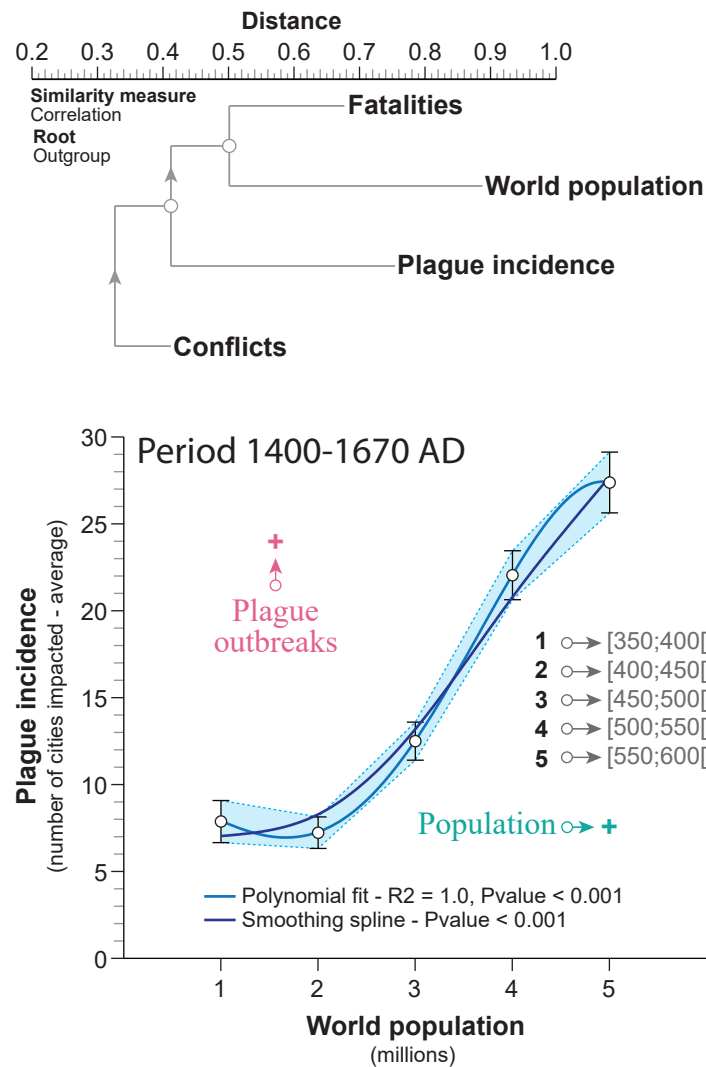
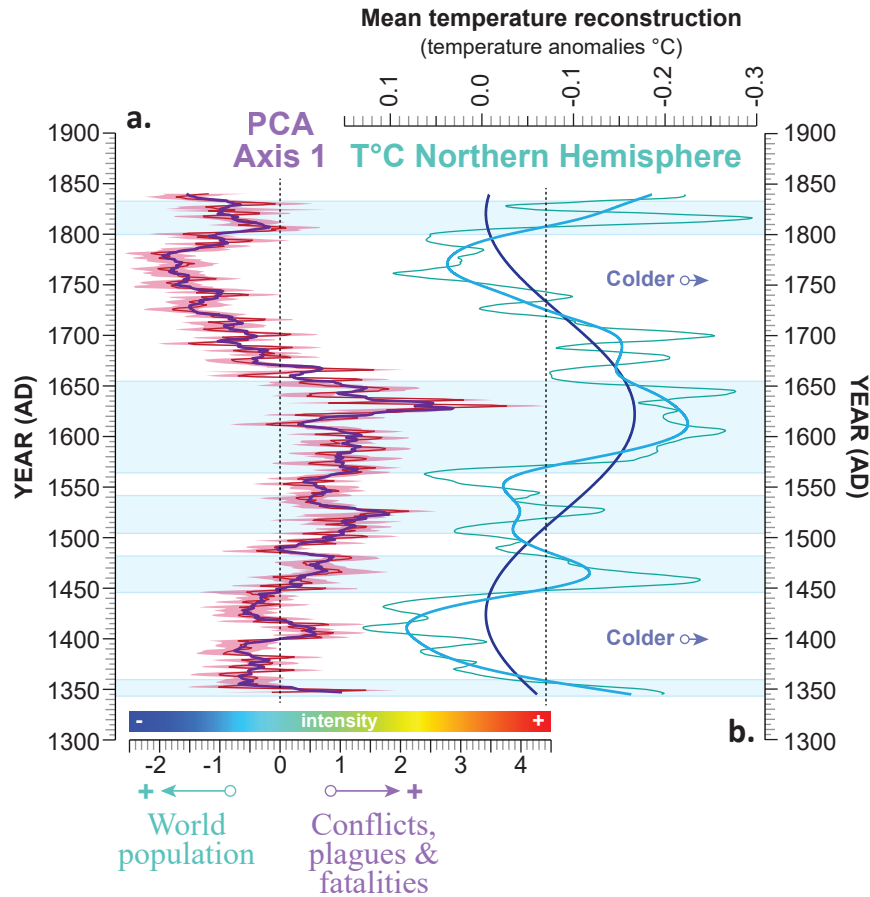


Supplementary information for:

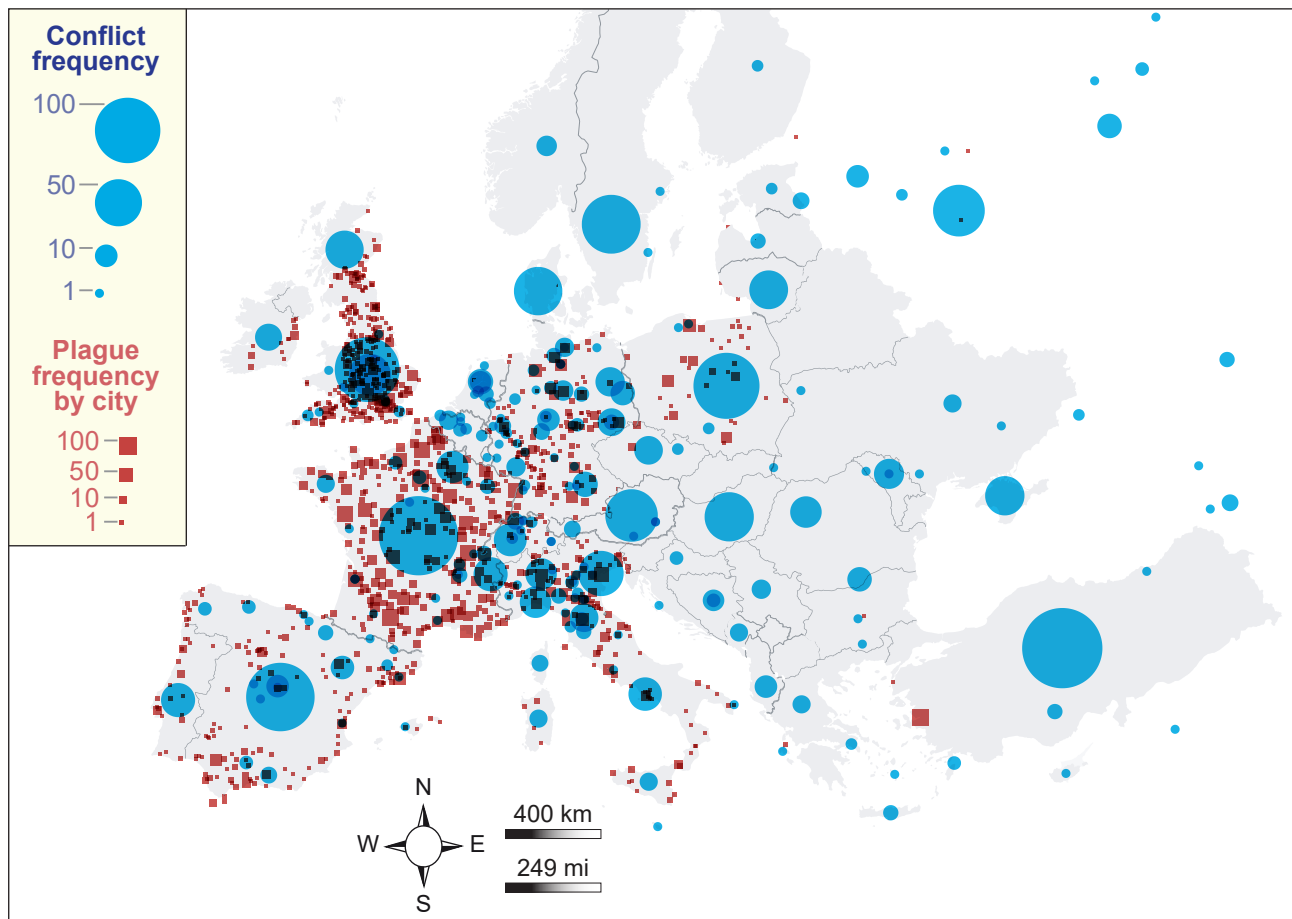
Conflicts and the spread of plagues in pre-industrial Europe



Supplementary Fig. 1. Relationships between plague outbreaks and population. The neighbor joining clustering underlines the impact of both conflicts and plague outbreaks on population and fatalities. The curve plague outbreaks versus increases in population depicts the link between the growth of population density and a rise in the epidemics. A polynomial model, as well as smoothing, were added to the curve.



Supplementary Fig. 2. Evolution of the world population compared to conflicts, plague outbreaks, fatalities and climate. (a.) We calculated a Principal Components Analysis (PCA) based on conflicts, plague outbreaks, fatalities and world population to summarize the major deviations during the study period. The main variance is loaded by the PCA-Axis 1, which is plotted on a linear time scale. The positive scores are loaded by the conflicts (0.37), plague incidences (0.66) and fatalities (0.52) while the negative values correspond to increases in world population (-0.41). We applied a LOESS smoothing to the PCA-Axis 1 to underscore the 2.5 percentile and the 97.5 percentile. (b.) The Northern Hemisphere temperature anomalies were transformed into long-term trends and fitted with a sinusoidal smoother ($P_{\text{value}} < 0.001$). The blue shaded parts denote periods of cooler climate. See text for references to the original time series.



Supplementary Fig. 3. Map summarizing the spatial distribution of the conflicts and plague data, for the period AD 1347 to 1840. The map indicates the conflict frequency and the plague frequency by location. See text for references to the original time series.