

Centre and periphery – dealing with uncertainties of demographical estimations

By Knut Rassmann

In his discussion paper Robert Schumann discusses two estimations of the population size of the Heuneburg settlement agglomeration in Ha D1, as published by Siegfried KURZ (2010) and Manuel FERNÁNDEZ-GÖTZ and Dirk KRAUSSE (2016). S. Kurz estimated a total of c. 5000 inhabitants. Taking a closer look at the study of Fernández-Götz and Krausse it becomes clear that their numbers are based more or less on these estimations. Kurz' calculations derive mainly from the spatial size of the three areal units of the Heuneburg complex, the hilltop plateau, the lower town, and the outer settlement. The estimation of 5000 inhabitants published in 2010 already is a modification of Kurz' first consideration from 2006, where he reached a significantly lower number of 1500–2000 inhabitants. This modification indicates the general uncertainties accompanying demographical estimations, which might explain the fact that the Heuneburg, as one of the best investigated Iron Age complexes in Central Europe, over decades remained without any published estimations of the population size.

We may ask whether or not the number of inhabitants of a settlement in general and a presumed political centre in particular matters at all. In fact, as Robert L. Carneiro and others have shown, the impact of population size on the social structure of a society is fundamental (CARNEIRO 1987, 111–128; CHAMBERLAIN 2006, 4 f. and see below). While the social structure of the Heuneburg community was broadly discussed in the last decades, including the interpretation of the Heuneburg as *Fürstensitz*, it is interesting to note that key studies in the 1960s, 70s and 80s, published as part of the series “Heuneburgstudien”, are dealing only in a modest way with social aspects (cf. SIEVERS 1984, 89). An explanation for this might be the effort to deal with the challenging publication of a huge amount of empirical data. This process might have tied up the research resources considerably, but it also hints at the methodological difficulties to use the rich empirical data for developing a quantitative perspective on the Iron Age society. This focus on the sheer amount of data rather than on theoretically based social modelling might also be understood as part of a more general trend in Prehistoric Archaeology in (Western) Germany in these decades (GRAMSCH 2011). The shift towards a more socio-archaeological orientation then took place in the DFG founded Schwerpunktprogramm SPP 1171 “Frühe Zentralisierungs- und Urbanisierungsprozesse. Zur Genese und Entwicklung frühkeltischer Fürstensitze und ihres territorialen Umlandes” (http://fuerstensitze.de/1062_Home.html; cf. KRAUSSE 2010; NAKOINZ 2013).

Recent decades are witness to a widening of both research questions concerning population sizes and structures and tools to reconstruct and approach both. Today it becomes obvious that the necessity to consider the relationship between house density, accumulation of archaeological finds, and population size was already anticipated in the analytical approaches of the early Heuneburg researchers. As Schumann rightly notes, as early as 1982 Heinrich Härke suggested between 1000 and 2000 inhabitants extrapolating from the excavation plan of the plateau (HÄRKE 1982, 193). This later was criticised as a “rather generous” estimation. Following Härke's estimation a second one – again from outside of the narrower circle of Heuneburg researchers – was presented by Peter WELLS (1985), who spoke of several hundred inhabitants for the plateau. Unfortunately, these first estimations did not inspire further research on this topic or a constructive debate on it. In an incidental notice also Helga VAN DEN BOOM (1995, 226) mentions a population of 800 inhabitants by discussing the remarkable low amount of ceramic vessels for the Periods IVc–IVa/1.

It is the merit of the SPP “Fürstensitze” to have transferred the debate on this issue on another level. A most valuable contribution was S. Kurz’ research on the outer periphery of the settlement. The new discoveries of a much larger settlement area of the Heuneburg also effected the demographical estimations. Kurz located around 50 farmsteads in the outer settlement, each of them occupying, according to the prospection and excavation data, c. 1.0–1.5 hectares. Kurz assumed they are large enough to comprise ten households with an average of seven inhabitants, leading to a total number of 3500 inhabitants. For the whole Heuneburg complex the inhabitants of the hilltop plateau and the lower town were added with an estimated total of around 1500 persons, leading to the total number of 5000 criticised by Schumann.

Schumann then slightly modifies the assumptions for the estimation / calculation resulting in considerably lower numbers of 500–1000 inhabitants for the hilltop plateau and 200–300 for the lower town, i. e. overall 700–1300 inhabitants. This number is much closer to Kurz’ (1500) and van den Boom’s (800) estimations. The most controversial point was the number of households per farmstead in an area of 1–1.5 hectares. Schumann favours 1–3 households in contrast to the ten households of Kurz.

Also the number of persons per household is considered differently, from around seven (Kurz) to ten (NIKULKA 2016, 130). Also the researchers around Andreas Zimmermann in Cologne discussed this issue, assuming seven to ten inhabitants (SCHIESBERG 2008, 6).

It becomes clear that the number of households per farmstead in the outer settlement is the most sweeping point in the calculation of the population size. To be able to clarify this question we need to discuss quantitative and qualitative data. Excavations in some of the farmsteads could provide more accurate answers. It should be realistic to obtain suitable archaeological data to confine the number of contemporaneous houses in the range between one and ten (cf. CARNEIRO 1987). A second, more qualitative question relates to the function of the farmstead itself. If we consider it to be an economic unit dealing in a certain degree of independency, we must expect a minimal number of labour forces per farmstead. In accordance with this it seems unlikely to me to manage a farmstead or courtyard of 1–1.5 hectares with one to three households only. Here the estimation of Kurz seems more realistic. The methodological challenge for the future is to design a research strategy to evaluate a representative sample of farmsteads in order to provide more precise archaeological arguments for the actual building density and for the number of households per farmstead, yielding evidence for the chronology and the question whether all 50 farmsteads existed at the same time, and for their economic background.

The calculation of S. Kurz and its evaluation by R. Schumann must be seen as part of the wider discourse on the Late Iron Age society. The considerations of the population size clearly illustrate the uncertainties, but they also enable an even more precise view on the decisive empirical and quantitative data. Kurz’ study and Schumann’s discussion are valuable contributions to improve the discussion generally and to specify research questions and qualify our analytical approach in the use of the rich empirical data. Finally, all the criticisms are valuable to optimise the strategy of field research. That means, dealing with demographic estimations of the Heuneburg requires considering the different quality of the fundamental empirical data. Precise and representative data only exist for the hilltop plateau and the lower city but not for the periphery where the new research opened relative small windows. The merit of Kurz’ research, as mentioned above, is to have widened the research perspective to the periphery of the Heuneburg. The reductive perspective on settlements or their core areas prevailing over many decades is not a specific shortfall of the Heuneburg research, it characterises research on hillforts and fortified settlements in different periods as is visible, for example, in a similar constellation in the focus on tell settlements in the Neolithic

of south-eastern Europe and beyond. The need to investigate the settlement as whole as well as its periphery and the wider settlement landscape is obvious but as standard of archaeological research it is rather a trend of the last two decades.

S. Kurz concludes his 2010 study with the discussion of the social organisation, finally juxtaposing Big Man society and chiefdom. It is obvious that the discussion of population size should not be seen as a separate topic but as one proxy in the context of social organisation. Based on empirical data from ethnological research Robert L. Carneiro concluded that the complexity of social structure correlates with population size. However, the differentiation is not linear but progresses in leaps of c. factor 10. The consequence for our discussion here is that in fact we may neglect whether the community at and around the Heuneburg numbers 2000 or 4000 or 5000, since the complexity of its social structure remains the same. An effect on the quality of social differentiation would be achieved only with a rise to a magnitude of 10 000 inhabitants or more. We therefore need to ask if we consider the factual community to be restricted to the area of the Heuneburg and its nearer surroundings *sensu stricto* or if we assume that the Heuneburg area represents an agglomeration which is the centre of a wider political territory and thus the factual community is larger than the 2000–5000 inhabitants. In the latter case we would have to widen our research framework. This in turn highlights problems arising from archaeological research that all too long focuses on prominent sites and their nearer surroundings.

So we may conclude that at this stage Kurz' conclusions on the social organisation might be not right, but they are a consistent step. However, these aspects still need to be discussed further and in more detail. A look on the implications of the different demographic scenarios would be essential to sharpen the understanding of the scale and effect of uncertainties in estimation of population.

Reply: Debating demography

By Robert Schumann

The discussion section initiated after the submission of the original paper comprises three comments, two rather brief ones by Knut Rassmann and John Bintliff and one extensive comment, which is rather a paper on the demography of the Heuneburg in itself, by Krausse et al. Whereas Krausse et al. focus narrowly on the demography and offer new insights from the insider perspective of the excavating team, Rassmann focuses mostly on the concepts connected to the Heuneburg demography and Bintliff gives a broader perspective. With this corpus of ideas, critiques, and estimates the initial paper has already fulfilled its main purpose: to trigger a more intensive debate on the published numbers (and some of their implications).

All participants in the debate, including myself, probably agree that the Heuneburg is outstanding in many different ways, has already triggered crucial research and debate into the societies of the early Iron Age in southern Central Europe, and will do so for many more years to come. And it stands out no matter if we are talking about 2000 or 5000 or even more inhabitants. As such one might ask, as Bintliff and Rassmann do, why it matters so much. Whereas for the questions of social mechanisms, I would agree that it does not matter so much, these numbers clearly evoke pictures and associations, especially when communicated to a wider public, and I would suggest that we do not take this lightly. Furthermore it matters for questions of how the Heuneburg is evolving and where this constant stream of settlers was coming from. And at the end of this