## Mapping the Origins of Migrants in Imperial Rome

Of the many recent studies regarding migration in the ancient Mediterranean, those concerning the migrant population of the city of Rome are among the most numerous due to the city's rich evidentiary material, including its immense body of funerary epigraphy (Noy 2000; Tacoma 2016). While bioarchaeology and textual sources make substantial contributions, migrant funerary epigraphy remains the paramount source for studying the origins of migrants in imperial Rome. To date, studies assessing migrant origins epigraphically have primarily sorted and analyzed migrants at a provincial or regional level (Noy 2000). While this provides important insights about the likely origins of the city's migrant population, studies at a higher degree of resolution are possible due to the level of detail provided in some funerary epigraphy. Systematic analysis of migrants by discrete place of origin has been used in other contexts in the Roman world (Holleran 2016; Hin 2016), but not for the city of Rome.

Therefore, this paper aims to illustrate the value of examining the origins of migrants at the local level (city, town, or village) and to show how Geographic Information System (GIS) applications can be used to productively map and analyze those points of origin. This approach produces a richer understanding of the origins of the city of Rome's migrant population and offers additional insights concerning the urban network of the empire and the degree of integration of various regions and localities with the capital. Specifically, this paper demonstrates that statistically significant geographic clusters of origins for epigraphically attested migrants existed both across and within provincial boundaries. Many of these clusters correlate strongly with provincial urban networks and strong local or regional economic ties to the imperial capital (as attested archaeologically and via textual sources). Conversely, the study also reveals areas of

exclusion wherein few or no migrant origins are attested. Although some of these geographic regions lacking many attested emigrants are unsurprising (Britain), some areas often thought to have been well integrated into imperial economic and political networks are surprisingly lacking in attested emigrants (Tripolitania and Cyrenaica). These are patterns that are unobservable without a focus on the localized origins of migrants and the use of GIS applications, but which provide important evidence for the operation and impact of the Roman Empire on provincial development and interregional connectivity.

Structurally, this paper is centered on the analysis of over 1,300 epigraphically attested migrants in the city of Rome from the 1st to 5th centuries C.E. from which corpus there are nearly 600 individuals with a specific locality of origin indicated. Using mapping resources such as Trismegistos Places, it is possible to pinpoint some 230 different ancient localities from which these epigraphically attested migrants hailed. This allowed for the creation of a database encoding information about the individual migrants and their localities of origins including latitudinal and longitudinal coordinates. Using ArcGIS, the points of origin were overlayed onto topographical and hydrological maps of the Mediterranean from which statistical analyses were performed (such as kernel density estimation tests).

The paper also necessarily considers methodological issues such as the inherent complications of using epigraphically attested individuals as a proxy for measuring demographic features of a wider migrant population, as well as general issues of epigraphic habit (MacMullen 1982). Furthermore, conclusions about migrant origins drawn from funerary epigraphy are contextualized by discussing alternative evidentiary avenues such as bioarchaeology (Prowse 2016) and comparative historical methods (Moch 2003). Noteworthy phenomenon in the dataset are also given attention including the dearth of epigraphically attested Italian migrants and differential patterns of military and civilian migration and commemoration. Despite the limitations of what epigraphy can tell us about migrants in Rome, particularly given the long time series involved, detailed statistical analysis of epigraphy remains an avenue for better understanding the migrant population of imperial Rome and how migration related to the wider impacts of the Roman Empire on Mediterranean connectivity.

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