Workshop "Network Theory, Cognitive Science, and Historiography"

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In October 2014, 23-25, the Institute for the Advanced Studies of Religion (Toronto) and the Department for the Study of Religions, Masaryk University, in cooperation with the Czech Association for the Study of Religions, sponsored a series of informal discussions on "Network Theory, Cognitive Science, and Historiography" held in Brno, Czech Republic. The goal of this small workshop was to initiate discussion about the relationship of these three areas of inquiry. Participants in these discussions included: Dr. Leonardo Ambasciano (University of Turin); Dr. Aleš Chalupa (Masaryk University); Professor Anna Collar (Aarhus University); Tomáš Hampejs (Masaryk University); Dr. Stefanie Holder (Göttingen University); Vojtěch Kaše (Masaryk University/University of Helsinki); Justin E. Lane (Oxford University); Professor Luther H. Martin (University of Vermont); Professor Panayotis Pachis (Aristotle University of Thessaloniki); Dr. Dalibor Papoušek (Masaryk University); Iakovos Sifakis (Aristotle University of Thessaloniki); Dr. Pavel Titz (Charles University); Professor Donald Wiebe (University of Toronto; Visiting Professor, Masaryk University); Dr. David Zbíral (Masaryk University). The workshop opened with a plenary presentation by Professor Anna Collar, author of *Religious Networks in the Roman Empire: The Spread of New Ideas* (Cambridge: Cambridge University Press 2013), on the use of network theory as a method for the study of ancient religion. The response to her presentation by participants in the workshop split into enthusiasts for this approach and skeptics about the theoretical significance of a descriptive, although valuable approach. In what way does the current resurgence in network analyses differ from the sociological analyses of networks in the 1960s? In what way is this current research informed by chaos theory? And by Big Data approaches? In other words, the theoretical nature of network analyses remains to be identified as does the value of its resurgence.

A related discussion revolved around the transmission of religious innovations throughout networks. Collar maintained that religious innovations are based on strong network ties, or webs of clearly and closely defined relationships. In order to take over religious rituals from others, she maintained, we need to trust them. Since, however, strong ties tend to resist openness to outsiders, Martin wondered whether religious innovations

might more effectively spread through weak or relatively loosely defined network ties that seem to be more open to innovations of any kind.

Panayotis Pachis, with Iakovos Sifakis, argued that while network theory may be a useful tool in the study of religion it does not provide us with certainty. Echoing earlier questions, they argued that network theory merely sets the parameters within which a certain theory of the dissemination of a certain religious innovation must fall. Similarly, Justin Lane argued that network theory will never show you how it has been; it will show you, however, how it cannot have been and, consequently, should be used to disprove theories rather than to prove or to generate them. Professor Donald Wiebe, on the other hand, maintained that interpretation cannot be taken over by computers, especially in textual research. There are too many variables and so computerized network models may be futile.

David Zbíral remarked that historians have traditionally filled in the gaps of the historical record with narratives and that network analyses can do something similar. Luther Martin suggested, however, that since network analyses stay closer to the sources than invented narrative, they can be regarded as more objective. Collar agreed but noted that historians nevertheless work with highly subjective sources.

According to some participants, a network model should be built on and derived from the available data. Others argued for a theory before data approach in which complex theoretical models are constructed on the basis of mathematical/computerized models and then tested against the historical data. The argument for this latter approach is that historians constantly suffer from a lack of data. To base a theory on data thus means that one bases a theory on an incomplete data set. If, on the other hand, one constructs a theory on the basis of mathematical/computerized models and then tests it against the available data, one minimizes the problems that come with incomplete data sets.

Martin attempted to bridge the gap between network theory and cognitive science by suggesting that recent network theory, as derived from chaos theory, has transformed earlier descriptive analyses into a theoretical position. By focussing on cognitive and neuroscience theories, he suggested that a spatial location in a network might be facilitated by the activations of place, directional, and grid neurons, a position he has argued earlier with respect to the distinctively spatial location afforded Mithraic initiates by the "reduced" cosmological orientation of their mithraea (Luther H. Martin, *The Mind of Mithraists: Historical and Cognitive Studies in the Roman Cult of Mithras*, New York: Bloomsbury 2015, 75-88).

Tomáš Hampejs, Aleš Chalupa, and Vojtěch Kaše presented a new project for the study of religion, which Hampejs described as, (1) a data-fo-

cused approach, using (2) methodologies that allow for new representations to arise from a reorganization of the existing data, (3) providing models for areas in history where there is no or a lack of data, (4) providing models created on the basis of theory instead of data, which can then be tested against data, (5) making use of controlled and tested speculation (thought experiments) and (6) combining induction and deduction. This truly interdisciplinary approach, which addresses a number of issues raised earlier, might lead to new avenues in the study of religion.

Chalupa presented a case study for the proposed project which would examine possible origins for the Roman cult of Mithras. On the basis of a list of assumptions and a detailed map of Roman roads he proposed to run simulations of the spread of the cult of Mithras and thus determine which of the three suggested places of origin is the most likely. Kaše presented a second case study which would examine the relation and effects of the link between behavior and belief in supernatural effects of these behaviors. When there is too little cognitive attraction, believers will be likely to want to adopt innovations; when there is too much, they are likely to become conservative. A model can show how innovations move through societies. This model shows that it is almost impossible to eliminate cognitive attraction in the development of religious ritual. So, the zero-sum hypothesis has been disproven.

Leonardo Ambasciano presented a spirited defence of a cognitive historiography. He argued, in part, that since our cultural expressions are based on evolutionary history, methodologies from evolutionary biology can be used in the study of cultural and historical phenomena or, at the least, these methodologies should be taken into account.

Some participants questioned the usefulness of evolutionary theory for historians, the main issue being the speed with which evolution can affect the minds of *Homo sapiens*. By and large everyone agreed that while biological evolution is measured in geological time, it will probably not notably affect the human mind in historical units of hundreds or even thousands of years. Consequently, how far evolutionary theory can be regarded as a helpful tool for historical research becomes questionable. A second discussion revolved around possible interactions or non-interactions between cultural and biological evolution.

Rather than as in a "conference" where scholars come together and simply read papers, we organized this small meeting as a workshop where scholars might present ideas and where the main event might be discussions of those ideas. We were most gratified with the success of this format. Not only were ideas discussed following the presentations but these discussions continued during coffee breaks, lunch breaks, and over dinners. And, while the topic of the workshop, the relationship between

"Network Theory, Cognitive Science, and Historiography," might seem a substantial overreach for a two day gathering – and, of course it was – the topic was nevertheless exploratory while still having enough theoretical focus to allow for a productive and stimulating exchange of ideas.

Issues of importance for further discussion that were identified in this workshop, include: (1) clearly identifying the theoretical basis for network analyses; (2) determining whether there really has been any theoretical advance in network analyses over earlier sociological ventures; (3) clarify the differential relationship of strong and weak ties for the transmission of information over networks; (4) ascertaining whether there is any relationship between network theory, once clearly identified, and historiography; (5) further exploring the relationship between network analyses, the insights of cognitive theorists, historiography, and biological evolution; and, finally, (6) determining the extent to which computer modelling of networks can take account of cognitive variables, and how it might contribute to the work of historians. The project proposal by Hampejs, Chalupa, and Kaše offers a test case for resolving such issues.

We would like to thank all of those who participated in this discussion, especially those who came a considerable distance in order to do so: Leonardo Ambasciano, Anna Collar, Stefanie Holder, Justin E. Lane, Panayotis Pachis, and Iakovos Sifakis. And, we would like to thank Aleš Chalupa, Head of the Department for the Study of Religions at Masaryk University, and the members of that department for hosting this event, and David Mac Gillavry, a doctoral student in that department who took notes on which our reconstruction of the discussions is based, and, of course, the Czech Association for the Study of Religions for its support.

A follow-up meeting on the theme of the Brno workshop is planned for September 2015, 1-4 in Kavala, Greece, sponsored by the Institute for the Advanced Study of Religion, Toronto and the Greek Society for the Study of Culture and Religion.