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Growing up in wartime: Evidence from the era of two world wars☆

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ABSTRACT

We document the association between war-related shocks in childhood and adult outcomes for Europeans born during the first half of the twentieth century. Using a variety of data, at both the macro- and the micro-level, we address the following questions: What are the patterns of mortality among Europeans born during this period? Do war-related shocks in childhood and adolescence help predict adult health, human capital and wellbeing of the survivors? Are there differences by sex, socio-economic status in childhood, and age when the shocks occurred? At the macro-level, we show that the secular trend towards lower mortality was interrupted by dramatic increases in mortality during World War I, the Spanish Flu, the Spanish Civil War, and World War II, and we quantify the size of these mortality shocks. Different patterns characterize these high-mortality episodes, with substantial variation by country, sex and age group. At the micro-level, we show that war-related hardship in childhood or adolescence, in particular exposure to war events and experience of hunger, is associated with worse physical and mental health, education, cognitive ability and subjective wellbeing at older ages. The strength of the association differs by sex and type of hardship, with war exposure being more important for females and experience of hunger for males. We also show that hardships matter more if experienced in childhood, and have stronger consequences if they last longer.

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1. Introduction

Wars produce death, devastation and hardship. According to Amnesty International, "where wars erupt, suffering and hardship invariably follow. Conflict is the breeding ground for mass violations of human rights including unlawful killings, torture, forced displacement and starvation".

The available literature suggests that the long-run effects of war on physical capital are limited and can quickly be reversed. For example, Bellows and Miguel (2009) argue that "the rapid postwar recovery experiences of some African countries after brutal civil wars – notably, Mozambique and Uganda – suggest that wars need not always have persistent negative economic consequences [...] Other recent research has shown that the long-run effects of war on population and economic growth are typically minor. To the extent that war impacts are limited to the destruction of capital, these findings are consistent with the predictions of the neoclassical growth model, which predicts rapid catch-up growth postwar". As for human capital, there is a sizable literature on the effects of military service or combat experience on earnings, health and mortality of war veterans (see for example Angrist, 1990; Angrist and Krueger, 1994; Imbens and van der Klaauw, 1995; Derluyn et al., 2004; Bedard and Deschênes, 2006; Betancourt et al., 2010; Costa and Kahn, 2010). Much less is known, however, about the long-term consequences of armed conflicts and mass violence for the civilian population.

It is convenient to regard the long-term consequences of war, or more generally of an aggregate negative health shock, on adult health as the net result of two distinct mechanisms: selection and scarring. Selection is the indirect effect on average health resulting from changes in the composition of the population. This effect is positive if the least healthy are more likely to die. Scarring is the direct damage to the individual health of the survivors.

The model in Bozzoli et al. (2009) provides a useful framework for thinking about these two mechanisms. Although very stylized, it delivers two interesting conclusions. First, the average adult health of the survivors depends essentially on three elements: the baseline level of childhood mortality, the level of childhood mortality caused by the aggregate shock, and the amount of damage the shock produces on survivors (assumed to be simply proportional to the size of the shock). Second, if the damage is not too large (because of, say, recovery or post-shock remediation), the model also predicts a non-monotonic relationship between adult health and childhood mortality, with selection dominating when mortality is high and scarring dominating when mortality is low. More general version of this model is likely to generate additional interesting predictions. For example, if the amount of damage is allowed to vary within a cohort, the net result of the two mechanisms may also depend on survivors' heterogeneity, for example by socio-economic status (SES) or other observable dimensions.

In this paper we document the operation of the two mechanisms among Europeans born during the first half of the twentieth century, a turbulent period that Berghahn (2006) calls the "era of two world wars". This period includes not only World War I (WW1) and World War II (WW2), but also a long list of armed conflicts which foreshadowed or followed the two world wars.[1] Specifically, we address three main questions: What are the patterns of mortality among people born during the era of the two world wars? Do war-related shocks in childhood and adolescence help predict adult health, human capital and wellbeing of the survivors? Are there differences by sex, SES in childhood, and age when the shocks occurred?

Unlike other recent papers, we make no attempt at uncovering causal relationships or estimating some narrowly-defined treatment effect, since we doubt that the outcomes we are interested in can be interpreted as the effect of a few causes, easily identifiable through some exogenous quasi-experiment. Still, we think that our descriptive evidence provides useful insights into an important problem. Further, two considerations make our analysis potentially relevant for policy. First, the cohorts that experienced war in their childhood or adolescence represent the bulk of the population aged 70 and older in Europe. The link to specific war-related shocks may provide a better understanding of the particular health patterns of these cohorts by bringing into focus the different experiences that may have shaped their aging process. Second, our descriptive evidence may be useful for understanding the long-term consequences of recent armed conflict in various regions of the world, for which no long-term data is yet available.

WW1 and WW2 were the deadliest wars in human history in absolute terms, though not in relative terms, but estimates of war-related casualties are subject to considerable uncertainty. The estimated death toll of WW1 in Europe ranges between 12 and 14 millions (2.5–3 percent of the total population in 1914). The estimated death toll of WW2 in Europe is three to four times higher, ranging between 40 and 50 millions (7–9 percent of the total population in 1940), the large uncertainty reflecting the death counts for Germany, Greece, Poland, the Soviet Union and Yugoslavia. There are no reliable estimates of the death toll of the other armed conflicts in Europe during our period, but estimates for the Spanish Civil War range between 190,000 and 500,000 deaths. Between WW1 and WW2, the Spanish Flu (1918–21) and the Ukrainian Famine (1932–33) added at least another 6 millions to the death count, equally split between the two health catastrophes (Ansart et al., 2009; Snyder, 2010). Erkoreka (2009) suggests a direct link between WW1 and the Spanish Flu, as "the millions of young men who occupied

[1] The list includes the Italo-Turkish war (1911–12), the Balkan wars (1912–13), the civil wars in Finland (1918) and Germany (1918–19), political violence in Austria and Italy in the aftermath of WW1, the Polish-Russian War (1919–21), the Greco-Turkish War (1919–22), the Austrian Civil War (1934), the Italo-Ethiopian war (1935–36), the Spanish Civil War (1936–39), the German occupation of Austria (1938), the partition of Czechoslovakia (1938–39), the Italian occupation of Albania (1939), the Greek Civil War (1946–49), and violence in Central and Eastern Europe in the aftermath of WW2. We consider the Russo-Finnish wars of 1939–1940 and 1941–1944 as part of WW2.

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