

Interactive comment on “Social vulnerability to climate in the “Little Ice Age”: an example from Central Europe in the early 1770s” by C. Pfister and R. Brázdil

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Received and published: 17 July 2006

All changes proposed by reviewers were included in the revised version of the manuscript. Below are summarised responses to all comments:

Comments to the review by Erich Landsteiner, Vienna

The review includes several valuable comments and suggestions and points to some issues which were not framed clearly enough. The model provided by Kates is indeed a very simplified one, which is far from providing a sufficient introduction into the multifaceted issue of historical famines and famine relief. For this reason, the issue was discussed in somewhat more detail by making use of some of the suggested literature. A more extensive discussion could not be included from lack of space. For the same

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reason the way of computing the Biophysical Climate Impact Factor (BCIF) had been omitted. It was added as an appendix hoping that the editors would arrange for the extra space. The statement that economic historians tend to completely disregard the severity of past climate extremes was retained. The reviewer needs to be mentioned among the very few who take climate variability in consideration as one of the factors leading to famines. The new passage reads as follows: “Rightly, economic historians have strong reservations against argumentations which attribute the causes of famines and mortality crises solely or primarily to the impact of extreme weather. Rather, they prefer explanations related to socioeconomic structures and political agency. Consequently, many of them throw out the baby with the bath water arguing that there is no need at all including the frequency and severity of climatic shocks as potentially relevant variables into their models. Exceptions from this rule are very few (e.g. Bauernfeind 1993, Woitek 1999, Landsteiner 2005)”. Figure 6 was improved

Comments to the review by Franz Mauelshagen, Zürich

The reviewer nicely depicts the contrast between the “climatic determinists” and the “distributionists”. The third group, which may be called the “empiricists”, tries to assess the relative importance of both climate impacts on one hand and social and political factors (inequality, efficiency of the administration in dealing with subsistence crises etc.) on the other. In contrast to the two before mentioned groups, the empiricists do not start from (questionable) assumptions, but they are open to adapt their assessment to their empirical findings. However, the results obtained of empiricists are less suited for generalizations than those of the “climatic determinists” or the “distributionists” and for this reason they are less taken into account. Differences in price increase: The evidence needed to adequately judge this issue is lacking. Considering the malnutrition of the victims, it makes a fundamental difference whether people have to suffer a sequence of two or three consecutive bad harvests. Bern had simply the triple advantage of a better climate, a better market integration and a substantial potato cultivation. There are no convincing arguments so far for attributing specific weights to those fac-

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tors. Population density: Population density per km² of arable was estimated for both the canton Bern and the Czech Land. The reviewer supposed that densities in Bern might be much higher, but it was slightly higher in the Czech Lands. We also agree, that timing was crucial in the political decision-making process (as was already suggested by John D. Post in his “Last Great Subsistence Crisis in the Western World” (1977). However, crisis management was not sufficiently investigated for both Bern and the Czech Republic. However, we don’t fully agree with Mauelshagen’s view on generalization. Probably, he didn’t fully understand our concern and we didn’t fully understand his arguments either. At least in history, generalizations require an elementary knowledge of the issue and they need to be supported with adequate evidence. “Climate” is undoubtedly a fuzzy term which needs to be broken down into seasonal and monthly components, types of impacts and related to limited spatial units. Understandably, historians like the term, precisely because it is so fuzzy. Reference to “climate” prevents them from getting involved with reading the scientific literature in a rather complex field, which is far from their everyday practice. For many historians, the results obtained by historical climatologists over the last two decades are “sinister”, as the renowned environmental historian Joachim Radkau openly admitted (Natur und Macht, 2000, p.48). This reluctance of (environmental) historians to deal with the results of historical climatology makes an interdisciplinary dialogue rather tedious. Related to “History” (not being one of the many special histories), the significance of climatic change still needs to be explored. However, considering the already available knowledge, it seems obvious, that the impact of “Climate” will only be one among several variables which matter for human societies. And for these reasons, the usual wishy-washi generalizations speaking about “Climate” and “History” are scientifically unsound. The plea for a more precise argumentation should not be confounded with quest for a cliometric and deterministic type of analysis.

Comment to the anonymous reviewer

This comment does not contain any critical points which should be directly addressed.

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We agree with the reviewer that implementation of different technologies can contribute to decrease or increase vulnerability of human societies in different fields. As for epidemics, it is not the aim of the paper to open this issue because would require a sophisticated analysis, inasmuch as the needed evidence is available at all. Likewise, the last comments related to documentary data and projects are without direct relevance to this article. From this reason we take the comments of anonymous reviewer more as a motivation for further thinking and will take it into consideration in further research. Technical corrections related to the Figure 6 were arranged.

Interactive comment on Clim. Past Discuss., 2, 123, 2006.

CPD

2, S209–S212, 2006

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