

Is war declining – and why?

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Abstract

The article reviews and assesses the recent literature that claims a sharp decrease in fighting and violent mortality rate since prehistory and during recent times. It also inquires into the causes of this decrease. The article supports the view, firmly established over the past 15 years and unrecognized by only one of the books reviewed, that the first massive decline in violent mortality occurred with the emergence of the state-Leviathan. Hobbes was right, and Rousseau was wrong, about the great violence of the human state of nature. The rise of the state-Leviathan greatly reduced in-group violent mortality by establishing internal peace. Less recognized, it also decreased out-group war fatalities. Although state wars appear large in absolute terms, large states actually meant lower mobilization rates and reduced exposure of the civilian population to war. A second major step in the decline in the frequency and fatality of war has occurred over the last two centuries, including in recent decades. However, the exact periodization of, and the reasons for, the decline are a matter of dispute among the authors reviewed. Further, the two World Wars constitute a sharp divergence from the trend, which must be accounted for. The article surveys possible factors behind the decrease, such as industrialization and rocketing economic growth, commercial interdependence, the liberal-democratic peace, social attitude change, nuclear deterrence, and UN peacekeeping forces. It argues that contrary to the claim of some of the authors reviewed, war has not become more lethal and destructive over the past two centuries, and thus this factor cannot be the cause of war's decline. Rather, it is peace that has become more profitable. At the same time, the specter of war continues to haunt the parts of the world less affected by many of the above developments, and the threat of unconventional terror is real and troubling.

Keywords

declining violence, declining war, evolutionary psychology, human history, human violence

When quite a number of scholars simultaneously and independently of one another arrive at very similar conclusions on an issue of cardinal theoretical and practical significance, their thesis deserves, and has received, great attention. The thesis is that war and violence in general have progressively decreased in recent times, during the modern era, and even throughout history. Of course, despite their unanimity, all these scholars could still be wrong. Indeed, each of them tells a similar story of people's disbelief at their findings, most notably that we live in the most peaceful period in human history. Some of them even explain the general incredulity by the findings of evolutionary psychology according to which we tend to be overly optimistic about ourselves but overly pessimistic about the world at large. Having myself written about the marked decrease in deadly human violence

(Gat, 2006), I agree with the authors' general thesis. However, their unanimity falters over, and they are less clear about, the historical trajectory of and the reasons for the decline in violence and war, questions that are as important as the general thesis itself.

Hobbes was right, and Rousseau wrong, about the state of nature

Steven Pinker's *The Better Angels of Our Nature* (2011) towers above all the other books surveyed here in size, scope, boldness, and scholarly excellence. It has

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deservedly attracted great public attention and has become a best-seller. Massively documented, this 800-page volume is lavishly furnished with statistics, charts, and diagrams, which are one of the book's most effective features. The book, spanning the whole human past as far back as our aboriginal condition, points to two major steps in the decline of violence. The first is the sharp decline in violent mortality which resulted from the rise of the state-Leviathan from around 5,000 years ago. This conclusion is based on the most comprehensive studies of the subject published over the past 15 years (Keeley, 1996; LeBlanc, 2003; Gat, 2006), which demonstrate on the basis of anthropological and archaeological evidence that Hobbes's picture of the anarchic state of nature as a very violent one was fundamentally true. Pinker rightly summarizes that violent mortality with the rise of states dropped from a staggering estimated 15% of the population, 25% of the men, in pre-state societies, to about 1–5%. The main reason for this drop is the enforcement of internal peace by the Leviathan, but also, less noted by Pinker, lower mobilization rates and a smaller exposure of the civilian population to war than with tribal groups, as will be explained shortly.

This conclusion regarding the dramatic drop in violent mortality with the transition to the state is at odds with the claim made by Jack Levy & William Thompson in their book, *The Arc of War* (2011). As the book's title implies, Levy & Thompson posit a great increase in warfare during history, before a decrease during the past two centuries. Thus, the book claims that mortality in fighting greatly increased, 'accelerated' in the authors' language, with the transition to the state. They reach this conclusion by making several mistaken assumptions. First, although professing ignorance about the distant past because of the lack of evidence on the behavior of hunter-gatherer societies before the adoption of agriculture some 10,000 years ago, they cite and are heavily influenced by the old Rousseauite anthropology of the generation after the 1960s, which recent studies have refuted.

Obviously, one does not have to accept the above findings regarding the pervasiveness and great lethality of prehistoric warfare. But Levy & Thompson simply do not engage with them. They accept as true the Rousseauite premise that sparse human population could not possibly have had that much to fight about. However, recently extant hunter-gatherer societies prove the opposite. Australia is our best laboratory of hunter-gatherer societies, because that vast continent was entirely populated by them and 'unpolluted' by agriculturalists, pastoralists or states until the arrival of the Europeans

in 1788. And the evidence shows that the Australian tribes fought incessantly with one another. Even in the Central Australian Desert, whose population density was as low as one person per 35 square miles, among the lowest there is, conflict and deadly fighting were the rule. Much of that fighting centered on the water-holes vital for survival in this area, with the violent death rate there reckoned to have been several times higher than in any state society. In most other places, hunting territories were monopolized and fiercely defended by hunter-gatherers because they were quickly depleted. Even among the Inuit of Arctic Canada, who were so sparse as to experience no resource competition, fighting to kidnap women was pervasive, resulting in a violent death rate 10 times higher than the USA's peak rate of 1990, itself the highest in the developed world. In more hospitable and densely populated environments casualties averaged, as already mentioned, 15% of the population and 25% of the men, and the surviving men were covered with scars (Gat, 2006: chs 2, 6).

We are not dealing here with a piece of exotic curiosity. Ninety-five percent of the history of our species *Homo sapiens sapiens* – people who are like us – was spent as hunter-gatherers. The transition to agriculture and the state is very recent, the tip of the iceberg, in human history. Furthermore, the human state of nature turns out to be no different than the state of nature in general. Here too, science has made a complete turn-about. During the 1960s people believed that animals did not kill each other within the same species, which made humans appear like a murderous exception and fed speculations that warfare emerged only with civilization. Since then, however, it has been found that animals kill each other extensively within species, a point pressed on every viewer of television nature documentaries. There is nothing special about humans in this regard. Thus, lethal human fighting did not 'emerge' at some point in history, as Levy & Thompson posit.

Violent death sharply decreased with the rise of the Leviathan

As mentioned earlier and as Pinker well realizes, violent mortality actually dropped steeply with the emergence of the state-Leviathan. Here is where Levy & Thompson make a second mistake. For measuring the lethality of warfare they use evidence of battle mortality, but this is highly misleading for various reasons. First, pre-state tribes' main fighting modes were not the battle but the raid and the ambush – capturing the enemy by surprise and often annihilating entire sleeping camps: men,

women, and children. Second, the size of battles merely indicates the size of the states and their armies, which are obviously larger than tribal groups in absolute terms. Yet the main question is *relative* casualties, what *percentage* of the population died violently. And here the fact is that while states and their armies grew by a factor of tens, hundreds, and thousands, giving a spectacular impression of large-scale fighting, *relative* casualties actually decreased under the state, and not only because of internal peace. Indeed, casualties decreased precisely *because* states grew large.

Take Egypt, for example, part of the ‘acceleration’ of war with the emergence of states in Mesopotamia, Egypt, Greece, and China, according to Levy & Thompson. The size of the Egyptian army with which Pharaoh Ramses II fought the Hittite empire at the Battle of Kadesh (commonly dated 1274 BCE) was 20,000–25,000 soldiers. This was a very large army by the standards of the time. Yet the total population of Egypt was about 2–3 million, so the army constituted 1% of the population at most. This was very much the standard in large states and empires throughout history because of the great financial and logistical problems of maintaining large armies for long periods at great distances from home. Thus, in comparison to the high military participation rates of small-scale tribal societies, participation rates, and hence war casualties, in large states’ armies were much lower. Moreover, in contrast to the great vulnerability of women and children in small-scale tribal warfare, the civilian population of Egypt was sheltered by distance from the theaters of military operations and not often exposed to the horrors of war. Such relative security, interrupted only by large-scale invasions, is one of the main reasons why societies experienced great demographic growth after the emergence of the state. It is also the reason why civil war, when the war rages *within* the country, tends to be the most lethal form of war, as Hobbes very well realized.

Warfare and feuds in the pre- and early-modern eras

Levy & Thompson further posit that between the 14th and early 19th centuries, Europe was the scene of a second ‘acceleration’ in the historical trajectory of violence. This is very much in line with the prevailing perceptions regarding early modern European history, but these perceptions are most probably wrong, and for the same reason as before: Levy & Thompson count absolute battle casualties, and obviously states became more centralized during this period and armies grew in number, so battles

also grew in size. Yet it was the anarchy and feudal fragmentation in Europe between the fall of the Roman Empire and 1200 that were responsible for the pervasive insecurity and endemic violence that characterized the Dark Ages and resulted in, among other things, a sharp demographic decline. Again, small-scale usually meant *more*, not less, violent mortality. The focus on early modern Europe is misleading also in another way: in the late Middle Ages the Mongol conquests inflicted on the societies of China, Central Asia, and Eastern Europe casualties and destruction that were among the highest ever suffered during historical times. Estimates of the sharp decline experienced by the populations of China and Russia, for example, vary widely. Still, even by the lowest estimates they were at least as great, and in China almost definitely much greater, than the Soviet Union’s horrific rate in World War II of about 15%.

The receding of medieval anarchy in the face of the growing European state-Leviathans was the first step towards a steep decline in the continent’s violent mortality rate beginning in early modernity and continuing to the present day. The studies and data cited by Pinker with respect to the domestic aspect of this trend are strikingly paralleled by those of Robert Muchembled’s *History of Violence* (2012). The work of a historian, the book meticulously documents, on the basis of French legal records, a 20-fold decrease in homicide rates between the 13th and 20th centuries. Earlier studies of other parts of Europe, starting with Gurr (1981), have come up with similar findings. Like Pinker, Muchembled attributes the steep decline to the state’s growing authority, as its justice system effectively replaced and deterred ‘private justice’, vendetta, and pervasive violence, all of them endemic in unruly societies. Correspondingly, again like Pinker, Muchembled invokes Norbert Elias’s (2000) ‘civilizing process’, whereby the defense of honor by sword and knife, a social norm and imperative in most traditional societies, is gradually given up among both the nobility and the general populace.

The civilizing process is partly a function of the growing authority of the state’s rule and justice system. But there were other factors involved, which Pinker excels in identifying and weaving together. Although he is not a historian, his historical synthesis is exemplarily rich and nuanced. He specifies the growing humanitarian sensibilities in Europe of the Enlightenment, which he traces to, among other things, the gradual improvement in living conditions, growing commercial spirit and, above all, the print revolution with the attendant values and habits of reasoning, introspection, and empathy that it

inculcated among the reading elites. As Pinker points out, not only did homicide rates decline but also other previously common forms of violence, such as judicial disembowelment and torture, were becoming unacceptable by the 18th century. This was the beginning of a continuous process which during the following centuries would bring about, among other things, the abolition of slavery and the decline of capital punishment, tyranny, and political violence in the developed world – most notably in the areas where the values of Enlightenment humanitarianism triumphed.

Both Pinker and Muchembled identify a change in the trend towards increased violence and homicide rates in the United States and Europe from the 1960s on. They attribute this change (Pinker is particularly elaborative here) to the erosion of public authority and some reversal of the ‘civilizing process’ with the cults of youth culture, defiance of authority, radical ideologies of violence by the ‘oppressed’, and the fragmentation of the stable family structure. Pinker identifies a return to a downward trend in violence from about 1990 on, which he attributes to an ebbing of much of the above through reasserted state action and changes in the public mood. A last point worth mentioning in this context: Muchembled reveals that throughout the steep decline in homicide rates, from medieval times to the present, 90% or more of all cases have been perpetrated by men, especially between the ages of 20 and 30 years old. As Daly & Wilson (1988: 145–149) have shown, this ratio is found in each and every society studied around the globe, from hunter-gatherers to agricultural and industrial societies, irrespective of the vastly different homicide rates among them.

The decline of war and the three ‘Long Peaces’ after 1815

We now move to the decline of war, which is our main concern here. Most people are surprised to learn that the occurrence of war and overall mortality in war sharply decreased after 1815, most notably in the developed world. The ‘Long Peace’ among the great powers after 1945 is more recognized and is widely attributed to the nuclear factor, a decisive factor to be sure, which concentrated the minds of all the protagonists wonderfully. The (inter-)democratic peace has been equally recognized. But in actuality, the decrease in war had been very marked before the nuclear era and encompassed both democracies and non-democracies. In the century after 1815, wars among economically advanced countries declined in their frequency to about *one-third* of what

they had been in the previous centuries, an unprecedented change. Indeed, the Long Peace after 1945 was preceded by the second longest peace among the great powers, between 1871 and 1914, and by the third longest peace, between 1815 and 1854 (Gat, 2006: 536–537, 608). Thus, the three longest periods of peace by far in the modern great powers system all occurred after 1815. Clearly, one needs to explain the entire trend, while also accounting for the glaring divergence from it: the two World Wars.

Is modern war more lethal and destructive than before?

In his earlier works, Levy (1983) was among the first to document the much-reduced frequency of war after 1815. But what brought about this change? Levy & Thompson assume – this is perhaps the most natural hypothesis – that wars declined in frequency because they became too lethal, destructive, and expensive. Supposedly, a trade-off of sorts was created between the intensity and frequency of warfare: fewer, larger wars supplanting many smaller ones. This hypothesis barely holds, however, because, again, *relative to population and wealth* wars have not become more lethal and costly than earlier in history. Furthermore, as Levy & Thompson rightly document, the wars of the 19th century – the most peaceful century in European history – were particularly light, in comparative terms, so there is no trade-off here. True, the World Wars, especially World War II, were certainly on the upper scale of the range in terms of casualties. Yet, as already noted, they were far from being exceptional in history. Once more, we need to look at relative casualties, general human mortality in any number of wars that happen to rage around the world, rather than at the aggregate created by the fact that many states participated in the World Wars.

I have already mentioned the Mongol invasions, but other examples abound. In the first three years of the Second Punic War, 218–16 BCE, Rome lost some 50,000 citizens of the ages of 17–46, out of a total of about 200,000 in that age demographic (Brunt, 1971). This was roughly 25% of the military-age cohorts in only three years, the same range as the Russian and higher than the German rates in World War II. This, and the devastation of Rome’s free peasantry during the Second Punic War, did not reduce Rome’s propensity for war thereafter. During the Thirty Years War (1618–48) population loss in Germany is estimated at between one-fifth and one-third – either way higher than the German casualties in World War I and World War II *combined*.

People often assume that more developed military technology during modernity means greater lethality and destruction, but in fact it also means greater protective power, as with mechanized armor, mechanized speed and agility, and defensive electronic measures. Offensive and defensive advances generally rise in tandem. In addition, it is all too often forgotten that the vast majority of the many millions of non-combatants killed by Germany during World War II – Jews, Soviet prisoners of war, Soviet civilians – fell victim to intentional starvation, exposure to the elements, and mass executions rather than to any sophisticated military technology. Instances of genocide in general during the 20th century, much as earlier in history, were carried out with the simplest of technologies, as the Rwanda genocide horrifically reminded us.

Nor have wars during the past two centuries been economically more costly than they were earlier in history, again relative to overall wealth. War has always involved massive economic exertion and has been the single most expensive item of state spending (e.g. massively documented, Bonney, 1999). Examples are countless, and it will suffice to mention that both 16th- and 17th-century Spain and 18th-century France were economically ruined by war and staggering war debts, which in the French case brought about the Revolution. Furthermore, death by starvation in premodern wars was widespread.

Is it peace that has become more profitable?

So if wars have not become more costly and destructive during the past two centuries then why have they receded, particularly in the developed world? The answer is the advent of the industrial–commercial revolution after 1815, the most profound transformation of human society since the Neolithic adoption of agriculture. The correlation between the decline of war in the developed world and the process of modernization, both unfolding since 1815, is surely not accidental, and the causation is not difficult to locate. In the first place, given explosive growth in per capita wealth, about 30- to 50-fold thus far, the Malthusian trap has been broken. Wealth no longer constitutes a fundamentally finite quantity, and wealth acquisition progressively shifted away from a zero-sum game. Secondly, economies are no longer overwhelmingly autarkic, instead having become increasingly interconnected by specialization, scale, and exchange. Consequently, foreign devastation potentially depressed the entire system and was thus detrimental to a state's own wellbeing. This

reality, already noted by Mill (1848/1961: 582), starkly manifested itself after World War I, as Keynes (1920) had anticipated in his criticism of the reparations imposed on Germany. Thirdly, greater economic openness has decreased the likelihood of war by disassociating economic access from the confines of political borders and sovereignty. It is no longer necessary to politically possess a territory in order benefit from it. Of the above three factors, the second one – commercial interdependence – has attracted most of the attention in the literature. But the other two factors have been no less significant.

Thus, the greater the yield of competitive economic cooperation, the more counterproductive and less attractive conflict becomes. Rather than war becoming more costly, as is widely believed, it is in fact peace that has been growing more profitable. Referring to my argument in this regard, Levy & Thompson (2011: 72–75) excused themselves from deciding on the issue on the grounds of insufficient information regarding the cost of premodern war. But as already noted, the information on the subject is quite clear.

In this limited framework I can only briefly mention the main reasons for the continued outbreak of war during the past two centuries. In the first place, ethnic and nationalist tensions often overrode the logic of the new economic realities, accounting for most wars in Europe until 1945. They continue to do so today, especially in the less developed parts of the globe, the world's remaining 'zone of war'. Additionally, the logic of the new economic realities receded during the late 19th and early 20th centuries, as the great powers resumed protectionist policies and expanded them to the undeveloped parts of the world with the New Imperialism. This development signaled that the emergent global economy might become partitioned rather than open, with each imperial domain becoming closed to everybody else, as, indeed, they eventually did in the 1930s. A snowball effect ensued, generating a runaway grab for imperial territories, *Lebensraum*, and 'co-prosperity spheres'. Here lay the seeds of the two World Wars. Furthermore, the retreat from economic liberalism in the first decades of the 20th century spurred, and was in turn spurred by, the rise to power of anti-liberal and anti-democratic political ideologies and regimes incorporating a creed of violence: communism and fascism.

Indeed, although non-liberal and non-democratic states also became much less belligerent during the industrial age, it is the liberal democracies that have been the most attuned to its pacifying aspects. This applies most strikingly to the democracies' relations among themselves,

but, as scholars have become increasingly aware, also to their conduct in general. Pinker examines in great detail and nuance the various aspects in the unfolding process over the past centuries, which he labels the humanitarian revolution, the rights revolution, and the democratic, liberal and capitalist peace. Some of the other books surveyed here are more problematic in this respect.

A successful UN?

Joshua Goldstein, *Winning the War on War* (2011), is in many ways two books under one cover – the first is very ambitious, the other more limited. Both are very good, yet they do not always sit quite comfortably together. The beginning of the book (specifically chapter 2) is similar to Pinker's in boldly and effectively advancing the wide-ranging thesis that war has decreased in stages throughout human history and in recent times. Goldstein, relying on pretty much the same studies and data as Pinker, albeit in lesser detail, arrives in his opening exposé at more or less the same conclusions regarding the long-term historical trend. As he suggests, the more we travel back into the past the more warlike it becomes (as predominantly measured by mortality rates): the past ten years compared with the previous ten; the post-Cold War era compared with the Cold War; the Cold War era compared with that of the World Wars; the past century compared with previous centuries (the peaceful 19th century is silently smoothed over here); the modern era (past 500 years) compared with premodern history; historical times compared with prehistory.

The remaining 90% of the book is a different breed altogether. It is a history of UN and other peacekeeping operations from 1947 to the present, analyzing their effect in decreasing warfare in various regions of the developing world. In this portion of the book Goldstein has many achievements as well. The historical study and analysis are learned and sensible. More importantly, Goldstein succeeds in making a case for a claim that is generally met with much skepticism: that peacekeeping forces have actually had a not insignificant effect in quelling open violence, shortening wars and thereby reducing war mortality and, in some instances, even in contributing to a peaceful conflict resolution. It falls beyond the scope of this article to offer a critical review of the exact political conditions and specific circumstances in terms of the local and international players and interests under which lesser or greater success has been achieved in some cases. Side by side with the discerning political scientist, there appears to be in Goldstein a true believer and crusader in the cause of peace for whom peacekeeping

missions and the activity of peace movements are a panacea and the main reason behind the writing of the book. Indeed, it is the connection between the two parts of the book, between the long-term and more recent decrease in war, on the one hand, and the role of peacekeeping in reducing warfare, on the other, that constitutes the book's weakest link.

The question of causality is where Goldstein stands on shaky ground. Had he been content with the modest argument that peacekeeping operations have contributed something to the decrease of warfare over the past 65, especially the last 20 years, and made an effort to weave this factor together with other factors so as to clarify their mutual connections and interactions and make sense of the overall picture, this would have been a very reasonable approach. Indeed, Goldstein cites (p. 15) with seeming approval the list of factors generally regarded as contributing to the decrease of war: from US hegemony, to the effect of liberalism, democracy, and global capitalism, to female participation in politics (all of them, incidentally, not mutually unrelated). Yet later (pp. 42–45) he summarily plays down any other explanation for the recent decrease of war as if it were competing with rather than complementary to peacekeeping. This is curious, unnecessary and, indeed, self-contradictory. After all, temporally, it is Goldstein himself who claims that the decrease in warfare had begun long before the UN and its peacekeeping operations. Moreover, spatially, the world's remarkable zone of peace – the scene of the most dramatic change – is not the developing world but the affluent, developed world, especially its liberal democratic parts, where no peacekeeping forces and operations, by the UN or anybody else, have played a role. In response to the claim that he had little by way of theory, Goldstein replied in a 2012 International Studies Association panel¹ that his was international liberalism. But is international liberalism unrelated to the growth of liberalism in general – both political and economic – with its broader, well-documented pacifying effects projected from the hegemonic liberal core to the less liberal periphery?

Simply kicking a senseless habit?

An untempered idealistic, almost salvationist, streak is the cause of considerable problems and confusion in John Horgan, *The End of War* (2012). The author is very

¹ In a panel on 'The decline of violence: Current trends', 53rd Annual Convention of the International Studies Association, San Diego, CA, 2 April.

familiar with the literature relating to the subject and has many correct things to say: like the others, he documents the great decline in warfare around the world; and rejecting the crude biological determinism often cited as the cause of war and of war's inevitability, he points out that *both* war and peace are in our genes. And yet he fails to grasp the full significance of this point. In pursuit of their aims people may employ any of the following strategies: cooperation, peaceful competition, and violent conflict. We are very adept in using each of them because we are evolutionarily well-equipped with the heavy biological machinery necessary for carrying them out. The reason why we are so well equipped is that each of these strategies has been widely employed by humans throughout our long evolutionary history. Each of them is a well-designed tool interchangeably resorted to, depending on the particular circumstances and prospects of success. Violence is not a blind biological instinct, but nor does it lack a deep-rooted, evolution-shaped biological function. It is the hammer in our behavioral toolkit, which has always been readily disposable and handy; indeed, it often proved necessary and advantageous. The above-cited huge disparity between men and women among killers, which remains constant despite huge differences in killing rates among different societies, is a striking demonstration of both the innate element and great context-sensitivity of violent behavior.

A failure to grasp this crucial point (which Pinker well emphasizes) is the cause of many fatuous ideas in Horgan's book. He has been convinced by the recent literature on the subject that extensive warfare had existed before the state and agriculture. Yet despite the evidence to the contrary (e.g. Australia, Tasmania, the Arctic), he clings to the view that warfare had begun only with the denser human populations forming shortly before the agricultural revolution. He repeats Margaret Mead's idea (1940) that war was an addictive invention, somehow – it is not clear why – picked up by human populations throughout the world (one wonders if the same applies also to homicide). Apparently, Horgan believes that the alleged 'invention' of war at some point in history strengthens the case that it is not pre-ordained and gives credence to the proposition that this arbitrary and senseless habit is, and should be, now kicked, 'uninvented', as suddenly and inexplicably as it was invented, by an act of sheer moral will. He states that he has always believed war to be crazy and absurd, devoid of any rationale. This is a growing sentiment in today's modern and affluent world. But try this thesis on Chinggis Khan, whose descendants constitute, according to genetic studies (Zerjal et al., 2003), 8%

of all males in Eastern and Central Asia, evidence of staggering sexual opportunities enjoyed by his sons and grandsons whose houses ruled over the area for centuries. Lest it be thought that only autocrats and other 'rotten apples' profited from war, it ought to be remembered that the two most successful war-making city-states of classical antiquity were democratic Athens and republican Rome. And they were so successful precisely because the populace in these polities benefited from war and imperial expansion, championed them, and enlisted in their cause.

To account for the perceived decrease in warfare, Horgan resorts to a purely voluntary explanation. He adheres to John Mueller's thesis (1989) that the decline of war is the product of a social 'attitude change'. Why this attitude change occurred at this point in history rather than any time earlier remains a mystery with both Mueller and Horgan. Horgan posits people's free will as moral agents, yet powerful moral doctrines such as Buddhism and Christianity decried war for millennia without this having any noticeable effect. To understand the gravitation of human choices, and norms, from violent conflict towards the nonviolent options of cooperation and peaceful competition, one needs to understand the changing circumstances and calculus of cost-effectiveness during the past two centuries and in recent decades, as mentioned above.

Pinker well understands this logic, but some of the few major reservations I have about his book concern the causes of violence. Surprisingly, the evolutionary parts of the book are, in my opinion, inferior to the historical parts. 'Angels' versus 'Demons' in the human behavioral system is an allusion to Lincoln's first inaugural address and is surely invoked metaphorically. And yet, not entirely, because to reduce central aspects of human behavior, including those Pinker labels predation, dominance, and ideology, to 'demons' is to flatten the major subject of human aims and motivations as well as the means for achieving them. Pinker cites studies showing that separate parts of the brain may trigger violent behavior, and this is of course true of nearly all behaviors. But this does not mean that all violent behaviors are not subject to, regulated, and shaped by a unified evolutionary calculus of survival and reproduction, the very definition of the evolutionary rationale, which Pinker as an evolutionist would surely be the first to accept. The wide category he calls predation violence and describes as a means to achieve an end in fact also covers most of the other motives for violence he cites. Thus, the quest for dominance among all social animals is an evolutionary means to achieve preferential access to resources and superior

sexual opportunities. Furthermore, dominance can be pursued peacefully as well as violently (as it generally is in modern and liberal societies), which makes the 'demon' category all the more awkward. The same, of course, applies to ideology, which is another of Pinker's 'demons'. Revenge, yet another 'demon', is also, as Pinker recognizes, a means to an end: it is intended to foster deterrence by demonstrating that one is not a pushover. It is the main means for establishing fragile security in all unruly societies. Finally, Pinker on occasion gives the impression that the decline of war is a matter of escaping a Prisoner's Dilemma. While there are all sorts of Prisoner's Dilemmas in conflict situations, not all conflicts fall under this category. Throughout human history there have been many winners and losers in war.

Future prospects and threats

One more point: Pinker wisely argues that he is not prophesying the future but simply describing past trends and their historical explanations. He agrees that such trends, however deep-rooted – and they are – may reverse, as with the potential changes in the global balance of power with the weakening of US and Western hegemony, the rise of a non-democratic, non-liberal China (if it so remains) and the like. In discussing the prospect of unconventional terror, Pinker claims, like some others, that the threat is much overrated, emphasizing the difficulties surrounding the acquisition and successful use of nuclear weapons by terrorists. However, he ignores the more relevant threat, that of biological weapons, magnified and widely disseminated thanks to today's biotechnological revolution. Biological weapons are potentially as lethal as nuclear weapons, and far easier to acquire and use even by non-state individuals or small groups. Not only might a successful attack result in casualties on a par with the USA's greatest wars; it is likely to target its main centers of population and the economy. I would not underestimate this threat. More generally, we are clearly experiencing the most peaceful times in history by far, a strikingly blissful and deeply grounded trend. Yet the observation that at least since 1945 this is also the most dangerous world ever, with mankind for the first time possessing the ability to destroy itself completely, civilian populations held hostage to MAD (mutually assured destruction) deterrence, and even individuals and small groups gaining the ability to cause mass death, is far from a cliché.

Towards the end of this survey one should also mention Jesse Richards, *The Secret Peace* (2010). The subtitle of this excellent book, *Exposing the Positive Trend of World*

Events, is more reflective of its content, because the book is not concerned with the decline of war alone but documents the massive improvement in major aspects of human life during modernity. Sweeping and effectively written, and as well illustrated as Pinker's book with data, charts, and diagrams, it negates widespread sentiments, reinforced by the current economic crisis. There are many challenges on the horizon, in the security as well as in other fields. But given the past record and accelerating success during modernity, we should hope that, despite ups and downs, the general trends will endure.

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