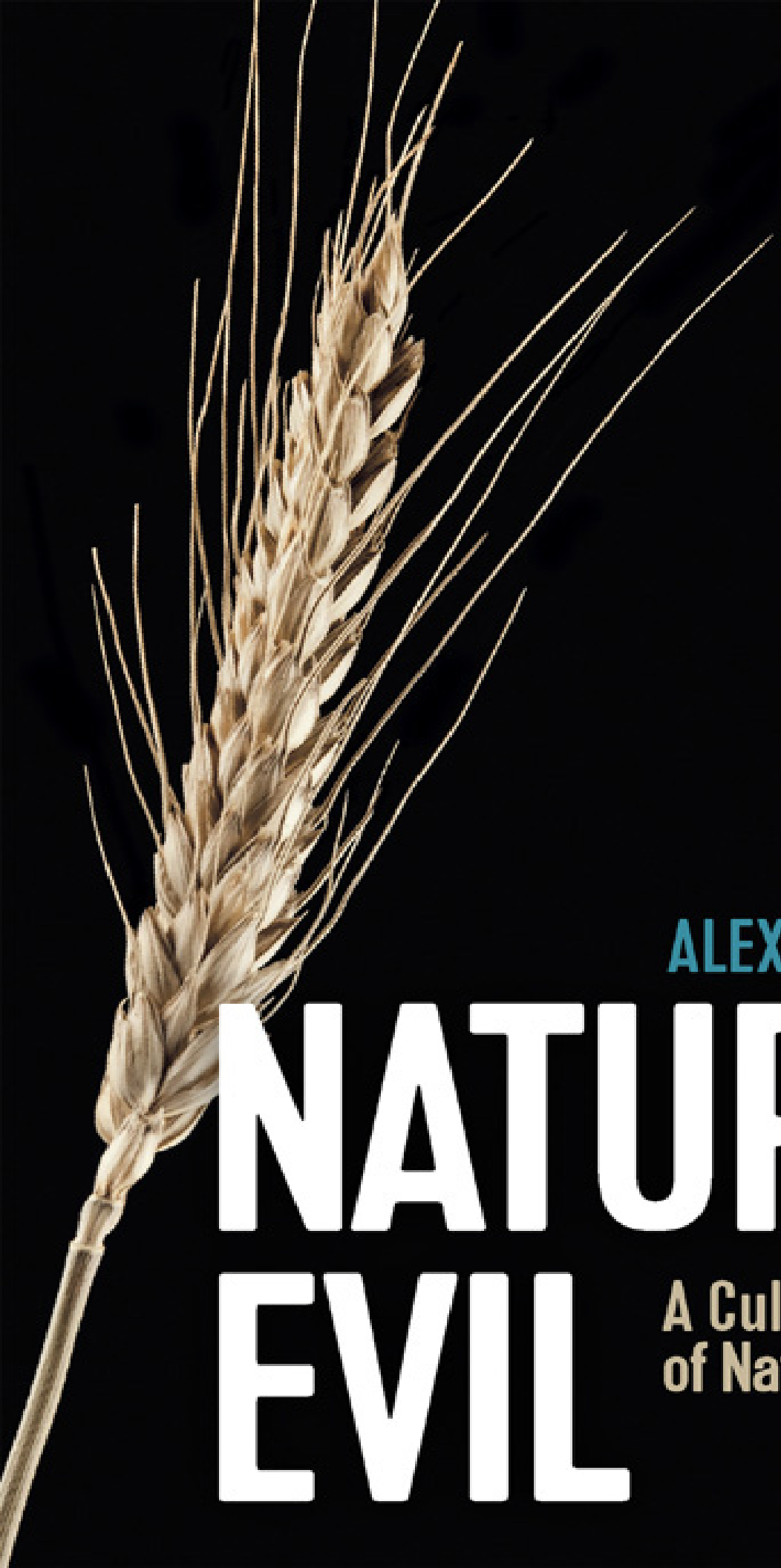

ALEXANDER ETKIND

# NATURE'S EVIL

## A Cultural History of Natural Resources

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# NATURE'S EVIL

## A Cultural History of Natural Resources

Alexander Etkind
*Translated by Sara Jolly*

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Over the years, I kept discussing this growing manuscript with my teenage sons, as it is all about the problems confronting their generation. So the book is dedicated to Mark and Mika.

# *Introduction*

It was the thirty-third year of the new era, although nobody knew that then. Harvests failed throughout the empire; there was a financial crisis in the capital and unrest in the colonies. The emperor Tiberius gave the banks 100 million sesterces so that they could distribute loans to landowners. Prices continued to rise even faster. In the capital, 'The high price of corn almost brought on an insurrection,' wrote Tacitus. In Jerusalem, Jesus was put to death after he had started a revolt of the poor against the local moneymen – one of his followers, Matthew, was a tax collector. But in the same year the richest man in the empire, Sextus Marius, who owned silver and copper mines in Spain, was also struck by disaster. Sextus was 'accused of incest with his daughter and thrown headlong from the Tarpeian rock.' Tiberius 'kept his gold-mines for himself, though they were forfeited to the State,' commented Tacitus.[1] A few years later the new emperor, Caligula, faced another food crisis. The Praetorian Guard preferred to kill him rather than do battle with the enraged populace over the remaining supplies of corn. Decades passed, and another emperor, Vespasian, introduced a tax on latrines. 'Money doesn't stink,' he said.

The leading characters in this book are unusual: peat and hemp, sugar and ore, cod and oil. Raw materials of different sorts are at once elements of nature, components of the economy and engines of culture. Civilised life is built out of them. Their specific characteristics explain the conduct and experience of societies through history. The state has a special relationship with them. This is the main subject of my book. As we follow the story of these commodities we will encounter many booms and even more

busts. From earthly flints to lunar soil, people have learnt how to use many things that they they originally had no clue about; exchanging these products according to need and want, they have involved in this circulation more and more different sorts of matter. This is a general process of *commodification*, but it worked in vastly different ways, depending on the nature of the commodity. Every crisis in the supply of raw materials leads to the ruin of some and the enrichment of others. The state accumulates grain so that, in a time of famine, it can distribute it to the people; people hoard gold, hoping to hide their wealth from the state; and everybody counts on order and stability. But when a famine, epidemic or insurrection happens, resources are redistributed according to new rules which nobody could have predicted. When Tiberius killed the mine-owner in order to give loans to the landowners, he saved the property rights of some by destroying those of others. Rulers knew only too well what the money changers didn't realise: that different sorts of capital aren't equal even if their exchange value is the same.

The owner of a silver mine might have more sesterces than all the landowners in the empire. But an individual producer of silver can be declared an enemy, his mines can be occupied and his capital seized, while there are so many producers of grain that it would be suicidal to make enemies of them. Silver is a *topical resource*: it creates wealth from a particular point on the earth for a comparatively low input of labour. Grain, on the other hand, is a *diffused resource*, demanding much land and a big investment of labour.[2] The difference in space- and labour-intensity is huge, but the sums involved, calculated in monetary units, may be equivalent. Still, silver is no more equal to grain than it is equal to air. When there's a shortage of silver, the rich suffer. When there's a shortage of grain, the poor suffer. When there's a shortage of air, we

all suffer. Money changers think of money as if it were a universal equivalent; rulers rely on the qualitative differences between commodities. Different natural resources have different political characteristics.* It may well be that silver sesterces didn't stink. But if you smell a dollar bill or a rouble close up, as if you were smelling a flower, you will catch a whiff of oil from both.

Any product – grain, a table or a smartphone – consists of raw materials extracted from nature and the labour invested in its production. The table is made of wood or plastic; the smartphone contains more than a hundred different alloys and plastics. The production of goods or services requires energy, which is produced by the physical effort of humans or animals, or by burning coal or gas. Unlike labour, which conforms to rules and lends itself to generalisations, raw materials have always been a matter of chance discoveries, distant journeys, successful ventures or, alternatively, disasters. The ambitions of rulers, the caprices of nature, the mistakes of scientists, the cupidity of managers, all culminated in the sovereigns finding themselves tête-à-tête with their mines, fields, boreholes, while the intermediaries were sacrificed.

An economy that deals in metals is different from an economy based on textiles, which is different again from an economy depending on oil. In the age of empires, each of the great economic machines concentrated on a particular form of natural resource. Embedded within the culture of its time, such a *mono-resource* defined the epoch. To this day, the speaker of the British House of Lords sits on the Woolsack. The artists of the Italian Renaissance honed their skills on rendering the play of light on fur and silk. Spanish portraits glitter with silver, while the paintings of Dutch artists capture the light falling on black broadcloth. In their paintings, the Russian masters portrayed bearded peasants, dwarfed by the vastness of the wheat fields, as

inevitably as Venetian artists depicted palatial storehouses and canals and Victorian artists steam engines and smog, symbols of the coal economy. Following the economic law of comparative advantage, this ever-growing specialisation helped nation-states and empires to acquire the things they lacked through trade or colonisation; but then a *resource shift* would arise, and the more exclusive the previous specialisation, the worse the crisis that followed. Viewed over the long course of its development, capitalism is not a linear 'production of commodities by means of commodities'.[3] Rather, it is a series of world-shattering choices that focused the global economic machine on one of these commodities at the expense of many others, followed by another unexpected choice of the leading commodity and another revolutionary shift.

A specialisation in a chosen commodity turns it into a *fetish*, an obsession that saturates cultural imagery and directs economic practices. Karl Marx famously wrote about commodity fetishism, but the underlying process is much closer to the staple theory formulated by the Canadian sociologist Harold Innis (see chapters 3 and 7).[4] Bypassing the people, the mono-resource economy simplifies the cultural-political system by connecting the sovereign directly to his natural source of power. Using many examples, I will demonstrate how a dominating staple captures the cultural imagination, defines its symbols and fetishes, and shapes *the kingdom's second body*.* The philosopher Bruno Latour describes a *mononatural condition* as the tendency of a civilisation to simplify its relations with nature.[5] In contrast to this *mononaturalism*, *multiculturalism* brings internal complexity, diversity and disenchantment.

Economists have long been writing about the fact that natural resources are more like assets than goods. The

price of a barrel of oil or an ounce of gold does not depend on the cost of its extraction any more than the value of an asset depends on the salaries of a bank's employees. Other factors define the price of gold: the rate of inflation, festivals in India, the threat of war. In contrast, the price of goods reflects the labour of engineers, workers, retailers and researchers. Labour is law-abiding; nature is contingent and, sometimes, rebellious. Unlike labour or knowledge, natural resources have a habit of running out. Extraction begins with peak productivity: the sea teems with fish, grain grows effortlessly, gold gleams in creeks, oil gushes in fountains. At the start of any extraction cycle, there is an Eldorado. As the years go by the earth loses its fertility, the mines become ever more dangerous, and the boreholes ever deeper. The fish in the sea and the trees in the forest disappear as a result of 'the tragedy of the commons': people exhaust a precious resource, considering it limitless because it doesn't belong to any one individual.[6] But even an individual owner exhausts his land, which is the reason for agricultural techniques such as crop rotation. Owned privately or publicly, fountains of oil dry up and the oil has to be pumped out, while adjacent oilfields are usually less productive.

Discussing this effect, eighteenth-century economists formulated the 'law of diminishing returns'. It applies only to the gifts of nature, while a reverse effect – 'economy of scale' – operates in relation to the products of labour: when manufacturing expands, productivity increases. Each ton of grain, silver or coal extracted is more difficult to get than the previous one; but every nail, boot or car produced is easier to make than the previous one. If a ploughman enlarged his field or added more fertiliser, then his expenditure per bushel of wheat would also increase; but if a miller increased his output of flour, his expenses per bushel would reduce.[7] This was 'a view of the world which

filled with deep-seated melancholy the founders of our political economy,' wrote John Maynard Keynes about a century ago.[8] The imminence of climate catastrophe has added to these debates our most basic resources – air and water. During the nineteenth century, the per capita consumption of energy doubled; in the twentieth century it grew a hundredfold. But we'll run out of air before we run out of oil. Critical theory becomes more radical as the pace of changes accelerates. Marring the present, the crisis transforms the understanding of the past. In the era of the Anthropocene, the neoliberal canon feels neither new nor liberal.

My question is not which comes first, resources or institutions. The relations between them are not cause and effect but are based on cohabitation, even symbiosis. The non-human agents of history interact with working, suffering, hopeful or disillusioned human beings. Harnessing nature, people endow natural phenomena with independent agency and deprive themselves of this agency. We will discern such elective affinities between sugar cane and British mercantilism, between hemp and Russian feudalism, between oil and globalisation. Every primary commodity is a social institution, and each one is different. Different natural resources have different political qualities and generate different cultural forms of reflection.

Inspired by the material turn in the study of the humanities, which has replaced the earlier fascination with language, I wish to combine a history of matter with a history of ideas.[9] You can't understand the thoughts of the past without addressing the things which were so familiar to the people who lived then – silk and grain, gold and coal. Material history and intellectual history are both interwoven with moral history. You can't understand the origins of the state, or revolutions, or global warming, without understanding political evil – its variety, origins and

change. Political evil entails violence, economic inequality and the suppression of freedom. This isn't news. What is news is the realisation that, in our world, ecological damage has also become a part of political evil. The confluence of the four axes of history – politics, economics, ecology and morality – is a particular feature of modern life. And the further forward this rhombus of history goes, the more obvious it is that ecology should supersede economics and moral judgement should trump political choice.

In recent times, post-colonial research has concentrated on the Global South, post-socialist research on the Global North – and both have contributed to our understanding of the natural history of evil. This book is Eurocentric and examines global commodities from a North European perspective. It focuses on the historical experience of Northern Eurasia, from England and Holland to Siberia, and refers only occasionally to events in China, Africa or the Indies. The North is just as global as the South. The rivers, bogs and trackless wildernesses of Eurasia are no less romantic than the high seas and deserts of the South. Living through the climate catastrophe, we feel a new power in the cold, mist-shrouded stories of the North – in the poems of Ossian, in Wagner's operas, in Tolkien's novels or, to give a current example, in *Game of Thrones*. But my book is concerned with real, not fictional history. Presenting a global picture of the rise and fall of resource-dependent empires, I often support my arguments by drawing on the historical experience of Russia. No more or less important than any other empire, the Russian state has been typical in its permanent reliance on the trade in raw materials; in its repeated crises which came with the switch from one resource platform to another; and, despite frequent setbacks, in its growing role in the external and internal colonisation of the human world.

New problems call for new ways of interpreting ancient arguments – and for acknowledging that some current ideas are obsolete while other long-forgotten theories are right up to the moment. Marx wrote, ‘primitive accumulation plays in political economy about the same part as original sin in theology.’[10] With similar irony, Walter Benjamin imagined ‘historical materialism’ as ‘a puppet in Turkish attire’ whose master is theology, ‘small and ugly and … out of sight’.[11] Indeed, the history of matter is interdependent with the history of the spirit. From Luther to Swedenborg, and from the medieval alchemists to the Russian Old Believers, religious thinkers and dissenters were involved in extracting, processing and interpreting the gifts of nature (see chapter 6). From silk to sugar, and from gunpowder to oil, many of these commodities had oriental origins, like Benjamin’s puppet.

The historian is a prophet looking backwards,[12] but economists and sociologists often believe in presentism: you can only understand the present within its own context. While I don’t entirely share this belief, neither do I agree with the kind of historicism that says that today’s news is a development of yesterday’s trends. The most important news is not a development – it is a fresh start. Material history focuses on situations of change, moments of danger, states of emergency. Following Benjamin, my position also combines the philosophies of moralism and naturalism. Evil has its roots in nature, and nature also limits it. But the choice is ours; we are making it here and now, as we always have done. We do not know the outcomes of our current choices, but we know the consequences of those that people made in the past. Paradoxically, it is the uncertainty of the future that makes historical experience relevant for the present. The world is the unity of human beings and nature; and, since we have failed to change the

world, now is the moment to understand how it works. In our gloomy age this is the task for a New Enlightenment.

The Age of Enlightenment culminated in a disaster. The Lisbon earthquake of 1755 shook the world, inviting a re-evaluation of the nature of evil. If God created the earthquake, then he is either not omnipotent or not good. Among the survivors is the hero of Voltaire's novel *Candide, or Optimism*. Candide, a sweet-natured youth, believes everything his tutor, the philosopher Pangloss, tells him: 'It is demonstrable, that things cannot be otherwise than as they are … Stones were made to be hewn … Pigs were made to be eaten … Individual misfortunes lead to the common good, so the worse such misfortunes, the better.' But then the tutor falls ill with syphilis and witnesses the death of 30,000 people in Lisbon. Candide flees to Eldorado, where golden fountains flow with rum, and then to the Dutch colony of Surinam. On a sugar plantation he meets a black slave, who lost his hand when it was crushed by a millstone. He tried to run away and had his leg cut off. 'This is the price at which you eat sugar in Europe,' says the black man. He doesn't know the word 'optimism', and Candide explains: 'it is the madness of maintaining that everything is right when it is wrong.'[13]

# Notes

* The word 'resources' comes from the Latin *surgere* (to rise up, to spring from) and the related word *resurgere* (to rise up again). With the prefix 're', this word optimistically implies that all 'resources' are renewable, but this is not the case. The term 'commodities' is generally used to include both natural resources and processed goods, but this implies a wholesale product on a mass scale. 'Raw materials' gives a more accurate

definition of everything that man extracts from the surface or the bowels of the earth.

* This idea, with reference to *The King's Two Bodies* by Ernst Kantorowicz, was first formulated by Fernando Coronil in his study of Venezuela, where oil becomes the state's 'second body' (Coronil, *The Magical State*).

## Notes

1 Tacitus, *The Annals*, Book 6, secs 13, 19; Panchenko, 'Tiberius i finansovyi krizis v Rime'.

2 Auty, *Resource Abundance and Economic Development*; Dunning, *Crude Democracy*.

3 Sraffa, *Production of Commodities by Means of Commodities*.

4 On the staple theory, see Innis, *The Fur Trade in Canada*, and Watson, *Marginal Man: The Dark Vision of Harold Innis*; on the fetishism of commodities, see Marx, *Capital*, and Pietz, 'Fetishism and materialism'.

5 Latour, *Politics of Nature*, p. 33.

6 Hardin, 'The tragedy of the commons'.

7 Cannan, 'The origin of the law of diminishing returns'; Rainert, *How Rich Countries Have Been Enriched*; Saito, *Karl Marx's Ecosocialism*.

8 Keynes, *Economic Consequences of the Peace*, in *Collected Writings*, Vol. 2, p. 6.

9 Two books were the most significant for the material turn: Diamond, *Guns, Germs and Steel*, and Mitchell, *Carbon Democracy*. See also Bennett, *Vibrant Matter*;

Miller, *Cultural Histories of the Material World*; LeCain, *The Matter of History*.

10 Marx, *Capital*, Vol. 1, p. 784.

11 Benjamin, ‘On the concept of history’, in *Selected Writings*, p. 389.

12 Ibid., p. 405.

13 Voltaire, *Candide*, p. 2.

# PART ONE
# HISTORY OF MATTER

Good history writing has always interwoven different peoples and disciplines. The link between resources and institutions lies at the deepest level of this interweaving. Social history aspires to reconstruct ‘history from below’, but it has usually ignored the very lowest level – raw materials. Endowed with their own life, each and every one of these commodities makes a rich and fascinating subject for historical study. Together with people, they have also been agents of our joint history. ‘For men and commodities are the real strength of any community,’ wrote David Hume.[1] Agency is always partial. No single agent is completely autonomous – neither man, nor nature, nor a sovereign ruler. A sack of grain, a bale of cotton, a barrel of oil – they all have their agency. The history of resources is the real history from below: you can’t go any lower. And this history is full of its own distinctive agency. It is not a reductive explanation of human experience. On the contrary, I wish to learn how to find partners in a grain of wheat, a fibre of hemp or a lump of coal.

Addressing a huge variety of natural resources, I will explore their economic, cultural and political lives from the bottom up – from the earth to the state. Each chapter takes four steps in this upward movement. First, we look at the inherent characteristics of the raw material. Second, we learn about the methods of processing it, which define the specifics of the labour required. Third, we switch our attention to the institutions which organise this labour and which derive income from this material. Fourth, we engage

with the political features of the state which depends on the given resource.

## Note

1 Hume, *Political Essays*, p. 124.

# ONE
# *Cry Fire*

Our forebears migrated from the African savannah about 70,000 years ago. Hairless skin and the ability to sweat from all parts of the body allowed them to adjust to living in the subtropics. They were not particularly swift but had stamina: over a long distance, a man could catch up with almost any mammal. Having settled in the wetlands and coastal areas, humans learnt to make use of sticks and stones and to domesticate animals. Climate change forced people to migrate in search of new spaces. They soon learnt to cross open water, to catch fish and to seek a better life.

## *Not slash, but burn*

Human migration northward was made possible by a revolutionary technology – the mastery of fire. Having learnt to walk upright, this particularly successful primate could now use his hands to strike a spark from a flint and set fire to dry grass. By gathering and burning the first non-edible resources – brushwood and reeds – people were able to control the temperature in their lairs or caves. Now that they were able to cook food over a fire, people consumed seeds, beans and bones that they couldn't digest raw. Practically everything that humans have made subsequently – terracotta and brick, bronze and iron, salt and sugar, petrol and plastic – they have made in collaboration with fire. In the myth of Prometheus, the hero steals fire from the gods, hides it in the hollow centre of a reed and carries it to humanity. The gods' revenge is long-drawn-out and cruel. All the details of the myth are

significant – from the hero on the frontier between two worlds to the humble reed, with which the whole story begins.

The mastery of fire was the first practical act in which brain was more important than brawn. After a fire, forests were more productive, there was more game and the predators disappeared. A fire in the hearth tamed humankind. Armed with fire, humankind could tame nature. These hunters, whose only weapons consisted of cudgels or sticks, burnt forests to create great swathes of natural golf courses. This is how the American prairies were created, and probably the Eurasian steppes as well. For their physical survival, each human being needs to consume between 2,000 and 4,000 kilocalories per day. The production of a daily portion of the modern, meat-rich diet takes approximately 10,000 kilocalories of solar energy. Human muscles convert food into work, but most of the energy we use comes from elsewhere. In ancient Rome the consumption of non-food energy, most of it through the burning of wood, reached 25,000 kilocalories per person. In the modern world the energy consumption per person is 50,000 kilocalories per day, and in developed countries it is five times higher.[1] In 1943, the anthropologist Leslie White defined culture as the harnessing of energy with the help of technology.[2] Solar energy, which reaches our wicked world straight from the nearest star, is available to human beings in various forms: wind, water currents, firewood, fossil fuel and food. No energy is produced by human beings; it all comes from the sun. The only exception to this rule of thumb is nuclear energy; perhaps that’s why it is difficult for humans to harness it.

We learnt to cut wood and plough the earth once we had acquired the ability to attach a stone tip to a wooden handle. Wood was abundant, but rare flint was needed for the tip. In axes, crude stone was replaced with flint in

about 4000 bce. Found all over Europe, flint axes and knives were produced in great quantities – about half a million every year. But there were very few flint mines. Axe heads originating from one flint deposit in the Alps have been found all over Western Europe. Axes from central Poland have been discovered 800 kilometres away.[3] So the earliest human tool, the flint axe, already combined two types of raw material – the easily replaceable stick and the precious flint, which was handed down from one generation to another, travelling huge distances on its way. The owners had to protect the sites where flint was found, and the first property rights developed. Others had to produce something of value to exchange: a flock of sheep, for example, or cured hides. This is how trade began.

For almost all of history, people lived in autonomous groups, communities or tribes. They fed themselves from the land on which they lived. When they had exhausted it they moved on to another plot and again burnt the forest. Fire helped to produce excellent harvests. Mature trees survived forest fires, and cereals or vegetables were sown around them. Field and forest existed side by side, and animals helped people clear the land. Horses and oxen hauled timber, pigs and sheep devoured grass and roots. It required about an acre of cleared forest to support one human being. Any growing population needed to expand the land available for burning and sowing. Like all technological revolutions, fire liberated people and reduced their dependence on nature. But no sooner had he achieved symbiosis with fire than bipedal man fell into the resource trap. In his quest for freedom and happiness, he was constantly destroying the very resource that made him prosper.

Groups of people moved from place to place looking for firewood. These people had neither maps nor even word-of-mouth information about their environment. When they

found a forest they could use, they settled there until they had burnt everything flammable. In need of timber, humankind migrated north, to the wooded tracts of Europe. But there were already similar creatures living there – the Neanderthals. Shorter but more heavily built than *Homo sapiens*, the Neanderthals were intelligent and aggressive. They lived in small communities, were capable of collective action and used fire and stone tools. They coped with the cold climate more easily than *H. sapiens*. Their brains were bigger than the brains of early modern humans, their sight was sharper, their muscles stronger. For five millennia, *H. sapiens* and Neanderthals lived side by side in Europe, mating and learning from each other. Then the Neanderthals died out. Archaeologists have found teeth marks from *H. sapiens* on their bones: early humans had eaten Neanderthals. The anthropologist Pat Shipman has proposed that the main difference between the Neanderthals and the ancestors of modern man was the symbiosis between man and wolf. *Homo sapiens* and wolves complemented one another. One species could track game; the other could kill it. One was swift-footed and had a superb sense of smell; the other had a big brain and tools. Hunting with dogs gave early humans their greatest advantage over Neanderthals.[4]

American archaeologists investigated adjacent settlements of humans and Neanderthals in the mountains of the Southern Caucasus. The main source of food there was the Caucasian goat. Both groups knew this animal’s seasonal migration routes and settled in the vicinity. They behaved more like breeders than hunters, eating only adult animals and leaving the juveniles to mature. The Neanderthals lived in smaller groups than the humans. Their tools were more primitive because they made them out of local stone. In the human camps the archaeologists found knives made of obsidian, the nearest source of which was 100 kilometres

away. With these knives, humans could split strong bones into needles.[5] These implements were highly prized and used over and over again for scraping skins and sewing them together, making clothes and shoes. These goods entailed a huge amount of labour, but they could be exchanged for other things such as obsidian. This is probably the first example of long-distance trade in human history, but the pattern was fully developed: a rare, distant natural resource was exchanged for products of human labour.

Having left their subtropical Eden, humans needed to dress in furs and skins. The Neanderthals had more subcutaneous fat and more body hair, and they did not need fur garments in the temperate climate. They could scrape animal skins but used them as bedding. In contrast to the human traders who exchanged sheep and skins for obsidian, the Neanderthals lived by subsistence farming. Along with dogs, trade gave humankind an advantage in its first battle for survival. Perhaps humans' symbiosis with wolves was connected to their ability to carry out trade. Hunting with dogs relies on the ability to relate to another creature who has different needs from your own. This is also the basis of trade.

## *Roman fires*

The level of harnessed energy reached a temporary peak in ancient Rome. The historian Ian Morris has used the number of kilocalories harnessed per head of population per day as 'the measure of civilization'.[6] Those religions that worshipped the sun as the ultimate source of life – the religions of the Egyptian pharaoh Akhenaton and the Persian prophet Zoroaster – understood this. Burning wood provides energy that can warm man and raise him up but