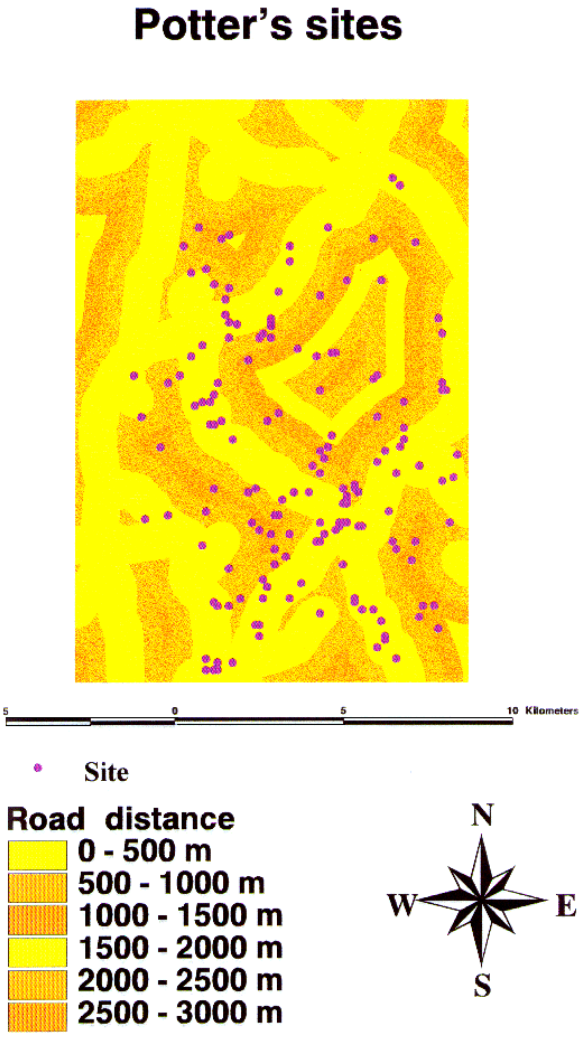
THEN DIG

Peer-reviewed archaeology blogging



Distances in landscape archaeology

Distance is one of the easiest geographical attributes archaeologists can measure these days. The availability of digital data and the existence of free data providers such as Google Earth mean that the location of virtually every place on the Earth can be measured in relation with another. Computerized tools such as AutoCad or Geographical Information System allows measuring distances with precision; in addition, the latter allows manipulating distance measurements in

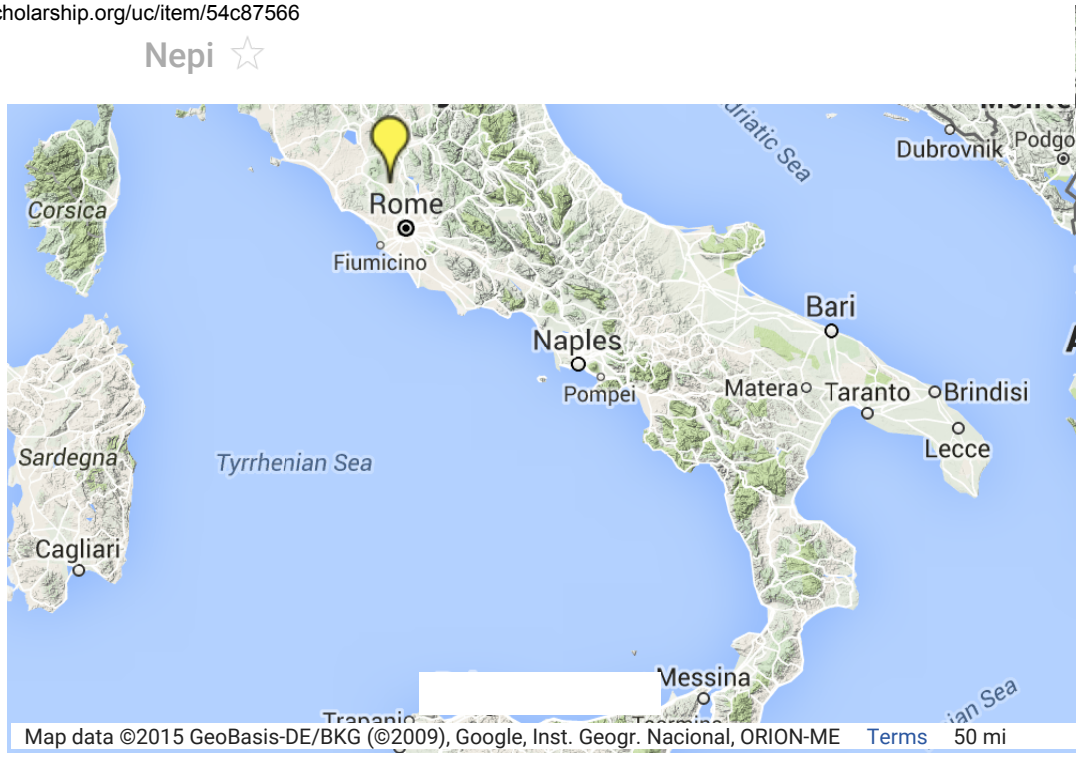
different ways and creating visualisations of different kinds of distances. However, not all distances are archaeologically significant.

Distances have to be substantiated in archaeology. They have to relate to something tangible, something material. Distance is a corporeal quality in a physical world. We have to find dating evidence to measure distance between two ancient towns, different archaeological sites or two find spots. In addition, there is a cost to be measured and this can be measured in distance, energy or speed. Now matter how the measurement is made it has to connect two points that had significance in the past.

Distances do not exist only on the paper maps or digital coverages but in our minds. We evaluate distances and attach values to them. We consider affordances (Gibson 1979) and take journeys on that basis. We use our subjective mental maps (cf. Ekman and Bratfisch 1965; Gold 1965; Gold and White 1974; Downs and Stea 1973; 1977) and behave accordingly (cf. Guttenplan 2000, 17-26).

People have through time had different preferences. These preferences guided travel and potentially made daily lives different from one period to another. One can map these taskscapes (cf. Ingold 1993) through distributions of chronologically distinct finds (Rajala *in press*). Potentially significant distances can be measured between entities. In my own research I have measured the distances between a central place in a territory and datable finds. This approach has shown that the relationship between the ancient town of Nepi and taskscapes changed through time.

Naturally, the distance from Nepi, settled from the 9th century BC onwards, did not correlate with the amount of prehistoric flints in any way. On the other hand, prehistoric pottery (Neolithic – Late Bronze Age/ Early Iron Age) was found farther away from Nepi than any other material group. A respectful distance was left between proper sites; this is confirmed by the existence of the bronze age Il Pizzo at Nepi. There was no correlation between distance from Nepi and the amount of Orientalising and Archaic pottery. However, the distribution was slightly skewed towards longer distances and variance was higher than with any other category. This suggests that the distribution originated from both settlement and funerary sites and was influenced by many varied processes. Dissimilarly, distance from Nepi was almost significantly different between the



units with and without Roman pottery; Roman pottery was found nearer the center. This shows how intensive the Roman land use was and how rural settlement started from the outskirts of the town unlike during the previous periods. The town had pulling power.

On the other hand, the distances affect archaeologists intellectually. We have our own mental maps moulded by our interests, attitudes and values. The archaeological attitudes towards meaningful change and this can be measured in distance. I showed some time ago (Rajala *et al*. 1999) how road networks defined landscape in archaeological survey in central Italy during the 20th century.

Roman archaeological remains as a dominant feature guided archaeological research in the area (cf. Ashby 1927; Fredriksen and Ward Perkins 1957). Archaeologists followed the Roman roads and looked for visible remains in their vicinity.

This classical emphasis became weaker towards the end of the 20th century when blanket surface survey became a standard method. For example, Potter's (n.d.) survey in the southern Faliscan area as part of the groundbreaking South Etruria Survey (cf. Potter 1977; Patterson 1998; Coarelli and Patterson 2008) on the western side of the Tiber aimed at exploring sites in all accessible fields with surface visibility. This can be measured by defining the distances between the known Roman roads and the surveyed sites and comparing them to those by Fredriksen and Ward Perkins (1957). The difference between two surveys and their mental landscapes can be visualised

through GIS maps (see Figs. 1 and 2). The visualised distances are Carthesian; if the cost of movement, i.e. the roughness and steepness of landscape, would have taken into account, the difference may have been even clearer.

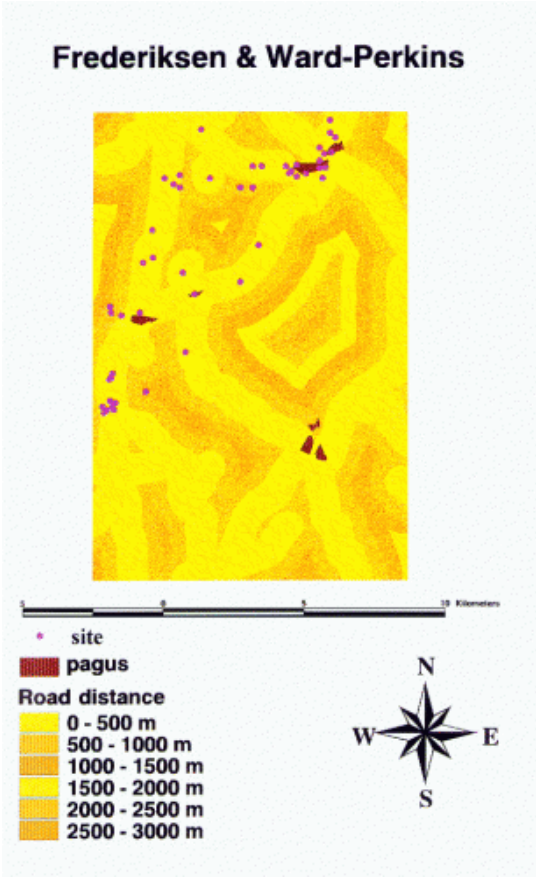


Figure 1

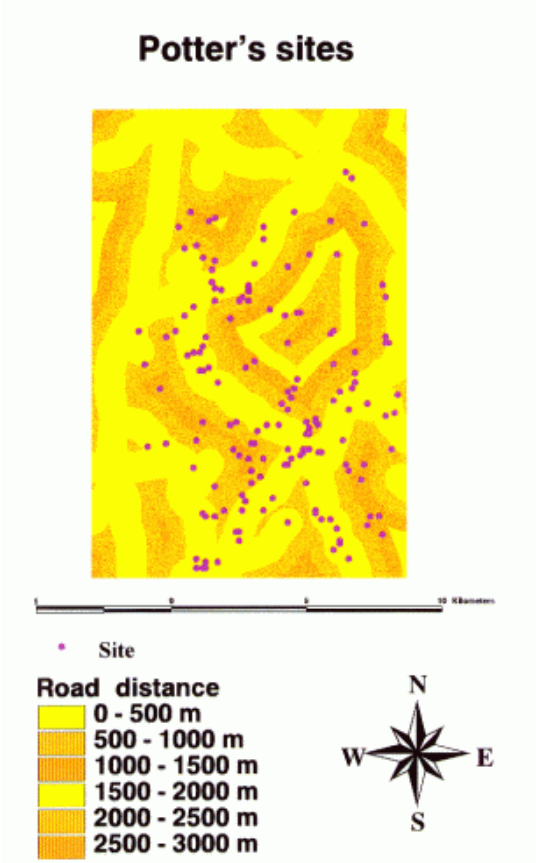


Figure 2

The proof of the bias came through a simple statistical analysis. Nearly all sites visited by Fredriksen and Ward Perkins (1957) located less than 500 metres from a Roman road. A one-sample chi-squared test confirmed that the H0 hypothesis could be rejected with complete confidence. This showed that Roman roads affected the discovery pattern and that this survey method resulted in a distorted picture of the real settlement pattern. In contrast, the sites Potter surveyed (listed in Potter n.d.) located in average at 550 m from the Roman roads. The chi-squared test showed that the chi-squared was clearly lower than the μ-value at the 95 %level of significance. The distance from Roman roads did not affect the finding of sites.

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