

# What's wrong?

Hard science and humanities – tackling the question of the absolute chronology of the Santorini eruption

Věra Klontza-Jaklová



FILOZOFICKÁ FAKULTA  
MASARYKOVA UNIVERZITA



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# PREFACE

The absolute chronology of the Late Bronze Age volcanic eruption in Santorini and its effects across the wider region has been a focus of my research since I studied archaeology at Charles University in Prague (Klontza-Jaklova 2008; 2012a; 2014). This topic, the problem of placing the event within the absolute chronology, is one of the most frequently discussed and studied topics of Aegean prehistory, especially since the mid 1970's, when the first radiocarbon dates from the region were published and the difference between those dates and archaeological/historical dates appeared. The debate is invariably lively and creative, sometimes even passionate. One particularly dramatic phase ended at the turn of the millennium when two monographs were published (Manning 1999; Friedrich 2000). In the subsequent few years several conferences dealt with the problems of assigning an absolute date to the Santorini eruption and absolute chronology in general (Cornell University 2006, Copenhagen 2007, Halle 2011<sup>1</sup>) and, circa ten years later, both above mentioned authors reviewed and re-edited their monographs (Friedrich 2009; Manning 2014). The very intensity of the debate provided adequate reason to place it (or the most significant representations of each opinion) on the pages of *Antiquity* (2014: 88/339). (More on the history of research can be found in chapter 1.3). Albeit the bibliography of this volume is bulky (about a fifth of the text), and my own, admittedly heuristic, approach has been continuous and meticulous for years, it has proved impractical to collect all the publications related to the topic or even to establish with any degree of accuracy how many exist. Thus, for the purpose of this publication, I have, of necessity, created just a choice of illustrative books and articles.

What, you may ask, can I add to the work of so many esteemed scholars? What is the aim of this monograph? Obviously, it is yet another review of the opinions; one in which I do not even try to compare the results of each method or approach. I try instead to compare the methodologies and approaches, their limits and uncertainties and I examine mainly those scientific

methods which seem to make sense for use in archaeology. I use the critical methodology of 'hard' science for 'autocriticism' of the humanities, since I am primarily trained in the humanities. I am an archaeologist and, although I collaborate intensively with physicists, I don't feel competent to criticize their methods. I aim simply to underline the points where they may not be accurate or can introduce errors. I am, however, rigorous in criticizing archaeological results. I agree with David Warburton: "...it is not chronological debate but methodological debate. (...) There is a fundamental problem and it must be admitted that that problem is fundamentally archaeological." (2009, 295)

The problem of absolute chronology is not just a physical problem. Apart from the absolute and relative physical values (in Newtonian and quantum mechanics), time possesses a philosophical meaning which can vary in different periods, regions and societies, including our own. (Klontza-Jaklova 2011). Problems with chronology cannot be solved by physical science alone. It is also a part of human history and is one of the dimensions wherein human lives are realized. We need solutions to answer the historical questions we ask but we need to test our methods, their validity and accuracy.

One could argue that the problem of 120 years offset between the possible dating scales is not significant for the Late Bronze Age or that we should resign ourselves to this problem because, at present, it looks as though we are not in a position to find convincing arguments or reach consensus. However, I cannot agree with such opinions. Archaeology, as a part of the humanities, tries to explain the interactions between people, societies and their environments, the evolution and changes in their ways of thinking and understanding of the world around them, or us. We even try to define the regularities of human actions and interactions throughout time across the Earth. In this understanding of and approach to archaeology the time frame is crucial, even, or indeed especially, in the Late Bronze Age, when a large part of the Mediterranean was organized in states with characteristics

similar to those of our, modern states (Klontza-Jaklová 2013). The correct absolute date of the Santorini Bronze Age eruption is essential for synchronization not only of Mediterranean and Near Eastern chronologies but also of pan-European chronologies because the northern European regions, although lacking written records, were nonetheless part of the 'global' trade network and one large cultural *koiné* (Kristiansen and Larsson 2005; Bouzek 2013).

I would like it to be noted that, while a multidisciplinary and transdisciplinary approach is obviously needed, co-operation and communication between humanities and hard sciences is still problematic, difficult and accompanied by a lot of misunderstandings. We often fail to trust each other, primarily because we don't understand the approaches, limits and methodologies of the other discipline. The "Santorini problem" is one of the fields where communication between humanities and natural sciences is intensive.

So, this volume's target is to evaluate the methodology of the humanities, in particular of contemporary archaeology, and attempt to offer some new methods and approaches in order to evaluate the 'weight' of each piece of possible archaeological evidence.

The problems I am going to present are very complex. It was extremely difficult for me to understand all the details and it took me a long time to become familiar with the large bibliography and various scientific methods. During the process I have changed my mind many times. However, this book is far from representing the end of my involvement with the topic; the "investigation" into the actual date of the oft-mentioned eruption continues apace and I fully intend to be a part of it.

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I have already mentioned the invaluable help of my husband Manolis Klontzas, but my son Odysseas deserves a special mention for the incredible patience with which he accompanied and assisted me on some of my surveys on Santorini and Crete.

I would like to dedicate this book to my father – a physicist – who supported and observed the process of this book's birth with immense interest and exceptional love; he was always happy to help and discuss. Unfortunately, he passed away before the manuscript was finished.