



6<sup>th</sup> International Congress on the Archaeology of the Ancient Near East

MODES OF DEVELOPMENT OF WHEEL FASHIONING TECHNIQUES  
(WHEEL COILING AND WHEEL THROWING) IN THE NEAR EAST AND EASTERN  
MEDITERRANEAN (5<sup>TH</sup>-1<sup>ST</sup> MILLENNIUM BC)

Proponents: V. **Roux**, I. **Berg**

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h. 9.00-13.30

Giurisprudenza, Aula V

ABSTRACTS

**Ina Berg**

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WHEEL-FASHIONING TRAJECTORIES IN BRONZE AGE CRETE

It is a commonly accepted fact that the introduction of the potter's wheel on Crete in Middle Minoan IB led to a complete change in the ceramic production from hand-fashioning techniques to the competent and exclusive use of the wheel. The existence of combination techniques, intermediate stages and the possibility of an incomplete adoption of the innovation were rarely acknowledged in the literature. Based on a more sophisticated understanding of forming techniques, this situation is now slowly changing (e.g. Poursat & Knappett 2007), allowing a re-assessment of the development of wheel-fashioning techniques on Crete during the Middle and Late Bronze Age.

Drawing on results from my own X-radiography study of Knossian EMIII-LMII vessels, this paper will demonstrate that the introduction of the potter's wheel did not result in a complete replacement of traditional hand-fashioning techniques and that the majority of medium and large vessels continue to be made by hand even in the Late Minoan period. In addition, evidence for combination techniques is now confirmed; so is the existence of wheel coiling. Wheel coiling and wheel-throwing co-exist and were utilised for comparable vessel types. Finally, comparative data are drawn on to investigate in how far potters across the island are following the same trajectories. While small differences exist between towns (e.g. Knossos and Palaikastro), the most persistent image is that of homogeneity of skill and technique across Crete.

**Marie-Claude Boileau**

Fitch Laboratory, British School at Athens

REASSESSING WHEEL-FASHIONED POTTERY IN BRONZE AGE SYRIA

This paper examines how the fast wheel was used in the production of Early Bronze Age pottery in Syria. Material from Tell 'Atij, a small rural site located in the Khabur valley in northeastern Syria, and Tell Acharneh, a large settlement located in the Orontes valley in western Syria, shows that wheel-fashioned techniques were restricted to the manufacture of serving pots which represent less than 10 percent of the total pottery assemblage. Furthermore, and in contrast to what is often suggested in the archaeological literature, pots were manufactured using the wheel-shaping technique (i.e. coiled roughout shaped on the wheel); a more time-consuming technique than wheel-throwing but which requires high technical investment and



## 6<sup>th</sup> International Congress on the Archaeology of the Ancient Near East

specialized skills. Both case studies highlight the fact that wheel-fashioned techniques were not transferred to other categories of pots and that their use reflects more a need for high quality/socially valuable wares than rapidity of manufacture. Thus the link between wheel-fashioned pottery and fast production strategies has to be reassessed for this period in Syria.

**Lindy Crewe**

Archaeology, University of Manchester

### THE INTRODUCTION OF WHEEL-FASHIONING TECHNIQUES ON LATE BRONZE AGE CYPRUS

This paper explores the nature of the technological innovations associated with the introduction of wheel-fashioning technologies at the beginning of the Late Bronze Age on Cyprus (c. 1650 BCE). The first appearance of wheel-forming techniques is associated with the integration of Cyprus into east Mediterranean trading networks and adoption of Levantine symbols and practices. Seemingly related to a low degree of socio-political integration within Cypriot society, the technology was not adopted uniformly across the island but only by some potters within certain areas, primarily located in the newly established coastal settlements. This partial adoption of the technology resulted in a situation where contemporary potters created identical forms and styles, using macroscopically identical clay preparation techniques, but employing a range of handmade and wheelmade techniques. Contra to common assumptions, the wheel-forming technology does not supplant handmade forms and in fact decreases over time. The Cypriot situation provides another example, increasingly becoming more prevalent within recent research, that social factors are an important component of technological choices.

**Don Evely<sup>a</sup>, Jerolyn Morrison<sup>b</sup>, Doug Park<sup>c</sup> Vassilis Politakis<sup>d</sup>**

<sup>a</sup>Curator, The British School at Athens (Knossos)

<sup>b</sup>PhD candidate and potter, Leicester University

<sup>c</sup>Doug Park, Graduate student, Yale University

<sup>d</sup>Vassilis Politakis, Potter, Heraklion

### MINOAN POTTER'S WHEELS: WHAT CAN THEY DO?

Starting from a series of scholarly reconstructions, a series of replica wheelheads and supporting furniture was made. These were divided between two teams: one based at Knossos (DE, VP), the other at Mochlos (JM and DPP). Both were required to set up the device and then produce, by whatever methods they thought were compatible with our knowledge, a number of typical Minoan vase forms. In this way the limitations and parameters of use were expected to become clearer. So enabling observations on Minoan potting techniques to be made. These aims were generally met, but not always as expected.

**Caroline Jeffra**

PhD Candidate, University of Exeter, Department of Archaeology

### THE INTRODUCTION OF THE POTTERS' WHEEL ON CYPRUS AND CRETE: AN EXPERIMENTAL APPROACH

The adoption of the potters' wheel in Cyprus and Crete represented a significant development in craft production during the Bronze Age. Though the wheel is inarguably faster at producing vessels, the transitional strategy of combining coiling and wheel turning was a step backward in efficiency and requires close attention. An experimental approach is employed in this research to understand the specifics of formation techniques through time, highlighting the dynamic process of learning to use the potters' wheel.



## 6<sup>th</sup> International Congress on the Archaeology of the Ancient Near East

By constructing vessels using differing amounts of coil building and wheel turning, correlations can be drawn with archaeological examples. These correlations serve to address the question of how the wheel was incorporated. This approach explores the potter's perspective while also tracing an "inevitable" change within the craft's technology. The modes of development in craft production are then discussed for each of the differing cultural circumstances of Cyprus and Crete.

**Talia Goldman-Neuman<sup>a,b</sup>, Avshalom Karasik<sup>a,b</sup>, Ayelet Gilboa<sup>c</sup>, Ilan Sharon<sup>b</sup>, Uzy Smilansky<sup>a</sup>**

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### MICRO-VARIABILITY OF CERAMICS - IDENTIFYING THE POTTER

Micro-variability within ceramic production is used in the archaeological and ethno-archaeological literature for various purposes (e.g. assessing standardization, temporal 'trajectories') but it cannot be properly quantified and documented by traditional research tools. Available studies rely on rough metrical measurements, which cannot convey the real intricacy of many ceramic shapes or specific attributes thereof and are not accurate enough for micro scale resolution. The lack of adequate tools has led to incomplete conclusions regarding micro-variability, the reasons underlying it and hence its usefulness as an analytical tool.

3D models can be powerful tools for novel research questions. The computerized archaeology group at the Weizmann Institute of Science in Rehovot (<http://www.weizmann.ac.il/complex/uzy/archaeomath/>) uses a high resolution 3D scanner and accompanying software to explore new horizons of archaeological significance. 3D scanning enables, for the first time, the capture and digitization of the *complete* shape of the artifact, with a high degree of precision.

We report here on the attempts to identify the products of individual potters, based on micro-morphological variation, using an experimental approach. Four modern potters in Israel – an artistic potter, two traditional potters (father and son) and a master-craftsman specializing in creating shapes-to-order – were asked to replicate a wheel-coiled bowl, typical to the Early Iron Age. The four potters use wheel throwing techniques with different tools – two are employing electric wheels and two use the traditional kick-wheel.

The specific objectives of the experiment were: (1) To define the range of individual variability that should be expected in a single production event. (2) To identify the attributes which hold most of the information regarding individual variability. (3) To gain first insights into the causes of archaeological typological variability (temporal and other) of the bowl type in light of the detected individual variability. Initial results will be presented demonstrating the potential of using 3D data as part of an archaeological research program.

**Nava Panitz-Cohen**

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EGYPTIAN INFLUENCE ON THE CERAMIC TECHNOLOGY AT THE TRANSITION  
FROM LATE BRONZE TO IRON AGE I IN SOUTHERN CANAAN

(forthcoming)



6<sup>th</sup> International Congress on the Archaeology of the Ancient Near East

**Valentine Roux**

CNRS, Préhistoire & Technologie, Nanterre, France

EXPANSION OF THE WHEEL COILING TECHNIQUE IN MIDDLE BRONZE AGE SOUTH LEVANT:  
BETH-SHEAN AS A CASE STUDY

The MBII period is considered as a peak in the development of ceramic technology as most of the ceramics are supposed to be wheel thrown. The predominance of the wheel throwing technique has been long explained by the efficiency of this technique for responding to the needs developed by the Canaanite cities. Such a technique would be indicative of full-scale workshop industries (e.g. Franken 1991). However, recent researches have shown that urbanization is not necessarily associated to so-called efficient technologies: the wheel is thus hardly present in the southern Levant during the EBIII period (Roux in press). Moreover ceramics were not wheel thrown, but wheel coiled. Questioning the modalities according to which the wheel was used during the second millennium BC should help us in understanding both the mechanisms underlying its wide adoption and the organisation of ceramic production. For this purpose, ceramics derived from the three late MBII strata excavated in Area R on Tel Beth-Shean have been examined and sampled for petrofabric analysis. Results show that the main fashioning technique was the wheel coiling technique. Different methods coexisted. These results are congruent with the type of wheel used during this period. They also support Maeir's hypotheses about the organisation of ceramic production (Maeir and Yellin 2007).