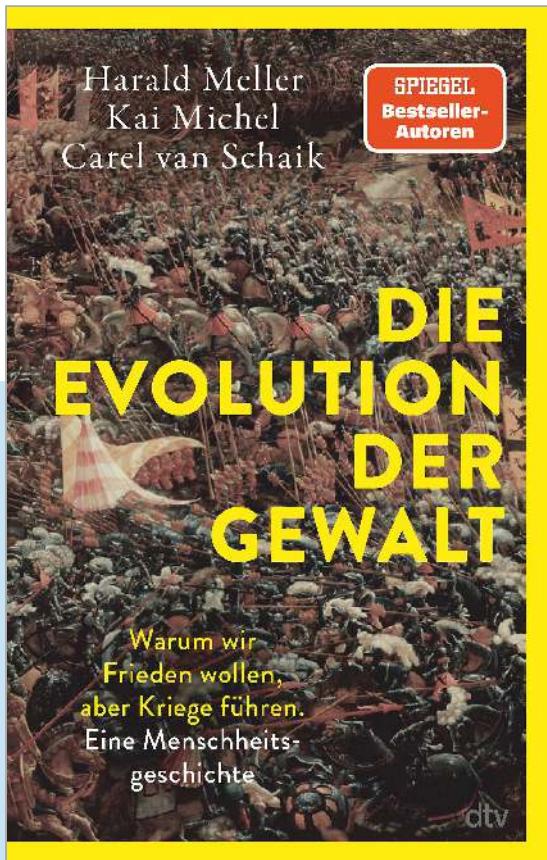


# H. Meller, K. Michel, C. v. Schaik: The Evolution of Violence – Why We Want Peace But Are Waging Wars

- Provides orientation on the current topics of war and violence in the world
- Written by three successful non-fiction authors with extensive expertise



Harald Meller, Kai Michel, Carel van Schaik  
**The Evolution of Violence – Why We Want Peace But Are Waging Wars**

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## Why war is not fate

The unimaginable has occurred: War is back – and it is threatening us all. Was the long peace in Europe just a brief interlude? Are we doomed because we simply cannot counteract our warlike nature? It's high time to trace the evolutionary roots of violence. These three best-selling authors set off to tell a different kind of history of humanity. They present current research on chimpanzees and bonobos, trace the archeology of murder and manslaughter, and show how war has made despots and states, but also great gods. Their message: We are not condemned to war, but if we are not careful, we can easily fall victim to it.

**Harald Meller** is one of the most prominent archaeologists in the world. As a state archaeologist for Saxony-Anhalt, he saved the Nebra Sky Disk from criminal circles despite considerable personal risks. Meller wrote the bestsellers, *The Sky Disk of Nebra*, *Reach for the Stars*, and *The Mystery of the Shaman* with Kai Michel.

**Kai Michel** is a historian and literary scholar. Working with Carel van Schaik, he read the Bible as a Diary of Humanity; together they presented an award-winning analysis of the invention of gender inequality in *The Truth About Eve*, and explained why we are living in a state of emergency in *Being Man*.

**Carel van Schaik** is a behavioral scientist and evolutionary biologist. He researches the roots of human culture, cooperation, and intelligence in apes and spent many years observing orangutans in the jungles of Indonesia. He was professor at Duke University in the USA and professor of biological anthropology at the University of Zurich, where he was director of the Anthropological Institute and Museum as well.

Sample Translation  
By Sharon Howe

Harald Meller, Kai Michel, Carel van Schaik:

**The Evolution of Violence**

Why We Want Peace but Wage War: A History of Humanity

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### From the Death Pit

Afterwards, their naked bodies were left behind on the battlefield. Not only had their lives been taken from them, but their clothing, boots and all their possessions were gone too. Robbed and broken, the forty-seven men had been thrown into a mass grave. Some still had lead bullets in their heads. There was nothing left to distinguish friend from foe.

At first, the peasants tried to establish some kind of order, but they ended up simply throwing the corpses into the pit. Except, that is, for the last two bodies, which they placed on top in the attitude of Jesus on the cross. One lay on his back, arms outstretched, unseeing eyes looking to the heavens. The other lay on his stomach looking down through the mass of bodies towards hell. Were the peasants making a statement, a memento mori for all eternity? Or was this merely a blasphemous comment on a war that had been waged on both sides in the name of God, but had cost more than six thousand lives on that day alone?

In 2011, a party of archaeologists led by one of the authors of this book stumbled on the mass grave of Lützen. This is where, in November 1632, one of the key battles of the Thirty Years War was fought between the Protestant army, under the Swedish King Gustavus Adolphus, and the Imperial troops of the Catholic League, under Albrecht von Wallenstein. Here, on the ancient Via Regia between Naumburg and Leipzig, an estimated 36,000 soldiers came face to face.

While the Swedish ruler lies to this day in a marble coffin in Stockholm side by side with other kings, and has a memorial church dedicated to him near Lützen, the countless thousands of ordinary soldiers were forgotten – until archaeology rescued forty-seven of them from oblivion.

Their grave is the only one discovered in Lützen. Perhaps it is the only one that has survived. In those days, graves of the fallen were opened and their skeletons ground down in bone mills for fertiliser. Saltpetre makers, too, dug up corpses in order to produce – of all things – gunpowder. Nearly 200 years later, the sugar industry bought the bones of the Waterloo dead to give sugar beet the desired whiteness.

The mass grave at Lützen, by contrast, remained untouched for nearly 400 years. It was excavated in a block, transported to the State Museum of Prehistory in Halle and preserved whole. Anthropologists examined the skeletons and were able to partially reconstruct their fate: the soldier lying face down in the pit, for example, had been hit by a bullet. It had penetrated his left temporal bone, and fragments were still stuck in the adjacent cranial bone. Aged between 40 and 50, he would have been a veteran warrior, as healed wounds on his face and forearm confirm. He was also in the advanced stages of syphilis. Isotope scans of his teeth and bones suggest that he was from the more southerly part of Scandinavia, and probably belonged to the Swedish troops.

The second man at the top of the pile – a good twenty years younger – had been his enemy. His dark teeth reveal excessive tobacco consumption. In his youth, he had broken his thighbone and the break had been badly set, leaving his left leg a hand's width shorter than the right one. It would have been impossible for him to serve anywhere other than in the cavalry. He must have fallen from his horse during the Imperial army's attack on the Swedish foot soldiers and died after being stabbed in the belly with a sword.

Here, then, lay mutual enemies united in death, victims of one of the cruellest wars in the history of humankind. But even they are just the tip of the iceberg. The Thirty Years War was no

respecter of the civilian population. Whole swathes of land were devastated and depopulated. The total death toll is estimated at eight million or more; some historians put it significantly higher.

Among those fatally wounded in Lützen was Gottfried Heinrich zu Pappenheim, a field marshal in the service of the Catholic League. After failing to capture the Dutch positions around the city of Maastricht in 1632, he withdrew and plundered the territories of his own allies instead. The year before, Pappenheim's troops had been at the forefront of the sacking and razing of Magdeburg. This city on the Elbe had been home to 35,000 people before the onslaught; afterwards, less than 500 remained. Ever since then, "Magdeburgisation" has been a synonym for total devastation and ruthless carnage. Although famous for his philosophical education, Pappenheim spread nothing but death and terror. In the *Theatrum Europaeum*, a history of the German-speaking lands dating back to the 17th century, these events are recorded thus: "Then the Pappenheimers/and the Walloons alike/did rampage in a most unchristian manner worse than Turks/... they cut down both women and babes/even pregnant women in houses and churches."

It is possible, then, that the soldier at the top of the Lützen grave was one of Pappenheim's cavalrymen; perhaps he too had taken part in the slaughter of women and children in Magdeburg. The bulk of the buried, however, were soldiers of the Blue Brigade – an elite unit in the service of Pappenheim's enemy Gustavus Adolphus. The youngest of them was barely sixteen years old.

These soldiers' bones tell a tale of terrible suffering and violence. Of scurvy and rickets, tuberculosis and parasitic infections. Of countless poorly healed wounds. Almost half had suffered shots to the head, the majority probably from a range of two to five metres. This was combat at close quarters. Now the forty-seven are set to return to the battlefield thanks to a new

museum, “Lützen 1632”, which is currently being built in their memory. The aim is to bring all who visit face to face with the horror of war.

For some – namely those responsible for future wars – the battle was a lesson learnt.

Pappenheim himself was so battle-scarred that he was nicknamed “Schrammenheinrich” (= Scarface). Likewise, Gustavus Adolphus had plunged into the fray at the head of his cavalry regiment in order to lead his people to victory. During the battle, a bullet from a musketeer shattered the king’s left arm. He was then shot in the back with a pistol, fell from his horse and was stabbed multiple times with a rapier before being shot in the head by a cuirassier. From then on, generals rarely ventured in person onto the battlefield. For a while, they continued, like Napoleon, to direct their armies from the safety of a hilltop. Since then, however, they have remained behind the thick walls of their palaces or bunkers, waging wars by sending others to their deaths. Why do human beings put up with this?

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Four hundred years after the battle of Lützen, the world’s mass graves continue to fill up with bodies, ensuring a ready supply of work for the archaeologists of the future. Given the shocking and disturbing reports from today’s battlefields, the obvious question is: why have we not, once and for all, declared war on warfare? One doesn’t even have to be particularly inclined to pacifism to wonder at this. Violence against others is, quite simply, a declaration of bankruptcy on the part of all humanity. It is unworthy of a species as proud of its rationality as *Homo sapiens*. War is a scandal.

This question is all the more urgent at a time when notable war theorists and commentators such as the political scientist Herfried Münkler are warning of a return to the kinds of violence seen during the Thirty Years War, when marauders roamed the land raping and pillaging, burning and

murdering all before them. Is war a beast that is now rising up again and breaking free of the shackles imposed on it by international humanitarian law?

Given all this suffering, the brunt of which is borne by the weakest of the weak, it is astonishing that we don't do for war what we did long ago for climate change: that is, to establish a global alliance of states committed to its prevention. In the case of global warming, there is a broad consensus that the problem is largely man-made. An international alliance of scientists and politicians has dedicated itself to exposing the causes of climate change and developing strategies to halt its progress. At regular mega-conferences accompanied by a huge media presence, the global community is making great efforts to implement a collective climate policy. Why can't something similar be done to eradicate organised killing? Why does the notion that war is unavoidable still persist?

True, we have the UN Security Council, the Nobel Peace Prize, international agreements, and peacekeeping measures. For a good eighty years, the United Nations Charter has called upon all member states to "refrain... from the threat or use of force against the territorial integrity or political independence of any state", except in the case of self-defence or sanctions agreed by the UN Security Council. But the idea of calling time on war once and for all? Not a chance.

Without wanting to diminish in any way the progress achieved so far, research into conflict prevention has to date been marginal in comparison with climate research, and has received little public attention. "In the majority of Western universities, the study of war is largely ignored", the historian Margaret MacMillan laments, and the sociologist Arno Bammé likewise describes war as a "blind spot" within the social sciences. His colleagues Hans Joas and Wolfgang Knöbl have even referred to a kind of social amnesia when it comes to war.

How can this be? The existential urgency of understanding the origins of collective killing

should be beyond question: nothing in the past – apart from epidemics – has cost more human lives and had more terrible consequences for societies and the environment. Even in the absence of an actual conflict, the cost of war is astronomical, with defence budgets devouring unimaginable sums of money. Wars are the main source of refugee flows and serve to aggravate the climate crisis. Organised crime, too, thrives in this supreme state of emergency. And we haven't even mentioned the real Damocles sword hovering above us: nuclear warheads have the potential to wipe out life on Earth altogether. Why, then, are we not doing our utmost to finally pension off this deadliest of the Horsemen of the Apocalypse?

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The fact that such ideas invite the accusation of boundless naivety points to the fundamental problem. Unlike in the case of climate change, there is a perception that wars – though waged by men – are not man-made – that is, in the sense of a cultural product we could eliminate. The acute sense of helplessness in the face of the overwhelming persistence of war is noticeably often accompanied by the fatalistic notion that we can only do something about it in isolated cases at best, as war is simply man's destiny.

The most prominent individual to voice this idea was the then US president Barack Obama in 2009 – ironically enough, in his acceptance speech on receiving the Nobel Peace Prize: “War, in one form or another, appeared with the first man. At the dawn of history, its morality was not questioned; it was simply a fact, like drought or disease – the manner in which tribes and then civilizations sought power and settled their differences.”

All this feeds into the dominant view that there have always been wars, and that they will therefore never go away. Warfare is considered part of human nature, the normal condition of *Homo sapiens*. After all – as Aristotle was the first to point out – humans are a political animal, a

*zoon politikon*, and war, as Clausewitz put it, is nothing but the continuation of politics by other means. When Albert Einstein quizzed Sigmund Freud on the origins of war, Freud replied: “Conflicts of interest between man and man are resolved, in principle, by the recourse to violence. It is the same in the animal kingdom.”

After all, what were our school history lessons but an almost never-ending series of battles? And weren’t its protagonists those “great men” who proved the hardest hitters? From the oldest epics of humanity – Gilgamesh, the Iliad, the Odyssey – through the Bible and Shakespeare’s plays to *The Lord of the Rings*, *Game of Thrones*, and even *Fourth Wing*: what else dominates human stories but murder and homicide?

At first sight, archaeology doesn’t appear to have unearthed anything more hopeful, if the latest finds are anything to go by. Recent excavations in Siberia have revealed one of the world’s oldest fortresses, with a moat, earthen wall and palisades built by hunter-gatherers as long as 8000 years ago. In Vráble, Slovakia, archaeologists found thirty-eight skeletons in the moat of a 7000-year-old settlement: all except a small child were headless. An examination of twelve severed hands from the Palace of Avaris in Egypt shows that these were trophies taken from vanquished enemies of the Pharaoh. And in the mysterious sacred Stone Age site of Karahan Tepe in Turkey, archaeologists stumbled on a larger-than-life statue of a man holding his erect penis in his hands. Beside it is a sculpture of a vulture. Is this the old Adam, the progenitor of all barbarism, a 10,500-year-old idol representing the “toxic masculinity” that is today held responsible for rampant violence?

Finds like these conform to many people’s intuitive certainties about what their species is and always will be like: that is, not very nice. Hence their unfavourable view of our prehistoric ancestors: didn’t those cavemen go around clubbing each other to death? For a long time, we

could comfort ourselves with the thought that, although the philosopher Thomas Hobbes may have been right that “man is a wolf to man”, we live in a more civilised age nowadays in which we have learnt to control our dark side. War, we believed, was something antiquated, primitive, that these days only afflicts, at most, those parts of the world that were long described as “underdeveloped”, if not “savage” or “barbarian”. Consequently, it was the job of the West to act as global policeman and keep the peace in the rest of the world. War was conducted exclusively in the form of quick, “clean” operations designed to bring the furthest corners of the world to its senses.

In recent years, this attitude has been exposed as illusory. War has once again reached our privileged shores, at first in its “uncivilised form” of terrorism, and meanwhile also in the traditional form of combat between state armies. All around the world, countries are strengthening their arsenals, and the arms industry is booming. Western societies are already being urged to prepare for war and test their defence capabilities.

But if war is man’s inescapable destiny, what else can we do but resign ourselves to it – and invest in tanks, bunkers and kamikaze drones? The sense of impotence among media commentators is palpable. And that is why it is high time for an evolutionary and archaeological review of the situation. We need solid ground beneath our feet. To that end, this book will reconstruct the circumstances surrounding the evolution of violence and the birth of war, in order to demonstrate that human beings are not doomed to armed conflict.

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We have touched on one of the key reasons why so little research has been undertaken to date into the roots of war. If it really came into the world with the first humans, then the question as

to its origins doesn't arise. But that would imply that warfare is deeply ingrained in our biology. This view of war as eternal has been expressed in recent times by some high-profile voices. For that reason, many cultural and social scientists steer clear of it and content themselves instead with generalisations such as "wars are one of the basic phenomena of inter-human relations" and, "irrespective of time and space, deeply entrenched in human nature" (Bammé) – without further elaboration.

Underlying this tendency is the fear of resorting to "biologism": that is, describing humans and human societies as being determined by their genes, and thereby legitimising war as "natural". Then there is the added sensitivity around the fact that warfare is, in terms of its actors, a largely male activity – and it is true that there are striking gender differences when it comes to violence. By pursuing the question of the evolutionary roots of war, then, are we not perpetuating gender stereotypes and confining women to the role of victim?

Because evolutionary theory continued until well into the twentieth century to promote social Darwinist positions that seemed custom-made to legitimise predatory capitalism and the law of the jungle, as well as male and Western dominance, a kind of "evolution taboo" arose: that is, a rejection of all biological and evolutionary explanations of human behaviour and societies.

What was once a rational refusal to trust tendentious biology now runs the risk of degenerating into ignorance. Attitudes to humanity's evolutionary roots have changed radically. No one believes in determinism any more. Humans are not slaves to their genes. On the contrary, *Homo sapiens* is, behaviourally speaking, a hugely flexible and adaptable species. Humans can only be understood in terms of the almost indistinguishable interplay of culture and nature.

What makes the evolution taboo so disastrous is that it plays into the hands of war. Ignoring evolution makes war appear eternal. By focusing exclusively on the period of history (5000

years or so) for which written sources are available, and during which people have lived in separate states, we create the impression that war has always existed. But this only takes into account one percent of human history – and that happens to be the one percent in which war was already well established. As such, it is impossible to identify the factors responsible for its emergence. This reduction serves to perpetuate a misanthropic illusion detrimental to us all: namely, that humans are inherently warlike creatures. It is no coincidence that the autocrats and populists of this world are so keen to invoke the violence of human nature in order to justify their strong-arm tactics.

It is vitally important to consider the remaining 99 percent of human history, and to have a scientifically sound foundation we can draw on in order to empower us. One of the key arguments of this book, therefore, is that we have yet to properly understand the peculiar nature of war. The assumption that we wage wars because it is programmed into *Homo sapiens*' DNA is as outmoded as it is inaccurate. We should stop defaming our own ancestors.

This is by no means to imply – contrary to a popular misunderstanding – a romanticisation of prehistory, of the kind often associated with Jean-Jacques Rousseau. It is not about painting our evolutionary past as a model of peace, or claiming that humanity is essentially good. That it has, from time immemorial, had a violent side, is perfectly obvious. How else could we explain how war came to be a virtually universal phenomenon that can still flare up anywhere, any time?

Humans must have an evolutionary substrate for it to act upon.

Our nature is strangely ambivalent in this respect: on one hand, humans find it hard to kill members of their own species. They have a robust aversion to it, except in the case of psychopathic personality disorders, extreme desensitisation or exceptionally severe emotional stress. We are anything but natural born killers. Otherwise people wouldn't flee war; instead,

they would be falling over themselves to get to the front.

On the other hand, however shocked and appalled we may be by the latest wars and their atrocities, we like nothing better than to spend our leisure time consuming horror, with all its monsters, zombies and vampires. From the Sunday night thriller to true crime podcasts, from first-person shooter games to romantasy novels: nothing grips us more than murder, nothing titillates us more than mutilation, torture and destruction, with fire-breathing dragons a particular favourite. We relish epic battles, whether against the Orcs of Mordor or the Night King's army.

And if Ridley Scott were to make a film entitled *Lützen 1632*, that too would be a box office hit.

What dark appetites are at work here?

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Such expeditions into the heart of darkness call for more than one scientific discipline. First, we need evolutionary anthropology and primatology to reveal our animal ancestry and uncover the interplay of biological and cultural evolution, not least through comparisons with our closest relatives: chimpanzees and bonobos. Second, we need archaeology to supply the tangible evidence necessary to reconstruct past acts of violence. Third, we need history and religion to explain how war, murder and killing were able to become a mark of civilisation. Consequently, this book is the work of a team of authors from each of these areas who have proven their expertise through primate field research, excavations and battlefield archaeology, and exhibitions on the topic of war, and who have written a number of books and essays on subjects relating to the evolution of violence.

Ethnography has its place here too, of course, and has valuable insights to contribute. But these should always be treated with caution. Because our knowledge of deep history was, for a long time, extremely sparse, it was all too easy to fill in the gaps with reports on indigenous cultures.

This often led to a vicious circle, with researchers projecting onto the past whatever seemed to suit current ethnographic trends. According to the fashion, they could reach for the warlike Yanomami of South America or the Batek people of the Malay Peninsula, who reject all forms of violence amongst themselves and against foreigners. There is one thing ethnography can tell us for certain, however: as the diversity of lifestyles observable around the world demonstrates, humans are wedded neither to war nor to peace.

It takes a combination of disciplines to shine a light into the dark recesses of our personality and history. In this spirit, we will take a good look at our animal cousins, back up our reconstructions of the evolution of violence – particularly in a prehistoric context – with archaeological evidence, and draw on investigations relating to specific crime scenes. Unfortunately, the existing research into our early history has a strongly Eurocentric bias, and it is debatable how far we can generalise from the results. But we hope to compensate for this through our broad approach. Moreover, our focus on the genealogy of Western warfare is justified by the fact that this is the violence matrix that has been imposed on the world, and that we therefore need to understand first and foremost.

Not least, we hope to bring into play aspects that are all too often ignored. The mass grave at Lützen, we remember, contains the remains of forty-seven people – all of them male. So what does war do with women? And why were these soldiers more disposed of than buried, while the king who sent them to their deaths has a church dedicated to him in the neighbouring village, where he is worshipped as a saint and saviour of the faith? Does that make humans warmongers? Really? All of them?

What this book is not is a history of war, all gunsmoke and battle noise. Its purpose is to set the evolutionary record straight by presenting, based on the latest research and our own studies, a

case history of war to date. We seek to expose the evolutionary roots of aggression and violence and trace their proliferation over the course of human history. That way, we will come to understand the conditions in which wars erupt, and who the real warmongers are. It takes a correct diagnosis to develop effective treatments and ensure successful prevention – and to do so without appearing politically naïve.

[...]

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## **TWELVE LESSONS**

So what should we conclude from our investigation into the evolution of violence? First, that there are no easy solutions when it comes to reducing violence and warfare. The aim of this book was to present a diagnosis as a basis on which to develop effective therapies. That is the job of politicians. But this much we can say: however terrible the latest wars may be, there are no grounds for fatalism. Thanks to the discoveries of various branches of science, we now have, for the first time, a solid foundation on which to make our case: namely, that it is anything but unworldly to want to push back against collective violence.

We began by posing one of the key questions to be considered: how deep do the roots of war go? Right down to our first – biological – nature? Or only to our second – cultural – nature? The answer is clear: war has become second nature to us. Although we think of it as natural, it is in fact a purely cultural product.

With this in mind, we will end this book with twelve lessons – derived from evolution and supported by archaeology – that make the case against war. Though hardly likely to defeat it,

they do at least rob it of its legitimacy – rather like the emperor’s new clothes in the famous fairy tale. Only this time it doesn’t take a child to expose it for the scandalous hoax that it is.

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1. War is not eternal. In terms of human history, it has been with us for an astonishingly short time. It is, in other words, an anomaly, an aberration; for 99 percent of evolution, humans got by without it. This proves that we have the potential to live in peace. That doesn’t mean that all violence and aggression would cease, though. Humans are no angels.

2. “You can’t change human nature!” This common objection arises from a fear that there is something slumbering in the depths of the human psyche that makes us permanently susceptible to war. But the statement “humans make war” is fundamentally wrong. The truth is: “humans want peace”. It has always been the few who have forced the many to go to war, or seduced them into doing so. The overwhelming majority have been despots, autocrats, demagogues, populists and dictators all too ready to see themselves as instruments of God’s will or a national, *völkisch* destiny. And they have been almost exclusively male. It is time we stopped being taken in by them.

3. Consequently, there are no grounds for “human self-contempt” (Marshall Sahlins). We are not Cain’s children, and are neither evil by nature nor slaves to our aggressions. Violence is by no means our only conflict resolution strategy. Like other animals, humans weigh up on a case by case basis whether to resort to violence to settle their differences. As a rule, they choose other options. Besides, humans have a strong aversion to killing others. In the past, we didn’t know what we know now. Yet even an Immanuel Kant – a man convinced of the “radical evil” of

human nature, and who regarded “the state of war” as our “natural state”, firmly believed in the possibility of peace. So how much more might be achieved based on today’s more realistic recognition that humans are in fact considerably better than their reputation?

4. Apropos of Kant: he postulated that states that trade with each other are less inclined to engage in conflict thanks to “mutual self-interest”. This observation is borne out by evolution. The cooperative nature of human beings means that we see others not just as potential enemies, but also potential resources. How much savvier is that?! In the former case, we run the risk of conflict for the sake of a dubious advantage, whereas in the second, there is a chance that everyone will gain. This is another reason why humans, unlike chimpanzees, do not attack strangers. In normal circumstances, they behave cautiously towards them at first, though with mild curiosity. Cooperation between humans, as well as between states, always has the potential to benefit all parties. This sets us fundamentally apart from other primates.

5. Which brings us back to our earlier point: for the greater part of our evolution, humans decided for themselves, as individuals – and on the basis of their vital interests – whether or not to take part in collective violence. Having others decide for them and send them to war is a consequence of those despotic societies whose genesis we have been reconstructing. Besides, in many cases their individual circumstances may be so wretched that they themselves can see no other way out.

6. Perhaps the most important point: the lesson of evolution robs war of all legitimacy. It is neither God’s will nor a natural inclination – nor is it in the interest of alleged ideals such as

nation, race, *volk* or class. In a word, warfare is the legacy of what can be justly described as a parasitical way of life that came into existence with the first states, and that is still propagated by dictators, demagogues and warlords, always with the same objective: to keep the many under the thumb of the few while maximising their own privileges. Out of it, a self-perpetuating system has developed in which none of the actors have any real choice but to take up arms when the worst comes to the worst. It is this violence matrix that we must break in order to realise that war in no way represents an acceptable course of human behaviour. The political scientist John Mueller is right to say that war, like slavery, is an institution invented at a given point in time. And just as slavery was abolished because of a growing awareness of its inhumanity, so the same should happen with the war complex. It is time the claim “humans make war” became as scandalous to our ears as the statement “humans keep slaves”.

7. To this end, we must do everything in our power to expose the people actually prosecuting and profiting from wars. We are talking here of a handful of largely kleptocratic elites who, by peddling the same old narratives, have succeeded for far too long in persuading people that it is in their interest to wage war in order to defend themselves against or punish alleged enemies, or to sacrifice themselves for the sake of higher ideals. There is no national or religious obligation to kill others or to martyr oneself. Religious movements or political theories that call for this show themselves up to be misanthropic ideologies of domination. People will sometimes risk their lives to save others who are dear to them. Such heroism should not be exploited. The dignity of the individual should be inviolable, and so should his or her life.

8. Wars of defence are legitimate – and fundamentally different from wars of aggression. For this

reason, all aggressors attempt to present their actions as purely defensive. This is what makes many conflicts so devastating, with both sides claiming to be in the right, and to be acting in self-defence. All the clearer then, must be the message that preventive defence is aggression too, and hence unacceptable.

9. Tribal and early interstate wars teach us that, for all those caught up in them, there is no escape from a vicious cycle of violence. This makes it all the more important to strengthen the relevant institutions of the global community whose job it is to take advance preventive action, develop peaceful means of conflict resolution and conduct humanitarian interventions to protect the weak. All forms of concrete aggression should be sanctioned. From an evolutionary perspective, it appears at least debatable whether states are the right actors to take these decisions, and whether there aren't ways of involving, by a quality-controlled procedure, those whose interests are actually at stake, and who have demonstrated throughout evolution that they can make rational decisions if they are only given the chance: the citizens of this world. At the very least, the right of individual states to veto decisions should be recognised as an undemocratic relic of the past.

10. The corollary of this is an evolutionary and political no-brainer: the need to promote democracy and education around the world. This too is an empirically demonstrable insight: democratically constituted states do not, as a rule, wage wars on other democracies. They take into account the interests of their citizens – and not just those of the powerful few. That said, even the democracies of our time still have a way to go to become truly democratic.

11. This means, first and foremost, reducing inequality – both materially and in terms of life chances. The latest wars go to show that the main problem is not poverty itself; nor are they an inevitable consequence of overpopulation. According to Münkler, the “coexistence of bitter poverty and immense wealth” is the “key indicator” for the escalation of violence. “Potential wealth is a much bigger cause of war than actual poverty.” As for the young men so often cited in this context, it is not they themselves who are to blame, but the “combination of structural unemployment with a disproportionately high number of young people in the overall population”. This, too, echoes the evidence of evolution: where individuals see no future for themselves, they tend to stake everything on the violence card – especially if it offers the promise of getting rich quick. In evolutionary terms, the unequal distribution of material resources within societies as well as at global level, and indeed between the sexes, is the number-one cause of war – as well as one of its principal outcomes.

12. Last but not least, patriarchal structures and a warrior-like notion of masculinity are core elements of the war matrix, with women remaining a particularly insidious object of war. Few antidotes to war are as straightforward as this: emancipation and equal rights in all respects. Part of the reason why the world has been engulfed in wars for so long is that women have been excluded from it.

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One thing that emerges noticeably from these twelve lessons is that they tend to imply a return to the hunter-gatherer ethos developed over the course of our evolution. We cannot go back to that world: that is neither possible nor, for the most part, desirable. Nevertheless, there is no reason why we shouldn’t adopt those of its principles that are compatible with the modern world and

consistent with today's moral standards – which is far from the case with all of them (leaving one's elderly behind in times of crisis, for a start). After all, they have the major advantage of being intuitive to humans, because they speak to our psychological disposition: our first nature. In many sectors of society, such a return to freedom from domination has in fact been observable for some time. The egalitarian species *Homo sapiens* took a wrong turn some 12,000 years ago. This intermezzo of violence and repression appears to be coming to an end, at least in some regions of the world. Societies are becoming more democratic, people's freedom to believe what they wish, and to live and love as they wish, has increased, as has equality. This process of emancipation from despotic systems is far from complete – and it is by no means automatic. The risk of renewed repression is always there. What all this suggests, however, is that human nature is at least no barrier to the abolition of war. On the contrary, it is on our side, and longs for peace. There is no longer any reason to be afraid of our own genes. It is high time we had the courage to build a more humane world.