

Is War Declining?

These are some rough notes I wrote in the winter of 2021. I haven't put together a proper bibliography, but I give dates and (snippets of) titles for everything I cite, so it should be easy to track down all the sources. I'm not an IR scholar, nor an anthropologist, nor a statistician, so there are likely to be errors and oversights. If you spot any glaring mistakes that need to be corrected, please email me at andreas.mogensen@philosophy.ox.ac.uk.

- Definitional issues:

- In determining whether war has decreased, we first need to know how to define the incidence of war, and the scale of war violence.
- There are different types of war. Commonly recognized categories include:
 - *Interstate*: A war between two or more states, such as the Korean War (1950–53).
 - *Extrastate*: A war between a state and an extraterritorial, non-state entity, such as the First Indochina War (1946–54), a colonial war between France and the Viet Minh.
 - *Civil*: A war in which a government fights an internal insurrection, such as the An Lushan Rebellion (755–63) in Tang China.
 - *Internationalized Civil*: A civil war in which a foreign power intervenes, such as the Syrian Civil War (2011 –)
- Measures of the incidence of war:
 - The Correlates of War project at the University of Michigan tracks *militarized interstate disputes*, which involve displays of force short of armed conflict. These are tracked from the early 1800s.
 - The Correlates of War project also tracks conflicts with *at least one hundred battle-related fatalities or one thousand armed personnel engaged in active combat*, starting from 1816.
 - The Uppsala Conflict Data Project and Oslo Peace Research Institute track international and civil conflicts with *at least twenty-five battle deaths in a single year*, going back to 1946.
 - Braumoeller ([‘Is war disappearing’] 2013, [Only the dead] 2019) argues that in measuring the incidence of interstate war, we should be tracking *interstate wars per politically relevant dyad*: roughly, the number of times that states who could fight one another have done so.

- Measures of the scale of war violence:
 - *Severity*: Total battle deaths.
 - Measured in terms of *severity*, World War II is the most violent war in history (Pinker [*Better angels*] 2011: 195).
 - *Intensity*: Total battle deaths as a fraction of the pooled prewar population of the combatants.
 - Measured in terms of *intensity*, World War II ranks below the Paraguayan War (1864-70) between Paraguay and the Triple Alliance (Argentina, Brazil, Uruguay), the Chaco War between Bolivia and Paraguay (1932-5), and the Iran-Iraq War (1980-88) (Braumoeller 2019: 106-7).
 - *Prevalence*: Total battle deaths as a fraction of the world population.
 - Measured in terms of deaths as a fraction of world population, Pinker (2011: 195) argues that World War II was only the 9th most violent event in history, significantly behind the An Lushan Rebellion (755-63), as well as the Mongol conquests (13th and 14th centuries), the Mideast Slave Trade (7th to 19th century), and the collapse of the Ming Dynasty (mid 17th century).
 - Note that Pinker's estimate of the An Lushan death toll at 36 million is [implausible](#), relying on comparing the pre- and post-rebellion Tang census figures without adjusting for the impact of the war on the effective administration of the census.
 - *Per year measures*: i.e., total battle deaths per year; total battle deaths as a fraction of the pooled prewar population of the combatants per year, *etc.*
 - Measured in terms of deaths as a fraction of the world population per year, World War II was the most deadly event within the last 1,000 years, and possibly the most deadly event in history, depending on the highly uncertain death toll of the An Lushan rebellion (Human Security Report Project 2013: 36-7).
- Which of these measures we favour will depend on our epistemic aims:
 - "Some people ... see war prevalence as the most important measure of the deadliness of war. ... They want to understand how bad war is as a worldwide public health problem, whereas I want to understand the nature of war as a form of organized human behavior. ... There's no arguing about which one we should care about." (Braumoeller 2019: 118)
 - My take is something like this: If you were just interested in war as a 'public health problem,' you might simply want to track if the

incidence of war has changed. If you want to know whether states have become less warlike, where belligerence is conceived as a trait of states, you might want to track if the incidence of war per politically relevant dyad has changed, since changes in the incidence of war explained by changes in the number of opportunities for states to go to war with one another are not relevant.

- Note that all of these measures focus solely on battle-deaths. There are some significant limitations to measuring the scale of war violence purely in these terms:
 - Civilian fatalities are not taken into account:
 - Battlefield deaths generally do not count civilians killed directly or indirectly as a result of military conflict. Apparently, it is extremely difficult to reliably measure total excess mortality due to war, and as a result battlefield deaths are used as the standard measure (Pinker 2011: 299-300; Braumoeller 2019: 101).
 - Kaldor ([‘In defence of new wars’] 2013: 9): “what is shocking about this whole debate is the fact that we have good and accurate statistics for deaths of men in state-based uniforms, but information about the vast majority of victims is totally inadequate.”
 - It has been claimed that the civilian share of war deaths has increased significantly throughout history, to the point at which 80-90% of war victims are now civilians.
 - The (UNDP [*Human Development Report*] 1998: 35): “Civilian fatalities have climbed from 5% of war-related deaths at the turn of the century to more than 90% in the wars of the 1990s”.
 - The claim is especially associated with the ‘New Wars’ hypothesis (Kaldor [*New and Old Wars*] 1999)
 - Kaldor (1999: 100): “At the beginning of the twentieth century, 85-90 per cent of casualties in war were military. In World War II, approximately half of all war deaths were civilian. By the late 1990s, the proportions of a hundred years ago have been almost exactly reversed, so that nowadays approximately 80 per cent of all casualties in wars are civilian.”

- Note that Kaldor (2013: 9) nonetheless asserts that “the data suggests an overall decline in all war-related deaths.”
- Pinker (2011: 317-8) argues that this claim should be rejected, relying on sources such as Roberts ([‘Lives and statistics’] 2011)
 - Roberts criticizes the evidence used to support the claim that 90% of casualties in contemporary armed conflicts are civilian (noting that roughly 40% of casualties in Bosnia-Herzegovina, 1991-5 were civilians, but also recording between 75-83% in the Second Gulf War). He points to some signs of improvement, such as a decline in civilian deaths due to landmines, but to my mind does not argue for any firm positive conclusions about the long-run trend in civilian to military fatalities. E.g., he doesn’t seem to touch on the claim that civilian casualties were only 5-10% of war casualties in the early 20th century.
- A focus on battle-field deaths also neglects non-fatal casualties:
 - As a result of improvements in battlefield medicine, wounded-to-killed ratios have increased from less than 2 to more than 6 between 1750 and today (Fazal [‘Dead wrong?’] 2014), and so, over time, battlefield death measures capture less of the violence of war visited on combatants.
 - However, “the available data suggests that, even accounting for the battle wounded and notwithstanding improvements in medical care in conflict zones, the number of casualties of war still fell.” (Fazal 2014: 116)
- One topic of intense controversy is the incidence of intergroup violence among ancestral hunter-gatherers. Here too we see disagreement over the definition of war:
 - Bowles ([‘Comment on Fry and Soderberg’] 2013: 5): “The term ‘war’ is not really apt for the kinds of intergroup conflicts likely to have occurred during the Late Pleistocene.”
 - Fry defines war as “[a] group activity, carried on by members of one community against members of another community, in which it is the primary purpose to inflict serious injury or death on *multiple*

nonspecified members of that community” ([*The Human potential for peace*] 2006: 16) [my emphasis].

- Kelly ([*Warless Societies*] 2002: 5) favours a similar definition: “In war the killing of any member of the enemy group (or any of a class of members such as adult males) is considered legitimate. War (including feud) is grounded in application of the principle of *social substitutability*, and is thus governed by a distinctive logic that is entirely foreign to murder, duel, and capital punishment.” [Emphasis in text.]
- Bowles (2013) objects that by constructing war as violence with a ‘nonspecified’ target, Fry and Soderberg ([‘Lethal aggression ...’] 2013) illegitimately exclude various kinds of intergroup coalitionary violence in arguing that war is not prevalent among hunter-gatherers.
 - Compare Hames ([‘Pacifying hunter-gatherers’] 2019: 160–1): “The definition of ‘true war’ employed by Fry and by Kelly allows them to claim war is relatively new and more common today than in the past, even though between-group coalitionary killings are an ancient human practice shared with chimpanzees, our last common ancestor, and hominins”.
- The Statistical Distribution of War Incidence and War Violence
 - Pioneering work on the statistical distribution of wars and battle deaths was undertaken by Lewis Fry Richardson ([‘The distribution of wars in time’] 1944, [‘Variation of the frequency of fatal quarrels with magnitude’] 1948) based on a data set covering interstate wars from 1820–1945.
 - Richardson argued that battle deaths (measured in terms of severity) are power law distributed, such that if \mathcal{X} is a random variable measuring the total number of battle deaths in a given conflict, then $\Pr(\mathcal{X}) \propto \mathcal{X}^{-\alpha}$ (for values of \mathcal{X} at least as great as some minimum, $\mathcal{X}_{\min} > 0$), for $\alpha > 1$.
 - Richardson also found that the onset of wars followed a simple Poisson process, implying a constant probability of war outbreak per annum and a geometric distribution for years between wars.
 - Notably, Richardson’s model is stationary, treating war incidence and severity over the period 1820–1945 as governed by an unchanging statistical distribution.
 - My impression is that participants in this debate generally accept that battle deaths are power law distributed and war onset is Poisson distributed, and the key point of disagreement is whether a stationary model can be projected

beyond the time period covered by Richardson's data set, or whether we ought to postulate a change in the model's parameters at around the time that his data runs out, i.e., around the end of World War II (see Pinker 2011: 200–22).

- The Big Three

- Pinker (2011) argues for the existence of three key historical junctures at which war violence has declined substantially:
 - *The Pacification Process*, beginning around 5,000 years ago with the emergence of the first true states.
 - *The Long Peace*, beginning after the end of World War II: a significant reduction in the rate at which the great powers wage war on one another.
 - *The New Peace*, beginning around the end of the Cold War: a significant decline in wars of all types throughout the world.
- Note that Pinker's overarching argument about the historical decline of violence is not concerned with war specifically and covers many other dimensions of interpersonal violence, such as homicide rates.
 - Here, I focus solely on the putative reduction in war violence.
- In one of the most widely discussed criticism of Pinker, Cirillo and Taleb ([‘On the statistical properties and tail risk of violent conflicts’] 2016) construct a data set of 565 armed conflicts with more than 3000 casualties covering the last 2000 years, and find that the data does not allow them to reject the null hypothesis that war incidence over this time period is generated by a stationary Poisson process and that battle deaths normalized to world population over this period are modelled by a stationary fat-tailed distribution.
 - However, the significance of this finding with respect to Pinker's view is disputable, because the temporal scope of the data set and analysis has been argued not to allow us to meaningfully test for a break-point in the data corresponding to the Long Peace.
 - Spagat and Weezel ([‘The decline of war since 1950’] 2020: 132–3): “there could be a big change after, e.g., war number 500 but without the last 65 draws disturbing the fit of the first 500 draws sufficiently to lead to rejection of the whole model. Imagine flipping a coin that has a 0.5 probability of landing heads for the first 500 flips and a 0.3 probability of landing heads for the last 65. You would probably not reject a hypothesis that all the flips had a chance pretty close to 0.5 of landing heads. More importantly, if you conflict your analysis to the 565 flips as a whole, then you will

get no hint that there was a dramatic change after flip number 500.”

- It is perhaps telling that Cirillo and Taleb misunderstand the term ‘the long peace’ as referring to the claim “that violence has been declining over time.” (29) The hypothesis specifically targets 1945 (or sometimes 1950) as a break-point.

- War among Hunter-Gatherers

- Pinker (2011: 47-56) claims that pre-state peoples have very high rates of death due to warfare, by comparison with state societies, due to the exercise of a monopoly of violence by states.
 - An alternative hypothesis argued for by Falk and Hildebolt ([‘Annual war deaths in small-scale versus state societies’] 2017) is that the rates of deaths due to intergroup violence simply decrease with increasing population size: “larger communities are less vulnerable to having large portions of their populations killed” (810).
 - They find that this trend holds within non-state societies, as well as for state societies, and even for chimpanzee troupes: “the assertion that people who lived/live in small-scale societies were/are generally more violent than denizens of states should be abandoned, because severity of war deaths appears to be a function of population sizes in *H. sapiens* rather than a manifestation of greater violence in smaller, more vulnerable societies.” (811)
 - See also Braumoeller (2019: 122-4) for the observation that a decline in the prevalence of battle deaths in modern times could be explained simply by the fact that militaries do not grow as quickly as population as a whole.
 - Other critics of Pinker’s hypothesis of a Pacification Process have especially contested the claim of high rates of war violence among mobile foragers, taken to be most directly representative of human societies throughout most of our history (Fry [‘War, peace, and human nature’] 2013; Fry and Soderberg [‘Lethal aggression’] 2013, [‘Myths about hunter-gatherers redux’] 2014; Ferguson [‘Pinker’s list’] 2013a, [‘The prehistory of war’] 2013b).
 - The alternative hypothesis is summarized by Fry (2013: 15):
 - “Physical violence may have been decreasing over *recent* millennia, but this trend does not represent humanity’s entire evolutionary drama. ... The worldwide archaeological evidence

shows that war was simply absent over the vast majority of human existence ... But with a gradual worldwide population increase ..., the shift from universal nomadic foraging to settled communities, the development of agriculture, a transition from egalitarianism to hierarchical societies – and, very significantly, the rise of state-level civilization five thousand to six thousand years ago – the archaeological record is clear and unambiguous: war developed, despots arose, violence proliferated, slavery flourished, and the social position of women deteriorated.”

- Pinker (2011: 54) says: “The hypothesis is not directly relevant to this chapter, which compares people living in anarchy with those living under states rather than hunter-gatherers with everyone else. But there are reasons to doubt the hypothesis of hunter-gatherer innocence anyway.”
- Pinker’s data on the percentage of deaths due to warfare among ancestral and contemporary hunter-gatherers comes from two sources:
 - He relies on Bowles (2009) for estimates drawn from the ethnographic record for contemporary hunter-gatherers, and on Bowles (2009) and Keeley ([*War before civilization*] 1996) for estimates based on archaeological records. As I’ve never read Keeley, I’ll focus on Bowles:
 - Defining war as “events in which coalitions of members of a group seek to inflict bodily harm on one or more members of another group,” Bowles scanned “all available archaeological and ethnographic sources that present (or are cited as presenting) relevant data” yielding 8 ethnographic sources and 15 archaeological sources, with both data sets indicating mean mortality due to warfare of 14%.
 - There are a number of problems with this study:
 - Most obviously, there seems to be *selection bias*: Bowles does not construct a random sample, apparently selecting sources by searching for evidence of intergroup violence. At best he might establish that when hunter-gatherers make war, warfare accounts for a very high fraction of all deaths.
 - Fry and Soderberg (2013) construct a random sample of mobile foragers from the Standard Cross-Cultural Sample (SCCS), finding that roughly half of the sampled societies had no lethal events that involved more than one perpetrator.

- Bowles (2013) objects that “all of the societies studied by the authors were (at the time of the ethnographic data collected) living under the (at least formal) authority of states (some colonial some not) which invested substantial military and other resources so that the state itself would monopolize the use of violence within its territory. ... For example, we know from a detailed ethnohistorical study [Burch, *Alliance and Conflict: The World System of the Inupiaq Eskimos*.] of the Inupiaq in Alaska that prior to the establishment of state authority intergroup violence was extraordinarily frequent ... But the northern North American populations in the authors’ sample show virtually no intergroup violence” (3)
- Ferguson (2013b) undertakes a survey of the complete archaeological record for Europe and the Near East to determine the extent of intergroup violence, finding that “prehistoric war was not ubiquitous, that it is in fact rare in very early archaeological records, and becomes common only over time.” (191)
 - The archaeological evidence relied on by Pinker “consists of cherry-picked cases with high casualties, clearly unrepresentative of prehistory in general.” (Ferguson 2013a: 116)
 - The specific archaeological evidence relied on by Pinker is painstakingly critiqued by Ferguson (2013a).
- Some of Bowles’ figures are also of questionable relevance to estimating rates of intergroup violence in the Pleistocene:
 - “All 46 deaths used by Bowles (2009) to calculate so-called warfare mortality among the Ache are listed as ‘shot by Paraguayan’ by Hill and Hurtado (1996, Table 5.1, pages 171-173) ... The Hiwi case parallels that of the Ache, as *criollo* ranchers massacred Hiwi in attempts to usurp their land ... To be absolutely clear, *the only so-called war deaths* reported are those where indigenous people were murdered or massacred by Venezuelans.” (Fry 2013: 17)

- Note that the Ache and Hiwi have the highest and third highest rates of death due to intergroup violence in Bowles' data set.
- Other peoples included in the ethnographic sample are rejected by Fry (2013) as unrepresentative of Pleistocene hunter-gatherers, assumed to be egalitarian, mobile foragers:
 - "The Ayoreo group of forager/horticulturalists probably should not have been included in a sample of 'hunter-gatherers' to begin with as horticulture was not practiced in the Pleistocene ... [T]he Modoc, as semi-settled/hierarchical hunter-gatherers, should also be dropped from the sample." (18)
 - Similarly, Ferguson critiques the inclusion of sites from British Columbia in the archaeological evidence, because "This region cannot be taken as typifying hunter-gatherers throughout prehistory. Instead, the Northwest Coast has become the type-case for 'warlike' *complex* hunter-gatherers" (121).
 - Bowles (2013) rejects the claim that sedentary hunter-gatherers and hunter-gatherers with class divisions should be rejected as unrepresentative of Pleistocene hunter-gatherers.
 - This is a matter of on-going controversy: see Wengrow and Graeber ([Farewell to the "childhood of man"] 2015), and Singh and Glowacki ([Human social organization during the late Pleistocene] ms)
 - Singh and Glowacki: "As early as the penultimate interglacial (c. 130 ka) - and possibly much earlier - humans lived in societies

that varied considerably in their social organization. Some humans lived in large, sedentary, dense communities. Some lived in stratified societies with inherited status. Some engaged in cooperative projects with hundreds, even thousands of people. Some cultivated plants and managed animal populations and may even have domesticated species.” (2)

- Fry (2006: 78) records the presence of war in *all* complex hunter gatherer societies in the SCCS.
- Excluding all of these cases, Fry (2013) calculates that the rate of death from warfare in Bowles’ ethnographic data drops to 7 percent.
 - This is still very high, but also does not correct for unrepresentativeness or the very small size of the remaining sample.
- The decline of war in the late 20th century?
 - The Long Peace Hypothesis (LPH), originally formulated by Gaddis ([*The Long peace*] 1987) is typically understood as a claim that war among ‘great powers’ has decreased substantially since World War II, relative to the norm in modern history.
 - Note that this introduces new potential for verbal disputes, concerning the meaning of ‘great power’.
 - Clauset ([‘Trends and fluctuations’] 2018: 3): “limiting the analysis to conflicts among ‘major powers’ introduces subjectivity in defining such a scope, and there is not a clear consensus about the details, for example, when and whether China or the occupied European nations, or certain wars, such as the Korean War”.

- Pinker (2011: 252) on the Long Peace and war incidence:
 - “The postwar years are by far the longest period of peace among great powers since they came into being five hundred years ago. The stretch of peace among European states is also the longest in its bellicose history. ... Taking the frequency of wars between great powers from 1495 to 1945 as a baseline, the chance that there would be a sixty-five year stretch with only a single great power war (the marginal case of the Korean War) is one in a thousand. Even if we take 1815 as our starting point, which biases the test against us by letting the peaceful post-Napoleonic 19th century dominate the base rate, we find that the probability that the postwar era would have at most four wars involving a great power is less than 0.004, and the probability that it would have at most one war between European states (the Soviet invasion of Hungary in 1956) is 0.0008.”
 - These probabilities are generated by using the historical rate of war onset per year to estimate the parameter of a Poisson distribution, from which the probabilities are then computed.
 - Braumoeller (2019: 27-8) gets different results by modeling the onset of great power war in a given year as a binomial distribution with $p = 0.02$, based on the rate of great power war in the last five centuries:
 - “the probability of observing seven continuous decades of peace is 24.3%.” (28)
 - “it would still take *about 150 years* of uninterrupted peace for us to reject conclusively the claim that the underlying probability of systemic war remains unchanged.” (28)
 - Both Pinker and Braumoeller are relying primarily on Levy ([*War in the Modern Great Power System*] 1983) to estimate the rate of great power war, so I don’t understand why they get such radically different results. (A binomial distribution with small p and large n is approximated by a Poisson distributed with mean np so I don’t think the disagreement is attributable to the choice of different distributions.)
 - Braumoeller (2019: 179) also asserts that “[t]he four decades following the Napoleonic Wars were, by a significant margin, the most peaceful period on

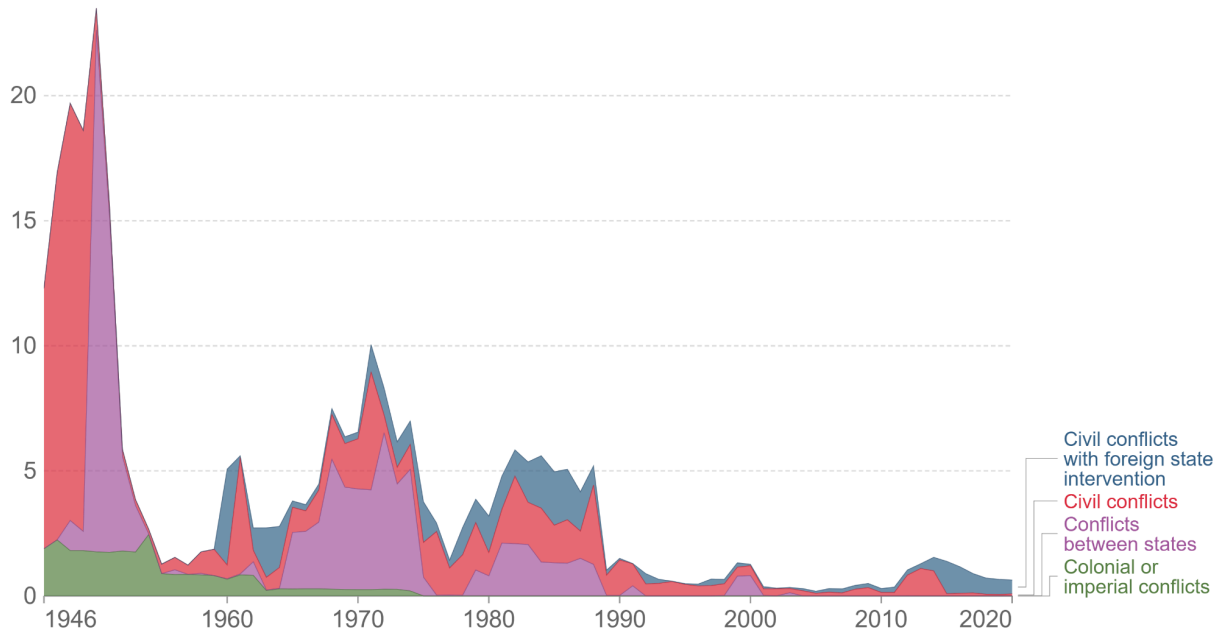
record in Europe.” He doesn’t clearly back up this claim, I think.

- Braumoeller (2013, 2019) on war incidence per politically relevant dyad, 1816–2010:
 - We see “a significant drop around the end of the Cold War. The overall trend over the course of the past two centuries, however, has been an *increase* in the rate of conflict initiation between countries [for conflicts with twenty-five or more battle deaths]. In fact, if we leave out the two World Wars, we can see that the Cold War was the most conflictual peacetime period to have occurred since the Napoleonic Wars, and the end of the Cold War was the first instance of a decrease in the rate of conflict initiation in nearly two centuries.” (Braumoeller 2019: 87)
 - For wars yielding a minimum of one hundred battle-related fatalities or the engagement of at least a thousand armed personnel in active combat, “we can detect no decline after the Cold War, which was not appreciably more or less warlike than the interwar period, and we don’t see anything like a steady decrease in the rate of war initiation over time.” (88) Furthermore, “there is no evidence that anything has changed since 1945.” (89)
- To make the case for a fall in the prevalence of battle deaths, Pinker provides graphs like the following, a version of which (based on the same data sources) appears as Fig 6-2 at Pinker (2011: 301) (I use the Our World in Data version as it’s open access):

Deaths in state-based conflicts per 100,000, 1946 to 2020



Civilian and military deaths in conflicts where the government of a state was a participant on at least one side. The data counts only direct violent deaths (i.e. excluding deaths from disease or famine).



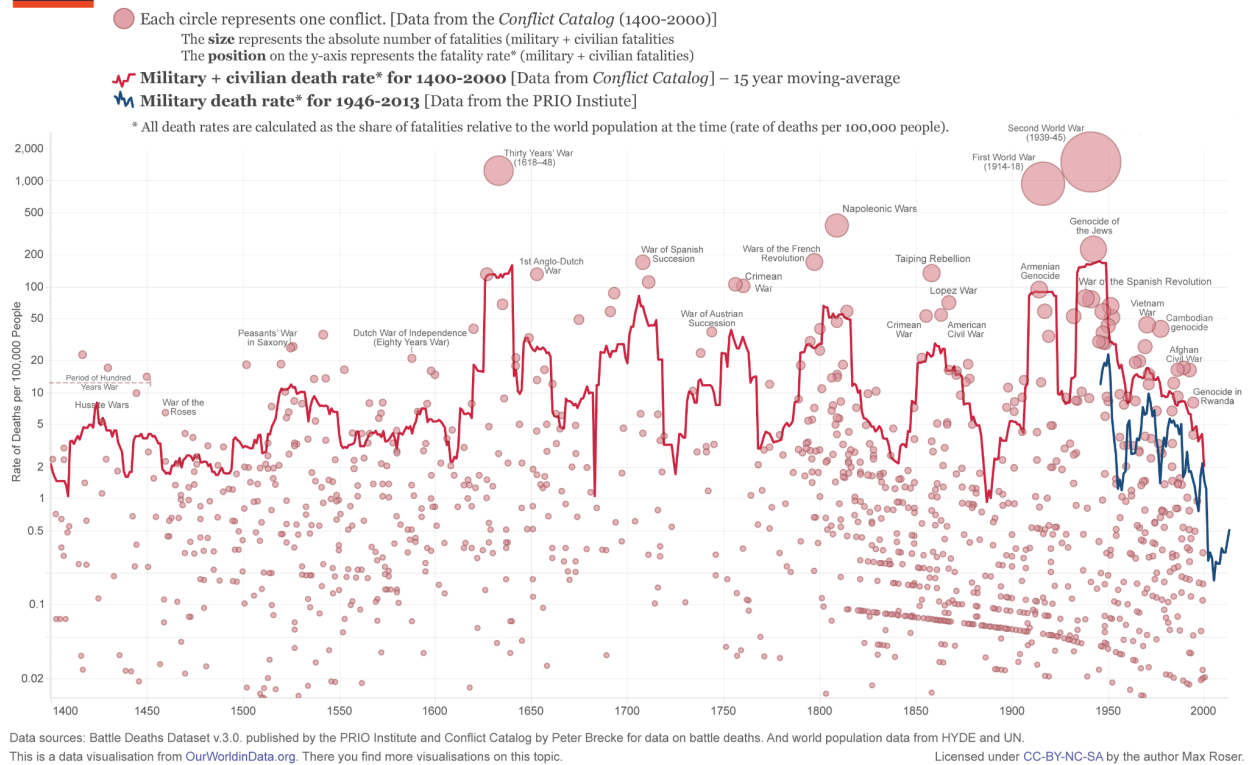
Source: OWID based on PRIO and UCDP

OurWorldInData.org/war-and-peace • CC BY

Note: The figures shown aggregate the sources' 'best' estimates for deaths in individual conflicts, or the mid-point between high and low estimates where no best estimate is provided.

- Braumoeller (2019: 41-2) cautions that the tendency of war deaths to follow a power law distribution “makes it difficult to eyeball data and say with any confidence that a real change has taken place.”
- A graph of global deaths in conflict as a share of the world population from [Our World in Data](https://ourworldindata.org) doesn't suggest any long term trend of decreasing prevalence, though note that this attempts to incorporate civilian casualties and includes deaths from genocides, so the data are not straightforwardly comparable:

Global deaths in conflicts since the year 1400 – by Max Roser



- Clauset ([‘Trends and fluctuations’] 2018) on battle death severity and the incidence of ‘large wars’:
 - Defining a ‘large war’ to be a war with severity in the upper quartile of the historical distribution (1823-2003), “Over the initial 1823-1939 period, there were 19 large wars, with a new large war occurring every 6.2 years. The ‘great violence’ pattern of 1914-1939 ... was especially violent with 10 large wars or about one every 2.7 years. In contrast, the long peace of the 1940-2003 postwar period contains only five large wars or about one every 12.8 years, a marked reduction in the most severe conflicts relative to earlier periods.” (4-5)
 - However, this observed reduction in the incidence of large wars is consistent with a stationary model of war size and timing:
 - “The long peace pattern falls comfortably within the distribution of simulated curves implying that the observed pattern is not statistically distinguishable from a long transient of the heavy-tailed distribution of historical war sizes.” (5)
 - “the long peace would need to hold for at least another century to be statistically distinguishable from a large but random fluctuation in an otherwise stationary process for war sizes and onsets.” (6)

- “A related finding is the remarkable stability of war onsets of any size since 1823 ... whose statistics are consistent with a simple Poisson process ... In other words, the annual hazard rate of a new interstate war is evidently also stationary” (7)
 - But note that ‘large wars’ are measured by severity, not intensity or prevalence, and so “a stationary process for interstate wars is not inconsistent with an overall decline in per capita violence ... because the human population has grown markedly over the same period” (8).
- Spagat and Weezel ([‘The decline of war since 1950’] 2020) test specifically for a decline in battle deaths measured by prevalence corresponding to the LPH.
 - They rely on a different data set from Clauset, which is more inclusive and is not restricted to interstate wars.
 - They test for a decline in the occurrence of wars at various levels of battle death prevalence, beginning at 1945:
 - “The evidence ... is unfavorable to the no-change hypothesis ($p < 0.5$) except in the narrow range of tails for war sizes between about 25 and 28 per 100,00. At the same time, we can never reject the no-change hypothesis at the standard 0.05 level. The evidence leans toward the decline of war idea but is far from definitive.” (138)
 - They also test for the onset of decline at 1950:
 - “When we use 1950, rather than 1945, as a break point the results are much more favourable to the decline-of-war thesis. ... No-change hypotheses are often rejected at 0.05, and even 0.01 levels for a wide range of tails.” (138)
- Braumoeller (2019) looks at severity, intensity, and prevalence of war deaths in modern history:
 - He finds no significant change point in severity over the previous 200 years:
 - “If we use severity ... as our measure of war, there’s a 2% chance that a new war will escalate to roughly the level of the Vietnam War (following the introduction of American ground forces). There’s about a 1% chance of seeing a war that’s as deadly in absolute terms, as World War I. And there’s *one chance in two hundred* of a war that will produce almost twice as many battle deaths as World War II, the deadliest war in human history. If we keep fighting wars that pass the thousand-battle-death threshold at a rate of roughly one every other

year, the probability of seeing such a war in the next century jumps to nearly 40%.”

- He also finds no trend in war intensity over the 1816–2007 period.
- He finds that battle death prevalence has probably changed after World War II:
 - “The change-point algorithm continues to show no change. But when we turn to the Kolmogorov-Smirnov and Anderson-Darling tests, some cut points *are* statistically significant, albeit just barely.” (118)
 - He also argues that we cannot conclude that there has been a real change in the escalatory potential of war: i.e., there have been more ‘small’ wars (as measured by prevalence) since 1945, but we cannot conclude that ‘small’ wars have become less likely to escalate into ‘big’ wars.
 - “Based on the post-1945 data, there’s about 1 chance in 350 that battle deaths from the next war will exceed 1% of the world population. ... If we continue to fight roughly fifty wars per century, the probability of seeing a war that large or larger in the next hundred years is about 13%. The probability of seeing a war that kills more than 5% of the world’s population in battle over the same time period is a hair over 5%.” (120)