Social Interaction and Hierarchy in Epistolary Networks

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This poster presents the outline of my upcoming research project involving network analysis, entitled 'Social interaction and hierarchy in epistolary networks'. The project aims to map patterns of social interaction between people occupying unequal social, or in the case of the administration, hierarchical positions in Graeco-Roman Egypt (330 BC – AD 300). The material for this study consists of the formulaic framework of the documentary papyrus letters. The selection of formulae (e.g. salutations) reflected the social status of sender and addressee, which provides us with an excellent dataset for this enquiry. In practice, it will be established which conventional epistolary phrases where used by whom when writing to whom. Patterns observed in the cases in which the hierarchy is known will be extrapolated to determine the hierarchy between groups who also wrote letters but whose relative hierarchy is unknown.

Papathomas (2007) and Clarysse (forthcoming) examine the use of epistolary formulae in a qualitative way for a limited sample of letters. A digital approach enables an encompassing study of the material. The databases which will be used for this project contains 6.897 letters, in Demotic Egyptian, Greek and Latin. They are integrated into the relational structure of the *Trismegistos* database (www.trismegistos.org), which means that much relevant information about the letters (e.g. date, provenance, type, people mentioned, etc.) is readily available and can be queried.

To detect and analyse patterns of communication, the epistolary corpus will be visualised in the form of directed bimodal networks. Broux and Depauw (2015) have already shown promising results in applying multimode networks to a smaller epistolary corpus. In this case, the node categories consist of epistolary formulae on the one hand, and people (as senders and addressees) on the other. Indicators of status are included as attribute. This way, the large corpus with multiple characteristics is structured in a more comprehensible and explorable way. In addition, statistics can be run to facilitate the detection of patterns. The attributes can be used as a basis for aggregation, in order to create bimodal networks connecting larger social groups to formulae, complementary to the basic bimodal individuals – formulae networks. These networks can then be used to study the interaction between groups as a whole, rather than between individuals.

The poster will present the general project outline and show some preliminary examples of networks. It aims to demonstrate the advantages of complementing qualitative reading of the letters with a digital and quantitative approach. One such advantage is the fact that network analysis generates patterns based only on the data as represented by the sources, and it thus allows us to bypass our own ideas, based on present-day experiences, about which formulae are to be considered polite or impolite. In this way, the digital network approach to the letters might lead to counterintuitive results.

References

Broux, Y. and Depauw, M. (2015) 'Developing Onomastic Gazetteers and Prosopographies for the Ancient World through Named Entity Recognition and Graph Visualization: Some Examples from Trismegistos People', in: L. Aiello and D. McFarland (eds.), *Social Informatics. Revised Selected Papers*, Heidelberg: Springer, pp. 304–313.

Clarysse, W. (forthcoming) 'Letters from High to Low in Papyri of the Greco-Roman Period', in: J. Cromwell and E. Grossman (eds.), *Beyond Free Variation: Scribal Repertoires from Old Kingdom to Early Islamic Egypt*, Oxford: Oxford University Press.

Papathomas, A. (2007), 'Höflichkeit und Servilität in den griechischen Papyrusbriefen der ausgehenden Antike', in: B. Palme (ed.), *Akten des 23. Internationalen Papyrologenkongresses: Wien, 22.–28. Juli 2001*, Vienna: Verlag der Österreichischen Akademie der Wissenschaften, pp. 497–512.