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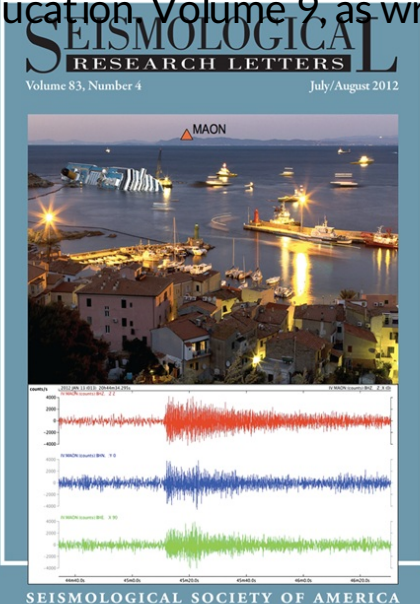
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All That Rubble Leads to Trouble 1: Reassessing the Seismological Value of Archaeological Destruction Layers in Minoan Crete and Beyond

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

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Since its discovery in the beginning of the twentieth century by British archaeologist Arthur Evans, the Bronze Age (Minoan) civilization of Crete (Greece, ca. 3000–1200 B.C.) received considerable scholarly, scientific, and popular attention (e.g., Papadopoulos, 2005). Although subject to critique and revision (e.g., Hamilakis, 2002), Evans’s ideas and hypotheses about Minoan society remain remarkably central to modern archaeological research on the island (e.g., Schoep, 2010). The recognition of the disruptive effects of earthquakes on Minoan society represents one of Evans’s enduring legacies. Earthquakes have been considered as responsible for the successive destructions of the palace of Knossos...

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by Simon Jusseret and Manuel Sintubin

INTRODUCTION

Since its discovery in the beginning of the twentieth century by British archaeologist Arthur Evans, the Bronze Age (Minoan) civilization of Crete (Greece, ca. 3000–1200 B.C.) received considerable scholarly, scientific, and popular attention (e.g., Papadopoulos, 2005). Although subject to critique and revision (e.g., Hamilakis, 2002), Evans's ideas and hypotheses about Minoan society remain remarkably central to modern archaeological research on the island (e.g., Schoep, 2010). The recognition of the disruptive effects of earthquakes on Minoan society represents one of Evans's enduring legacies. Earthquakes have been considered as responsible for the successive destructions of the palace of Knossos (Evans, 1928) and as convenient time markers for Minoan archaeological periods (e.g., Driessen, 1987). Nowadays, they are often seen by Minoan archaeologists as an unattractive explanatory concept (Cadogan, 2011), at least when divorced from their wider social, political, and economic contexts (e.g., Driessen and Macdonald, 1997). Fear of catastrophism, undesirable use of *deus ex machina* phenomena, and resistance to Occam's razor (*lex parsimoniae*) as a heuristic guide to archaeological explanation partly account for this situation. The ambiguous value of Minoan archaeological remains as indicators of ancient earthquakes may also have played a role: although damage typologies have been put forward in Greek archaeological contexts (Stiros, 1996), their applicability to Minoan earthen and rubble constructions is often limited. As a result, recognition of ancient earthquake damage on Minoan archaeological sites is frequently based on isolated observations (e.g., Sakellarakis and Sapouna-Sakellarakis, 1981; Vallianou, 1996; Monaco and Tortorici, 2004) and limited archaeological/palaeoenvironmental evidence (e.g., Gorokhovich, 2005), thereby perpetuating a catastrophist research tradition initiated by Evans more than a century ago. In the current context of increased scientific and scholarly interest

in evaluating the role of archaeological data in seismotectonic studies, we feel that the time is ripe to critically evaluate the nature of Minoan archaeological data and assess their significance as indicators of ancient earthquakes. Getting to grips with the Minoan case may provide us with a new methodological basis for assessing the archaeoseismological potential of comparable archaeological stratigraphical contexts in the Eastern Mediterranean (Bronze Age Greece, Anatolia, Cyprus, and Levant) and in other parts of the world where cultural remains mainly consist of earthen and/or rubble constructions (e.g., Indus valley civilization and American Indian cultures).

MINOAN DESTRUCTION LAYERS: A SEISMIC SMOKING GUN?

In Minoan Crete (Evans, 1928), as elsewhere in the Eastern Mediterranean (Schaeffer, 1948), archaeological destruction layers, deposits, or horizons have been considered as evidence *par excellence* of catastrophic earthquake events. Destruction layers traditionally designate archaeological layers showing evidence for destruction caused by human and/or natural agents. Burned sediment, charcoal, collapsed architectural debris, smashed objects, and buried bodies are the most common archaeological criteria used to identify destruction deposits (Fig. 1).

The story has it that Evans, occupied as he was in the early summer of 1926 with tracing the effects of earthquakes at Knossos (see Fig. 2 for location of Cretan archaeological sites mentioned in the text), was caught by seismic shocks while reading on his bed in the basement room of his Villa Ariadne. Deeply impressed by the experience—his vivid descriptions of the havoc wrought by this earthquake² speak for themselves—Evans (1928) quickly transposed his observations to the Knossian archaeological record:

“When, in the great Palace of Knossos, we find evidence of a series of overthrows, some of them on a scale that could hardly be the work of man, there seems real reason for tracing the cause to...seismic agencies. (pp. 318–319)”

The methodological drift might have gone unnoticed had Evans resisted giving stratigraphical value to earthquakes by associating all major destructions at Knossos with seismic events of varying intensities. The impact of Evans's interpretive

1. P. Popham, *The Independent*, 1 August 2004.

2. Currently known as the 26 June 1926 event, an intermediate-depth earthquake of magnitude 7.4 with its epicenter off the island of Kos, some 200 km northeast of Knossos (Papadopoulos, 2011).

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