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War-related Deaths Since 3000 BC*

William Eckhardt**
Lentz Peace Research Laboratory

1. *Previous Studies*

In order to estimate the number of war-related deaths since 3600 BC, Beer extrapolated Singer & Small's 29 million military battle deaths for international wars, 1816–1965, to 1.1 billion battle deaths for all of history.[1,2] Then, extrapolating Bouthoul & Carrere's 85 million civilian and military deaths for all wars, 1740–1974, resulted in about two billion deaths for all wars, from 3600 BC to AD 1974.[3,4] Both of these estimates were obtained without taking into account any possible trends. In other words, Beer makes the simplifying assumption that war-related deaths have been of the same intensity throughout historical time.

2. *Procedures*

In this article I have tried to take possible trends into account. I started with my list of 589 wars and related deaths for 1500–1990 where a war was defined as 'any armed conflict, involving at least one government, and causing at least 1,000 civilian and military deaths per year, including war-related deaths from famine and disease.[5] This list provided death estimates for the past five centuries. The 20th-century estimate was pro-rated by using the death estimates since 1945 to enable an estimate for the last decade of the 20th century, which was then added to those estimates already available up to 1990.

The only systematic estimates available for 500 BC to AD 1500 were those of Sorokin for 11 major European nations.[6] In order to convert these to worldwide estimates, the following procedures were performed. Sorokin's European casualty estimates for each of these centuries were divided by the number of European battles per century, obtained from Dupuy & Dupuy.[7] These European casualties per battle were then multiplied by all of the battles in Dupuy & Dupuy, to provide an estimate of worldwide casualties for these centuries. Since Sorokin had no casualty estimates for the European 'Dark Ages', AD 500–900, I filled these centuries in with a liberal estimate of 3,000 casualties per battle, which was higher than the average for the late Middle Ages, AD 1000–1500.

In order to estimate casualties before 500 BC, I wanted to use the mean casualties per battle in the late Middle Ages, AD 1000–1500, but there were *no* recorded battles prior to 1500 BC, and not many prior to 500 BC. Since there were some rough estimates of the number of wars back to 3000 BC, which I obtained from Dupuy & Dupuy, I multiplied these wars by the number of casualties per war in the late Middle Ages, which was 3,000. It seemed reasonable to assume that Archaic and Ancient wars were no more violent than late Medieval wars on the average, and probably less violent than those of the Classic period of Western history, 500 BC to AD 500.

Finally, I checked these death estimates against those which Dupuy & Dupuy and Kohn provided for some of their battles and

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** William Eckhardt is Research Director of the Lentz Peace Research Laboratory of St Louis, Missouri, USA.

Table I. War-related Deaths Since 3000 BC.

Century		Deaths (1,000)	Century %	Population (millions)	Wars	Deaths/ 1,000 pop.	Deaths/War (1,000)
BC	−30	3	0.002	14	1	0.21	3
	−29	3	0.002	15	1	0.20	3
	−28	3	0.002	16	1	0.19	3
	−27	3	0.002	17	1	0.18	3
	−26	3	0.002	18	1	0.17	3
	−25	5	0.003	19	1	0.26	5
	−24	3	0.002	20	1	0.15	3
	−23	3	0.002	21	1	0.14	3
	−22	3	0.002	23	1	0.13	3
	−21	6	0.004	25	2	0.24	3
	−20	3	0.002	27	1	0.11	3
	−19	3	0.002	29	1	0.10	3
	−18	3	0.002	31	1	0.10	3
	−17	3	0.002	33	1	0.09	3
	−16	9	0.006	35	3	0.26	3
	−15	9	0.006	38	3	0.24	3
	−14	15	0.010	41	5	0.37	3
	−13	15	0.010	44	5	0.34	3
	−12	12	0.008	47	4	0.26	3
	−11	9	0.006	50	3	0.18	3
	−10	6	0.004	62	2	0.10	3
	−9	6	0.004	74	2	0.08	3
	−8	18	0.012	86	6	0.21	3
	−7	33	0.022	98	11	0.34	3
	−6	15	0.010	110	5	0.14	3
	−5	264	0.174	120	6	2.20	44
	−4	428	0.283	135	18	3.17	24
	−3	630	0.416	150	20	4.20	32
	−2	371	0.245	165	24	2.25	15
BC	−1	762	0.503	170	16	4.48	48
AD	1	117	0.077	180	6	0.65	20
	2	224	0.148	190	8	1.18	28
	3	356	0.235	190	12	1.88	30
	4	300	0.198	190	14	1.58	21
	5	198	0.131	195	12	1.02	17
	6	53	0.035	200	13	0.27	4
	7	200	0.132	210	30	0.95	7
	8	170	0.112	220	27	0.77	6
	9	73	0.048	242	24	0.30	3
	10	3	0.002	265	30	0.01	0
	11	57	0.038	320	47	0.18	1
	12	129	0.085	360	39	0.36	3
	13	410	0.271	360	67	1.14	6
	14	501	0.331	350	62	1.43	8
	15	878	0.580	425	92	2.07	10
	16	1613	1.065	500	123	3.23	13
	17	6108	4.035	545	113	11.21	54
	18	7001	4.624	720	115	9.72	61
	19	19423	12.830	1200	164	16.19	118
AD	20	110929	73.273	2500	120	44.37	924

Table II. War-related Deaths Since 3000 BC, Major Periods.

Period	Deaths (1,000)	Period %
Archaic (3000–1500 BC)	56	0.037
Ancient (1500–500 BC)	138	0.091
Classic (500 BC-AD 500)	3,650	2.411
Medieval	2,474	1.634
Modern	145,074	95.827
Total	151,392	100%
3000 – 2500 BC	15	0.01
2500 – 2000 BC	20	0.01
2000 – 1500 BC	21	0.01
1500 – 1000 BC	60	0.04
1000 – 500 BC	78	0.05
500 – AD 0	2,455	1.62
AD 0 – AD 500	1,196	0.79
AD 500 – 1000	499	0.33
AD 1000 – 1500	1,975	1.30
AD 1500 – 2000	145,074	95.83
Total	151,393	100%

N = 1266 wars

wars.[8] I settled for the highest estimate per century so that the earlier centuries would not be underestimated. I also equated Sorokin's casualties with deaths, so as not to underestimate the earlier centuries.

3. *Results*

The result of these procedures is shown in Tables I and II, where death estimates are given in thousands, followed by the *percentage* of deaths estimated for each century. Population estimates were obtained from McEvedy & Jones in order to see how much of the increases in deaths could be explained by population growth.[9] The number of wars was obtained from Dupuy & Dupuy.

The total number of war-related deaths since 3000 BC was more than 150 million, as shown in Table I. Each of the centuries prior to the 16th century accounted for less than 1% of all war deaths, and indeed, all of them added together accounted for little more than 4% of these deaths. By contrast, almost 96% of war deaths were estimated to occur in the Modern period of history, defined as AD 1500–2000. Little more than

Deaths = Estimates for Modern times, 16th to 20th centuries, were obtained from Eckhardt. Estimates for 500 BC to AD 1500 were obtained by dividing Sorokin's European casualties per century by Dupuy & Dupuy's European battles per century, and then multiplying these European casualties per battle by all of the battles listed in Dupuy &Dupuy. Estimates for 3000 BC to 500 BC were obtained by multiplying the number of the wars in Dupuy & Dupuy for this period by the number of casualties per war in the late Middle Ages (see text). All death estimates in this Table are given in thousands.

Century % = Death estimates for each century were divided by the total number of estimated deaths (151,392,000), in order to give the percent of total deaths per century.

Population = World population estimates obtained from McEvedy & Jones as of the middle of each century.

Wars = Number of wars per century were obtained from Dupuy & Dupuy.

Deaths/1,000 pop. = Deaths in col. 2 divided by pop. in col. 4.

1,000 Deaths/War = Deaths in col. 2 divided by wars in col. 5.

one-tenth of 1% occurred during the Archaic and Ancient periods of history, 3000–500 BC. Furthermore, 1.6% of them occurred during what we have termed the Middle Ages, and 2.4% of them during the Classic period of history, 500 BC to AD 500. Within the Modern period, the 20th century occupies an outstanding niche, accounting for 73% of total deaths. This is followed by the 19th century, accounting for 13%.

4. *Controlling for World Population and War Frequency*

Judging from these estimates – as crude as they are, and as subject to change by further research as they must be – we may conclude that war-related deaths have been increasing over the past 50 centuries. When death estimates were divided by population estimates, this measure emerged as significantly correlated with centuries, so that population growth alone could not explain the increase in war deaths over these 50 centuries. War-related deaths were increasing significantly faster than population growth.

Dividing estimated deaths by the war frequencies yielded a significant correlation between this measure and centuries. According to this correlation, not only was war-related violence increasing over this time period, but the violence *per* war was also on the increase. In other words, the increase in war deaths over these centuries could not be explained solely by the increasing frequency of wars, since war deaths were increasing faster than war frequencies.

5. *Modern Times*

Looking at the Modern period, where estimates are more reliable than for earlier times, we note that war deaths rose from the 16th to the 20th century. This finding is consistent with a previous finding based on the modern death estimates of eight authors.[10] War frequencies, on the other hand, did not change very much from century to century during this period. As a general rule, deaths per population and deaths per war both increased over these five centuries.

6. *Summary and Tentative Conclusions*

This should be considered a very preliminary study indeed – at most a first approximation of estimates that may change considerably with further research. At the least it may provide an incentive for others to develop these measures to a greater degree of sophistication.

Until then, it would seem that 73% of all war-related deaths since 3000 BC have occurred in the 20th century AD, pro-rating the data up to the end of the century. Another 23% occurred from AD 1500 to 1900, so that the Modern period of history accounted for 96% of all war-related deaths. The Middle Ages accounted for 1.6%, while the Classic period accounted for 2.4%: between them, from 500 BC to AD 1500 (2000 years), they accounted for 4% of all war-related deaths, leaving the 2,500 years of the Archaic and Ancient periods from 3000 BC to 500 BC to account for little more than one-tenth of 1% of all war-related deaths. Even the 16th century accounted for only 1%; 17th century, 4%; 18th century, 4.6%; and 19th century, almost 13%. War had to wait for the 20th century to do the overwhelming proportion of its damage in human history, primarily in the two world wars which accounted for more than half of all 20th-century deaths. Far from being the Age of Aquarius, the 20th century belonged to Mars.

In terms of regions, about one-half of all battles and wars since 3000 BC occurred in Europe. This suggests that at least one-half of all war-related deaths may have occurred in Europe, since battle and war frequencies over these centuries were highly correlated with Sorokin's war casualties.[11] For this article, I obtained the European war-related deaths for the Modern period, and compared them with the total deaths presented by six authors to obtain the following European percentages for various time periods: 67% for Eckhardt's worldwide death estimates for civilians and soldiers, 1700–1987 and 1500–1990;[12] 56% for Kaye, Grant & Emonds' worldwide estimates for civilians and soldiers, 1720–1985;[13] 59% for Bouth-

oul & Carrere's worldwide death estimates for civilians and soldiers, 1740–1974;[14] 79% for Richardson's worldwide death estimates for civilians and soldiers, 1820–1952;[15] 62% for Small & Singer's worldwide death estimates for civilians and soldiers in the civil wars of sovereign nations and for soldiers only in the international wars of sovereign nations, 1816–1980;[16] and 66% for Westing's worldwide death estimates for civilians and soldiers in high-fatality wars of the 20th century.[17] If we take the simple average of these six percentages, then 65% of all war-related deaths in Modern times comprised Europeans. This is a very crude estimate indeed. It included the deaths of Turks in Europe, but this was balanced by the omission of European deaths in Africa, Asia, and Latin America. Modern estimates are presumably more reliable than previous estimates, so that my estimate of one-half of all war-related deaths occurring in Europe is probably very conservative indeed.

According to these findings, European places and Modern times have been the most violent times and places in human history. This raises a question about the reliability of these estimates. How much were they biased by the Eurocentricity and Moderncentricity of the authors, who were American, British, and French and living in the 20th century? I have argued elsewhere why I believe that they were not unduly biased.[18] Our historians and other scholars have always given the Middle East, *not* Europe, priority in making civilizations, empires, and wars in Archaic and Ancient times, 3000–500 BC. If they had wanted to be biased, or if they could not have helped themselves from being so, surely their bias could and would have been expressed in their treatment of Archaic and Ancient data – but it was not.

How, then, can we explain the violence of Europeans and Modern times? I have argued elsewhere that civilizations, empires, and wars have grown together in a dialectical evolutionary manner – feeding back and forth into one another in such a way as to promote one another in a process which may obstruct its own progress in the short run at regional levels of analysis (characterized by the rise and fall of particular civilizations), but which has grown exponentially in the long run at the global level of analysis (characterized by world civilization).[19] Modern times, and especially the 20th century, have built upon past times, and Modern space-time has found its focus in Modern Europe, the most civilized and imperial society in human history. Hence, Modern Europe has emerged as the most violent society in human history. Gernot Kohler has suggested in private correspondence that 'The increase of European violence in modern times coincides with the "industrial revolution" in Europe, which makes European imperialisms more violent than older ones'.

However, European violence may be in the process of obstructing its own progress. Since the end of World War II, relatively few war-related deaths have occurred in Europe: 176,000 such deaths, or less than 1% of the total 22 million war-related deaths, 1945–89.[20] On the basis of data such as these, Melko has argued not only for peace in our time (in Europe), but for the possibility of this European peace going on for another century or so.[21]

In the meantime, what does peace in the space-time of late 20th-century Europe do to my dialectical evolutionary theory of civilizations, empires, and wars? Surely, Europe has not de-civilized itself – but it has gone a long way toward de-colonizing itself, voluntarily or involuntarily, as the case might be. My dialectical evolutionary theory did include the possibility of civilization without war if civilization could shed itself of imperialism (dominance and exploitation).[22] Perhaps Europe is currently in the process of becoming non-violent in spite of itself. And if Europe can do it, why not a world civilization without war? We have nothing to lose but our empires; these the Soviet Union is in the process of shedding right now. Who's next?

NOTES AND REFERENCES

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3. Gaston Bouthoul & Rene Carrere, 'A List of the 366 Armed Conflicts of the Period 1740–1974', *Peace Research*, vol. 10, no. 3, 1978, pp. 83–108. Translated and compiled by Gernot Kohler. Bouthoul & Carrere include civilian deaths as well as military deaths, including war-related deaths from famine and disease, and including civil as well as international wars.
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5. Ruth Leger Sivard, *World Military and Social Expenditures 1991* (Washington DC: World Priorities, 1991). My list of 589 wars and related deaths from 1500 to 1990 was published here, where I define a war as 'any armed conflict, involving at least one government, and causing at least 1,000 civilian and military deaths per year, including war-related deaths from famine and disease' (pp. 22–25.
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19. William Eckhardt, 'A Dialectical Evolutionary Theory of Civilizations, Empires, and Wars'. Paper presented at the 18th Annual Meeting of the International Society for the Comparative Study of Civilizations, University of California at Berkeley, 1–4 June 1989. *Comparative Civilizations Review*, 1991, in press. Sources for this paper include Sorokin (note 6), Dupuy & Dupuy (note 7), McEvedy & Jones (note 9), Eckhardt (note 12), Harbottle (note 24), and Levy (note 26).
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