg Forster, quoted in Wuthenow, *Die erfahrene Welt: Europäische Reiseliteratur im Zeitalter der Aufklärung*, 255.

[24] Philibert Commerson, quoted in B. G. Corney, *The Quest and Occupation of Tahiti*, 3 vols., 2: 461-462.

[25] Sydney Parkinson, *Journal of a Voyage to the South Seas* [1773] 93.

[26] Elise Boulding, *The Underside of History*,146.

appearing in the archaeological record some 12,000-14,000 years ago,[27] there are still, on the face of the earth, small, peaceable bands of hunter-gatherers, who live much as the historians of humanity and travellers described them. Most of these societies have vanished—their populations have been exterminated, absorbed, or crowded into ghettos, so that the reserve shelf of any university library dedicated to this part of anthropology has a curiously antiquarian aspect. For the ethnography of hunter-gatherers reached its peak of production in the early to mid-20th century, and just when we can think of many new questions to pose about these cultures, and to recognize the biases in earlier reportage, our subjects are nearly gone. But there is a good deal that we do know, and these vanishing peoples, including the Hadza, the !Kung, the Japanese Ainu, the Netsilik of the Arctic, the Mbuti, and the Ik have been studied in detail. In our own time, the anthropologist Marshall Sahlins described the !Kung of southern Africa, who had modest wants and technologies to address them that were simple but adequate, in a famous remark' as 'the original affluent society.' He contrasted their expectations with the classical economists' view of the human being as a creature of almost unlimited wants and limited means to achieve them. 'To exist in a market economy,' Sahlins said, 'is to live a double tragedy, beginning in inadequacy and ending in desperation.'[28]

Present day hunter-gatherers are not, it is often emphasized, 'living fossils.' I cannot assume that some ancestor of mine lived in the manner of some present-day tribe, or that my ancestor and yours must have earlier shared a common, noncivilized culture. An infant born in a New Jersey or Aberdeen suburb and accepted and raised

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[27] Lawrence Keeley, *War before Civilization*.

[28] Marshall Sahlins, commentary, in *Man the Hunter*, ed. Lee and De Vore, 85-6. David Kaplan, who presents some sharp criticisms of Sahlins, concedes that 'There is no question but that our lives are filled with more "busyness" than those of the members of hunting-gathering societies.' 'The Darker Side of the "Original Affluent Society,"'313.

by the !Kung would resemble any other infant raised by them and vice-versa. Hunter-gatherers are emotionally and cognitively modern humans, with technologies, morals, aesthetics, religious beliefs, factual knowledge and explanatory myths of their own origins. They have distinct cultures and distinctive personalities within them. At the same time, as compared with us, they exemplify the contrast between what James Woodburn described as 'immediate return' vs. 'delayed return' societies.[29]

Woodburn's distinction was based on a comparison between the !Kung and the Kwakiutl of the Northern Pacific, a wealthy, bellicose, status-conscious, slaveholding society. He generalized the attitudinal differences between egalitarian, immediate return and hierarchical, delayed return societies as follows.

> Egalitarian societies are nomadic and positively value movement. They do not accumulate property but consume it, give it away, gamble it away or throw it away. Most of them have knowledge of techniques for storing food but use them only occasionally to prevent food from going rotten rather than to save it for some future occasion…. The system is one in which people travel light, unencumbered, as they see it, by possessions and by commitments. [30]

While they need hand tools and cooking implements, people in immediate return societies 'tend to use portable, utilitarian, easily acquired, replaceable artefacts—made with real skill but without hours of labour—and avoid those which are fixed in one place, heavy, elaborately decorated, require prolonged manufacture, regular maintenance, joint work by several people or any combination of these.'

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[29] James Woodburn, 'Hunters and Gatherers Today and Reconstruction of the Past.'

[30] Ibid., 97.

Agriculturalists, who construct permanent settlements, store food, and engage in trade, need considerably more. Because the goods accumulated by individual farmers during their lifetimes, whether flocks, lands, food stores, dwellings, tools or clothes, are bequeathed to their descendants according to prioritizing systems, long-term relationships of loyalty as well as envy are fostered in their societies. The old and weak are cared for more reliably than is the case in the forest, but the sexes are valued differently when women are in a sense 'produced' and 'farmed.'[31] Farmers have been described as more prone to violence, more respectful of men and the elderly, and more fearful and superstitious than their forest-dwelling counterparts.[32] Their crops are vulnerable to witchcraft, and their deities need to be placated with sacrifices and observances if the seasons are to come around regularly and they are to escape punishment by storms, floods, and diseases of plants and livestock. They must also defend their stocks, stores, and territory against jealous neighbours. In large settlements, priestly and military castes assume political authority as a consequence.

The delayed return on agricultural investment, Woodburn suggests, 'imposes basic organizational requirements for a set of ordered, differentiated, jurally defined relationships through which crucial goods and services will be transmitted in a specified and regulated manner.'[33] Antagonism and resentment arise in farmer societies along with their strong ties of loyalty and dependency. Relationships may or may not go well, but they are hard to evade. Hunter-gatherer groups, by contrast, are subject to ongoing fission and fusion, and their members can more easily avoid association with persons they dislike or consider lazy or uncooperative.

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[31] Ibid., 108-9.

[32] Bonnie Hewlett, 'Vulnerable Lives: The Experience of Death and Loss among the Aka and Ngandu Adolescents of the Central African Republic.'

[33] Ibid., 97-8.

For most of our evolutionary history, going back to our ancestors' time as tree-dwellers, we have been an immediate return species. What were the earliest humans really like? It is generally agreed that anatomically modern specimens of our species have existed for only about 300,000 years and behaviourally modern humans, who were skilled craftsmen and artists, entertained religious beliefs, and practised burial rituals, for somewhere between 40,000 and 120,000 years. The control of fire, however, goes back a million years or more; and hominins living perhaps as much as 900,000 years ago used red ochre and other coloured earths and juices for bedaubing their faces and bodies. The first object of improvement was likely the hominin body, and hairstyling, decoration or filing of teeth, tattoos, jewellery, and scarification are true cultural universals.

The manufacture of useful objects is also both natural and cultural for human beings. Manufacture is thought to have taken off 50,000-70,000 years ago, after tens of thousands of years of relative stasis. Although it is possible that the earliest humans made objects out of wood, fibre, and clay, only stone scrapers and hand axes remain. Some early inventions of Palaeolithic *homo sapiens* were baskets and slings for carrying food and infants, needles, knives, ceremonial and religious items, and toys. Combs, fasteners, bead jewellery, pottery, and other such articles appeared later; they are found in early graves after the transition to village life of the Neolithic period about 9,000 years ago. Arrangements of stones and stone monuments date back to the Upper Palaeolithic and huts to the epoch of Neolithic village life.

Palaeoarchaeology and anthropology agree with the ancient historians in assigning metallurgy, the domestication of animals, and the enslavement of people as the inventions that transformed immediate return into delayed return societies with their achievements in the arts, science, commerce, architecture, and government—and their levels of oppression These innovations are of very recent origin on

the timescale I have been describing, with agriculture dating back only 9-10,000 years, only 4% of humanity's history, and the beginnings of the Bronze Age only from the Third Millennium BCE, closer to 2%. The domestication of plants, especially grains, and the transition from the taming and domestication of pets to the maintenance of herds of sheep and cattle altered the quality and quantity of the human food supply, supporting a much larger population. Agriculture, unlike gathering and simple gardening, employs iron ploughs and draft animals and requires many hands for the harvest. Food could now be stored in living, dried, or milled form, and new tasks connected with food preparation and cooking were introduced into the human repertoire.

In the Third Millennium BCE, the first large cities were founded, surrounded by pastures, fields, and orchards, and within them palaces, temples, fortifications, and factories were built. The number of different occupations multiplied in response to the proliferation of desires and the discovery of means to satisfy them. Articles of daily use came to include looms, horseshoes, picks, shovels, secateurs, and medical instruments. Writing, a practice that appeared with urbanization, put both trade and taxation on a firm administrative basis, as well as opening up the possibility of human relationships that could be sustained without frequent face to face communication.

The system of delayed return that began with the domestication of plants and animals and the transition from hunting and gathering to nomadism, and then to sedentism, is accordingly our invention. We should regard it as we do any other invention, asking ourselves how, given what we expect and hope this invention to do, it can be improved. Given the recency of these acquisitions and their contingency, anyone interested in the concept of life according to nature must be intrigued by our prehistory and by the evolutionary forces