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# Reflective Mirror-like Objects Made of Obsidian from Anatolia and the Near East

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## Abstract

The so-called ‘obsidian mirrors’ found in Anatolia and the Near East are some of the most remarkable objects produced by prehistoric peoples. However, we know surprisingly little about them. This is partly because interest in these objects has been as a category rather than as meaningful objects.

Our project involves a holistic approach. Our first step was to build a comprehensive database that covers different aspects of the mirrors. This provides a firm foundation on which to base more detailed studies of specific aspects of these objects particularly in terms of their morphologies, technologies, contexts and raw material. In the database we record attributes relating to their dimensions, the nature and treatment of the support and surface treatment including any evidence of shaping, striations from grinding, any macroscopically visible use-wear and so on and, where known, the provenance of the obsidian. We are also developing tribological and functional methodologies to determine the degree of reflectiveness of the ground and polished surfaces; ultimately we hope to compare the finish on the ‘mirrors’ with other ground-and-polished objects. We also aim, where possible, to test our hypotheses by producing and using similar objects.

Some initial studies of the consistency of the level of grinding and polishing of the surface using confocal microscopy and interferometry and determine their SPA and Porosity has already been undertaken and we intend to develop this using, for example the refractive indexes (RI) and surface topographies of different types of ground-and-polished obsidian objects. RI can be determined using the ‘optical natural glass property test’ by the oil immersion method or by Glass Refractive Index Measurement (GRIM); glass density measurement will also be considered using a variable density fluid method.

Experimental studies (e.g. Vedder 2005) have already demonstrated that polishing required the use of progressively finer grinding media and imply considerable investment in time as well as in design and technological knowledge which suggest that they were not everyday items.

In parallel to the material studies outlined above we are researching the use of ‘mirrors’ in other cultures of all types to investigate practical and symbolic uses in different cultures

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and contexts.

In our paper we hope to demonstrate how holistic studies can develop and recontextualise our understanding of ‘mirrors’ and other objects.

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