

Survey, sense and sensibilities: reflections on old and new spatial archaeologies on the Project Panormos Survey

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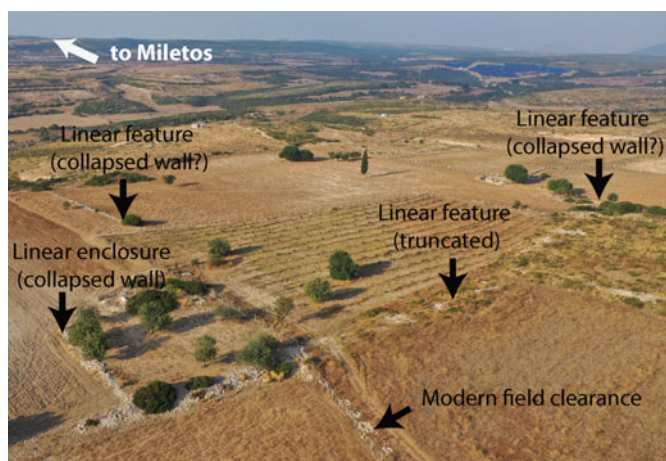
Archaeologists depend on understanding the spatial relationships of artefacts, monuments and organic remains to create temporal narratives of the past. For excavation, the most important spatial relationships are ‘vertical’: soil strata provide clues to the relative temporal sequence of archaeological deposits and their contents. For surface survey, archaeologists focus instead on ‘horizontal’ data to create two-dimensional distribution maps of finds and features whose temporal positions must be established not from space but from similarity to objects whose dates are already known. Surface survey has thus often been viewed as inferior in the hierarchy of archaeological methods.

Paradoxically it is seen as both a necessary prospection practice for ‘new’ archaeologists in search of an excavation and yet dependent on pre-existing excavation data if its results are to be chronologically meaningful. Surface survey has a long tradition in Turkey, but the bureaucratic relationship between excavation and survey in the permit system remains asymmetrical: excavation permits can include survey, but not vice versa, and this restricts the possibilities of more flexible or hybrid methods such as sample test-trenches and survey-oriented geomorphological coring. The vast majority of survey projects in Turkey continue to focus on extensive methodologies in which site prospection (i.e. identifying ‘new’ or rather previously unpublished ‘sites’) is the priority. While these generate important information, prospection is only one potential application of survey, and increasingly it is being realised that a variety of spatial and scientific methods should be brought together to realise survey’s full potential. Landscape survey can tell us about agricultural economic regimes, degrees of settlement aggregation and dispersal, and human-nature interactions over much wider areas than the scale of a single site. Moreover, considerable discussion in the survey literature has questioned the usefulness of the concept of archaeological ‘sites’ itself (still endemic in modernist and geometrically defined heritage inventories), which artificially places boundaries on our imagination of ancient human activities around discrete points, when in fact human lives have always been played out across larger spaces, at both places and in-between places.

The Project Panormos Survey was begun in 2015, and grew out of a three-year excavation of a necropolis at ancient Panormos, dating to between ca 700–500 BC and located near modern Mavişehir, Didim, which lies on the ancient Milesian peninsula. In contrast to the traditional pattern, the primary aim of the survey has never been prospection or the planning of new excavations, but rather horizontal contextualisation

and consolidation of pre-existing knowledge to create a new understanding of how the wider human and natural landscapes of this important region on the eastern side of the Aegean changed through time. From the outset, intensive fieldwalking methods, modelled on tried-and-tested visual-sense strategies used in Greece, have formed a central pillar of investigation. Systematic fieldwalking involves teams of trained archaeologists or students walking spatially bounded ‘tracts’ in straight lines, counting and/or collecting visible archaeological remains from the surface as they walk. The resulting map of finds provides a detailed insight into the density of human occupation of an area; and where finds can be dated (whether macroscopically by shape, microscopically by material or by using relevant archaeometric techniques), a story of fluctuating intensity of occupation over the *longue durée* can be told in map form. Project Panormos relies on pre-defined spatial grids, GPS devices and data aggregation servers to define tracts and collect data rapidly, and to facilitate rapid ‘open data’ release (Strupler, Wilkinson 2017). In 2019, fieldwalking was directed at a ridge running inland from the harbour of Panormos where finds from the Early Bronze Age were found in 2018. Here, further finds from the Early Bronze I period, including broken obsidian sickles, large pithos fragments and polished stone axe-heads, demonstrate a widely dispersed, low-intensity usage of this area of the peninsula during the early third millennium BC that was entirely unknown until now and would have been difficult to demonstrate without intensive methods. This same area appears relatively unoccupied until the third century BC, from when we have the first finds of Hellenistic date found during intensive fieldwalking. These are perhaps associated with an expansion of agriculture, as documented by the scattered stone banks that are visible on aerial photographs and satellite imagery as linear features across a large swathe of the peninsula, some of which are visible in the area walked in 2019 (Wilkinson, Slawisch 2020). The *lack* of evidence from certain periods is naturally as interesting as evidence of positive presence. This is another strength of the intensive approach: the identification of ‘empty’ tracts as well as ‘full’ ones, which consequently opens new questions.

While remote sensing in the form of aerial photography has been an essential tool for archaeologists for over a century, it is only very recently that model aircraft technology has progressed to a point where it is feasible and economical for every project to own and use its own drone or UAV (unmanned aerial vehicle). In 2019, Project Panormos secured permission for drone photography for the first time.



Drone-based aerial photograph of ancient field systems of uncertain date (photo Toby Wilkinson).

As accessibility to the technology has increased, so sensitivities about safety, privacy and security have risen worldwide. Turkey is no exception, with new regulations and permission systems now in place. There are two primary uses for drones in archaeology at present. One is simply the generation of spectacular images of monuments and landscapes which aid viewers' imagination of the past. For Project Panormos, oblique-angle drone photographs of the entrance to the Panormos harbour enable us to illustrate dramatically the likely change to the sea-line. The other is the application of photogrammetry, today usually achieved through SfM (structure-from-motion) methods. These combine multiple overlapping photographs to generate: (1) orthophotos (flat aerial imagery) of very high resolution; (2) DEMs (digital elevation models) that allow easy digital mapping of topography; and/or (3) three-dimensional digital models of large monuments, which allow faster measurement and exploration of structures compared to the laborious methods used in the past. For survey globally, the ability to generate royalty free orthophotos and DEMs for scientific research is set to become an essential tool both for visualising results and for understanding taphonomy, i.e. processes of landscape change such as erosion and alluviation that can have selective effects on what remains are ultimately found on the ground. For example, on Project Panormos we are starting to use the DEMs derived from the 2019 drone flight to understand the taphonomy around the Early Bronze Age remains mentioned above. Moreover, 'machine learning' techniques offer the possibility of semi-automated prospection and find counting as a regular part of intensive survey in the not too distant future (Orengo, Garcia-Molsosa 2019). For Turkey to lead the way in this kind of archaeology, however, it is essential that the regulatory burden is commensurate with the risks – real but often exaggerated by the global media – that UAV flights pose.

Spatial archaeology and landscape survey requires reflection on both our immediate senses and on our wider

sensibilities of human-landscape relations. The Project Panormos Survey is part of a healthy renewal of interest in holistic landscape study in Turkey, of which the British Institute at Ankara is a major supporter. Nonetheless, in the minds of many members of the general public, archaeology still equals excavation. It is time this picture was changed so that systematic survey becomes recognised as equally important in understanding the past and the barriers to sharing insights and results from excavation and surface survey are removed.

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More information about this survey project is available at: <http://www.projectpanormos.com/>



Drone-based aerial photograph showing reconstruction of the ancient harbour of Panormos (photo Toby Wilkinson).

References

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