

# *Part 1*

WARFARE IN THE FIRST  
TWO MILLION YEARS:  
ENVIRONMENT, GENES,  
AND CULTURE



# 1

## Introduction: The ‘Human State of Nature’

Is war grounded, perhaps inescapably, in human nature? Does it have primordial roots in humans’ innate violence and deadly aggressive behaviour against their own kind? This seems to be the first and most commonly asked question when people ponder the enigma of war.

But how do we observe ‘human nature’? All animal species, except humans, have a more or less fixed way of life, which is predominantly determined by their genes, and which changes, if at all, only with the species itself in the relatively slow pace of biological evolution and can thus be meaningfully addressed as ‘natural’ for them. For this reason, animals have a zoology, an ethology (the science of animal behaviour), and, in geological time, an evolution, but they have no history. By contrast, humans evolved mammalian learning capacity to unprecedented heights and explosive potential. On top of their biological inheritance, they have evolved and pass on to their contemporaries and descendants the accumulated and ever more complex array of artefacts, techniques, modes of behaviour and communication, and belief systems known as culture. Vastly faster than biological evolution, cultural evolution has dramatically transformed and diversified the human way of life. It can be regarded as humanity’s most distinctive trait.

Humans have lived in a myriad of cultures, which have been constantly in flux, substantially different from one another and all, in a way, ‘artificial’. We

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have been carried to an almost incredible distance from our origins. As a result, extreme relativists, empiricists, and historicists have traditionally held that humans are almost infinitely elastic, questioning whether anything called 'human nature' exists in any meaningful sense. At most, it is agreed that nature and nurture, genes and the environment, biology and culture, 'hardware' and 'software' are closely interwoven and practically inseparable in the shaping of humans. Both components, and their wealth of interactions, have constantly to be kept in mind when one seeks to study the remarkable human evolution.

And yet, at the starting point of this interaction, there is still a very strong sense in which we can speak, for humans, about the 'state of nature' as something other than a seventeenth-century philosophical abstraction. During 99.5 per cent of the almost two million years of evolution of our genus *Homo*, all humans lived a fairly distinctive way of life, that of hunter-gatherers. Only 10,000 years ago in some areas, and even more recently in others—a brief moment in evolutionary terms—did humans turn to agriculture and animal husbandry. This change, which is discussed later, was a cultural innovation, involving scarcely any significant biological change. Thus modern humans evolved biologically over millions of years in adapting to the selective pressures of hunter-gatherer existence. In the anthropological literature, the concept of 'primitive war', which makes no distinction between hunter-gatherers and pre-state agriculturalists, is commonly used to describe 'original' warfare. Although this category has some value, it should be realized that in evolutionary terms it lumps together the aboriginal condition of all humans with a quite recent cultural innovation. Agricultural society, even more recently topped by the growth of the state and of civilization, is the tip of the iceberg in human history, the vast depth of which in time is obscured in most people's minds by the scarcity of information.

To be sure, human hunter-gatherer existence was never quite uniform. It varied in adaptation to diverse ecological niches, and these adaptations themselves evolved with the accelerating evolution of the genus *Homo* itself over its long period of existence. As the revolutionary advances in the molecular study of DNA have revealed, all humans living today are closely related and belong to the species *Homo sapiens sapiens*, whose remains have been found in Africa from more than 100,000 years ago. The celebrated cave and rock art and other exquisite artefacts of *Homo sapiens sapiens*, which

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reached new heights during the period known as the Upper Palaeolithic, or Upper Old Stone Age, between 35,000 and 15,000 years ago, are cultural evidence—in addition to the anatomical one of skeletal remains—of a mind that is indistinguishable from ours in its capacity. Varieties of archaic *Homo sapiens* date back to up to half a million years ago. They were preceded from about two million years ago by *Homo erectus*, the first human species that led a hunter–gatherer existence throughout much of the Old World. In technical sophistication, tool refinement, use of fire, level of communication, and ability to plan ahead—to mention just some variables—later hunter–gatherers were more sophisticated and successful than their biologically more primitive predecessors in the genus *Homo*.<sup>1</sup> I touch on some of the differences in hunter–gatherers’ existence that are relevant to the subject later. Still, there is also a great deal of similarity and continuity in the hunter–gatherer way of life, extending from the origins of the genus *Homo* to the present.

So, did humans, in their evolutionary natural environment and evolutionary natural way of life as hunter–gatherers, fight? Was fighting an intrinsic aspect of their particular mode of adaptation, moulded by selective pressures for millions of years? In other words, has their evolutionary path made warfare ‘natural’ to humans? Or, alternatively, did fighting come later, only after culture really took off, and is it therefore ‘unnatural’ to humans? The two antithetical classical answers to this question have been advanced in the seventeenth and eighteenth centuries—after the Europeans’ great geographical voyages brought them into contact with a vast variety of aboriginal peoples—by Thomas Hobbes and Jean-Jacques Rousseau. For Hobbes, the human ‘state of nature’ was one of endemic ‘warre’, murderous feuds for gain, safety, and reputation, a war of every man against every man, which made life ‘poore, nasty, brutish, and short’ (*Leviathan*, 1651, 13). People were rescued and elevated from this condition only by the creation of the state, the coercive power of which enforced at least internal peace. By contrast, according to Rousseau’s *Discourse on the Origins and Foundation of Inequality among Mankind* (1755), aboriginal humans lived sparsely and generally harmoniously in nature, peacefully exploiting her abundant resources. Only with the coming of agriculture, demographic growth, private property, division of class, and state coercion, claimed Rousseau, did war, and all the other ills of civilization, spring up.

So suggestive and persuasive were both these views of the past that they

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have remained with us, with little variation, since their inception. During most of the nineteenth century, the period in which European supremacy and belief in 'progress' and in the gradual uplifting ascent of civilization were in their apogee, it was mainly the Hobbesian image of the 'brute' and the 'savage' that dominated, colouring ethnographic reports as westerners expanded their rule over the globe. Conversely, during the twentieth century, as disillusionment with 'progress' and civilization grew and European supremacy began to wane, it was the Rousseauite idyllic picture of the aboriginal that increasingly dominated anthropology.

The past decades have seen an explosion of field and theoretical work on themes related to this subject, which have greatly enhanced our knowledge and which call for a new comprehensive attempt at finally resolving the enigma. Three sources in particular have yielded a wealth of information and insights: first, broad empirical context for comparison and contrast is offered by the study of animal aggression and fighting; second, empirical evidence relating to the question of fighting among hunter-gatherers is provided by the study of hunter-gatherer populations that have survived to the present or were closely observed by westerners in the recent past; this evidence is supplemented by archaeological findings relating to prehistoric hunter-gatherers; and, third, a general explanatory perspective is suggested by evolutionary theory.

## OF BEASTS AND MEN

During the 1960s, the question of why humans fought appeared to have become more perplexing than it had ever been before, as a number of separate and sometimes contradictory ideas from within and on the fringes of the scientific community regarding animal and human aggression struck public consciousness with tremendous effect.

One such idea was advanced by popular writer Robert Ardrey, in his *African Genesis* (1961) and other best-selling books. At that time, zoologists believed that our closest relatives, the chimpanzees, were vegetarian, non-violent, and non-territorial. It was an image that resonated well with the 1960s' creed of 'return to nature'. Ardrey claimed that it had been our ancestors' adoption of hunting and meat eating that had turned them into

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‘killer apes’, predators who regularly turned their new skills and weapons against their own kind. The idea had been suggested to him by palaeontologist (researcher of fossilized bones) Raymond Dart, who had interpreted skull wounds in specimens of *Australopithecus* as weapon inflicted. Cerebrally ape-like, but erect and bi-pedal species, the *Australopithecians* are believed to have been the ancestors of the genus *Homo* and its link to the apes. The hominid line is estimated to have diverged from the chimpanzee some seven million years ago, and *Australopithecians* have been found to have lived until one million years ago. Dart’s theory did not hold long, however. Since the 1960s palaeontology has advanced by leaps and bounds. We now know infinitely more about *Australopithecians*: they were predominantly vegetarians; no stone tools related to them have been found; and the celebrated skull wounds are believed to have been caused by a leopard. This, however, has not necessarily invalidated the claim about *humans* becoming killers with the adoption of hunting and meat eating. This idea was advanced by the anthropologist S. L. Washburn and popularized by the zoologist Desmond Morris in his best-selling book, *The Naked Ape* (1966).

Other extremely influential ideas about animal and human aggression were advanced by Nobel laureate and co-founder of ethology, Konrad Lorenz, in his *On Aggression* (1966; German original 1963). In response to Ardrey, Lorenz pointed out that, among animals, fighting—that is, violence within the species (intraspecific)—bore little relationship to predation. Contrary to popular ideas, herbivores fight among themselves no less, and sometimes more, viciously and frequently than carnivores. However, Lorenz claimed that animals very rarely fought members of their own species to death. In the hunter–prey relationship, killing is necessary because consumption of the prey is the rationale of the whole exercise. By contrast, intraspecific violent conflict is mostly about access to resources and females. If one adversary stops the fight by retreating or signalling submission, further violence becomes unnecessary. According to Lorenz, signals of surrender and submission serve as biological cues that turn off the victor’s aggression. Furthermore, if the adversary’s will, rather than life, is the target, demonstration—which has a smaller role in the hunter–prey relationship—is almost as important as brute force. The adversary can simply be intimidated by threatening displays of size, strength, and vigour.

Lorenz’s expertise was the varieties of animal displays of strength and signals of submission. He termed the resulting form of animal intraspecific

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fighting ‘ritualized’. The term is misleading. Ritual implies merely going through the motions. Here, however, was a high-stakes, high-risk-high-gain, conflict involving both display and actual force, and intended to deter or enforce. At any rate, whereas Ardrey drew a divide between humans and chimpanzees in respect of deadly fighting, Lorenz’s claims drew an even sharper divide between humans—who regularly kill each other in fighting—and all other animal species. Human violence now appeared unique and, therefore, enigmatic, and called for some special explanation. Lorenz, for instance, suggested that in evolutionary terms human weapons, and hence lethality, developed too recently and too fast for the mechanisms of intraspecific restraint to catch up. In any case, the idea that ‘we are the most ruthless species that has ever marched the earth’ became widely accepted.<sup>2</sup>

As it happened, some of the most fundamental ideas that stood at the basis of the 1960s’ influential theories have since been all but reversed by the scientific community. To begin with, field study—pioneered by Jane Goodall at Gombe, in Tanzania, from the mid-1960s, and joined by other researchers since—for the first time provided a close, sustained, and reliable scientific observation on the chimpanzees’ way of life in their natural habitat. The findings have been revolutionary. For instance, it has been revealed that rather than being vegetarian, chimpanzees (and other primates) crave meat as a prime food. Primarily, although not exclusively, males, acting in co-operation, isolate, hunt, and avidly eat other animals, mostly monkeys and small mammals, but also straying, weak or infant alien chimpanzees. (Savannah baboons also hunt, if somewhat less successfully.) Furthermore, the chimpanzees’ group—several dozen strong and consisting of males and females with their infants—has been found to be highly territorial. The males patrol the boundaries of the group’s territory and fiercely attack any intruder, including foreign chimpanzees (but not lone females coming to join the group). They also aggressively raid foreign territories.

Goodall documented a conflict between two groups that lasted several years. The males of one of the groups invaded and gradually, one by one, isolated and killed first the males and then the other members of the other group, finally annexing its territory. Instances of murderous aggression, even by females, especially against infants that were not their own, have also been observed *within* the group. Finally, on occasion, chimpanzees would threaten with, beat with and throw sticks and stones.<sup>3</sup> From being humans’ idyllic antithesis in the 1960s’ culture, the friendly, playfully naughty, and



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intelligent, but also jealous, quarrelsome, killing, and even warring, chimpanzees now increasingly mirror what we have commonly thought about ourselves. There is nothing particularly exceptional about humans in this respect.

Not only the divide between humans and chimpanzees with respect to fighting and killing but also the much broader divide between humans and the rest of the animal kingdom has been erased. Rapidly expanding research has drastically altered scientific perceptions. In contrast to Lorenz's claim, intraspecific killing has been found to be the norm and one of the main causes of animal mortality. It is true that between mature males fighting for access to resources and females, the weaker or loser normally decides at some stage to cut its losses and break off the fight, either by displaying submission, if the fight takes place within a group of social animals, or by retreating. The same applies to intergroup fighting in social animals, such as lions, wolves, hyenas, baboons, and rats. Nevertheless, severe wounds inflicted during a fight are often a cause of mortality, either directly or by diminishing the animal's capacity to obtain food. In addition, beaten, deprived, and submissive animals have been found to be more susceptible to disease and to have considerably shorter life expectancy. Furthermore, by far the most vulnerable to intraspecific violence are infants. For example, a new leader of a lion pride will systematically kill all the cubs of the previous monarch, despite their mothers' desperate efforts to hide them. It does so in order to enable the lionesses to come into oestrus and have its own offspring, which is not possible as long as they raise other cubs.

Langur monkey and gorilla males have been observed to behave in a similar manner. Solitary animals, such as the rest of the big cats and bears, try to do the same against violent maternal resistance whenever they find the opportunity. Presumably for similar reasons, chimpanzee males have also been observed to kill infants that are not their own when the group is joined by a nursing mother. Even more widespread is the intraspecific elimination of alien infants, chicks, and eggs, carried out in order to get rid of actual or potential competition for resources or in cannibalism. This cause of mortality is particularly high among species with an extreme so-called 'r' strategy of reproduction, which maximizes the number of offspring rather than parental care of fewer offspring ('K' strategy). Finally, young siblings fiercely compete for nourishment. In some species, for instance among eagle chicks, but also among rabbits and other seemingly harmless creatures, this

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competition regularly results in merciless fighting in times of food shortage, when the strong might kill, and often cannibalize, the weaker siblings.<sup>4</sup> Nature documentaries have vividly brought all this home to millions of television viewers, completing the demise of the 1960s' perceptions.

Leading authorities have estimated that the rate of intraspecific killing among humans is similar and in some cases greatly inferior to that of other animal species. According to one of them, it is in fact many times inferior to that of any mammalian species studied.<sup>5</sup> In any case, the similarity is striking: most killing in the animal kingdom is carried out for prey, as it is with humans (animal hunting), but there is also substantial killing of conspecifics—one's own kind—in competition for the opportunity to prey and mate and for other vital activities, as it is with humans. Thus in a few decades, the scholarly picture has changed drastically. At least in the *scale* of intraspecific killing, humans have lost their supposed uniqueness and are no longer regarded as an exception in killing their kind.

To be sure, the scale and form of killing in nature are not uniform among all species. They depend on each species' particular mode of adaptation, especially its forms of subsistence and mating, and of course they also vary between individuals within a species. For example, although the common chimpanzee (*Pan troglodytes*) has been found to resemble humans in its violent behaviour, the more recently discovered pygmy chimpanzee or bonobo (*Pan paniscus*) exhibits an almost idyllic life of free sex and little violence, much as in the 1960s' perceptions of the common chimpanzee.<sup>6</sup> Thus human fighting has to be examined in context and detail. Why and how did humans fight in the 'state of nature'? How did this stand in comparison with patterns prevailing in the animal kingdom? And even before that, did hunter-gatherers fight at all? Perhaps humans in the state of nature are exceptional, and closer to the bonobo, in their avoidance of fighting and killing—quite the opposite of the view that we have just discussed? Who was right after all—Hobbes or Rousseau? Surprisingly, despite the wealth of evidence, this last is a question about which anthropologists have failed to reach a definite conclusion. It must be settled first.