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NETWORK SCIENCE IN BIBLICAL STUDIES



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István Czachesz, Network Science in Biblical Studies: Introduction
Abstract: This article introduces the special issue of ASE on network science and biblical studies. After a short presentation of network science and the concept of networks, the article discusses the application of network science in three domains: the natural and built environment of ancient Judaism and Christianity, the social networks of Jewish and Christian actors and the analysis of textual corpora. In the next part, some technical terms of network science are clarified. The introductory article concludes with the presentation of the contributions to the special issue.
Keywords: Network Science, Social Network Analysis, Network Analysis of Texts, Historical Network Analysis, Vector Semantics
Catherine Hezser, Between Scholasticism and Populism: Rabbinic and Christian Networks in the Roman Empire 27
Abstract: Between the first and fourth centuries C.E. networks of like-minded individuals who shared certain religious beliefs and practices developed in both Jewish and Christian society. These networks emerged in the context of Roman imperialism which connected, integrated and to some extent homogenized the various sectors of the population through road connections, infrastructure, and Romanization. Both rabbis and Christian leaders tried to distinguish themselves from certain aspects of their Graeco-Roman cultural environment by, at the same time, functioning within it and adopting some of its features. This study compares rabbinic and Christian leaders' networking activities within the shared Roman imperial context of the first centuries C.E.
Keywords: Rabbis, Bishops, Imperialism, Romanization, Communication, Travel
Rikard Roitto, <i>The Johannine Information War:</i> A Social Network Analysis of the Information Flow
Between Johannine Assemblies as Witnessed by 1-3 John 47

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Abstract: Social network analysis is applied heuristically to understand how the Epistles of John attempt not only to promote their vision of the community's identity and theology, but

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also to strengthen their own position in the Johannine social network and weaken the position of its competitors. Insistence on social distance from competing teachings is central to 1 and 2 John, while 3 John is occasioned by the Johannine School being marginalized by an assembly. The errands of these letters can be described in terms of network analysis as attempts to weaken certain social ties and strengthen others to allow the Johannine School more uncontested dispersion of information in the assemblies of the network.

Keywords: Epistles of John, Social Network, Johannine Community, Network Theory, Information Flow, Conflict

Abstract: How successful was the Christian Church's mission to the Jews? The answer to this is a function of numerous factors, such as underlying demographics, fertility rates, competition, and (most importantly) when Christians and Jews severed their ties with one another. Some believe the split as early as 70 CE, but others present evidence that Jews and Christians regularly interacted until the 4th and possibly 5th centuries. In this paper, using computer network simulations that capture various factors, we run a series of models that estimate the proportion of Jewish converts to Christianity from approximately 40 to 600 CE. Our models suggest that whether one considers the Church's mission to the Jews a success largely depends on what one considers a "success." If one measures it solely in terms of raw numbers, then probably not. However, if one considers that the potential pool of Jewish converts was relatively small compared to Gentiles, it was perhaps more successful than many early Church scholars believe.

Keywords: Social Networks, Network Simulations, Early Church, Mission to the Jews, Jewish Converts

Abstract: The article joins the scholarly discussion about the meaning of righteousness language in biblical literature with consideration of changes in the concept from archaic Greek literature to fourth century Christian texts. The article seeks to showcase and evaluate how methods from the area of computational linguistics and distributional semantics can contribute to the discussion. The article suggests that, together with formal network models, namely word co-occurrence networks and similarity networks, the methods reveal changes in large corpora of textual data which are too subtle to be detected by close reading. On the other hand, some questions require or benefit greatly from combining distant and close reading methods.

Keywords: Righteousness, Paul of Tarsus, Quantitative Textual Analysis, Computational Linguistics, Distributional Semantics, Word Co-Occurrence Networks

Tamás Biró, Who Circumcised Abraham?

A Cognitive Network Model for the Interpretations of Gen 17

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Abstract: The verb "to circumcise" in Gen 17:24, and elsewhere in that chapter, appears in the niphal form, entailing a passive meaning, and the agent of the action remaining unknown. At the same time, Abraham's circumcision plays a central role in Judaism. It is not simply the prototype of all subsequent instances of a ritual that is central to Jewish identity; but it is also the starting point of a recursive chain of ceremonies by which any later circumcision acquires its religious significance. Hence, the importance of the agent of the first circumcision. First, I describe how this ritual is embedded in the network of concepts, entities, narratives,

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precepts and further mental representations in Judaism. Subsequently, I shall present a selection of answers from various traditions to the question posed in the title. Then, I introduce a network of meanings, which shall serve as a linguistic model interpreting the agent-less niphal forms of the verb 'to circumcise' in Gen 17. This model yields different interpretations under various conditions, corresponding to various traditions. Consequently, it is argued to describe the computation taking place in the human mind, which is able to produce alternative interpretive traditions.

Keywords: Circumcision, Judaism, Midrashim, Biblical Exegesis, Anaphora Resolution, Simulated Annealing

Abstract: This article puts forward the theory that the Bible is a network of cultural items (memes) that developed through an evolutionary process and has been transmitted for many centuries in a relatively stable form. Biblical cross-references reveal how the verses and passages of the Bible are connected into a network that is analogous to genetic networks in biology. The article presents a network model of cross-references, based on the Treasury of Scripture Knowledge. The article discusses the history of the database and the origin of the references; network statistics that yield insights into the history of the cross-references; node centrality statistics and the popularity of the respective verses in the history of Western biblical interpretation; and the modular structure of the network. The results are interpreted as tentative evidence for the collective behavior of populations in Western history being co-determined by a network of biblical memes.

Keywords: Cultural Evolution, Cross-References, Treasure of Scripture Knowledge, History of Interpretation, Node Centrality, Community Detection

Articles

Abstract: For the gospel passages too, as for any other historical document, it is impossible to interpret their meaning correctly without knowing their context, without therefore assigning them a precise place and time. The scholar of Christian origins is well aware that for the gospels the operation is considered to be mostly impossible, but he cannot resign himself to saying that the original context is irretrievably lost. There are, in fact, a few ways of attempting to recover it. One of these is to try to identify who the recipients of Jesus' words really were; to try in particular to understand to whom Jesus was addressing himself when he said "you". Some gospel pericopes allow this operation.

Keywords: Historical Jesus, Sinoptic Gospels, Exegesis

Abstract: New Testament scholars continue to identify the opponents of John of Patmos and his addressees at Smyrna and Philadelphia—despite John's testimony that "they say they are Judeans and are not, but are lying"—as a Jewish "Synagogue of Satan" (2:9, 3:9), not gentile imposters. Since 2001, David Frankfurter has identified the Smyrnean and Philadelphian opponents as "Pauline or neo-Pauline" gentiles who threatened the Jewish identity of John's con-

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gregations. This proposal anticipated recent Pauline scholarship wary of Christian theological anachronisms, but the resulting "Paul within Judaism" shares more with Frankfurter's "John within Judaism" than with his "Pauline" foil. Refining Frankfurter's hypothesis to distinguish "neo-Pauline" inheritors from Paul promises a clearer view of John, his disciples, and his adversaries in relation to the contested reception of Paul's instructions for his gentile disciples.

Keywords: Synagogue of Satan, Revelation, Paul, Ephesians, Anti-Semitism

Marius A. van Willigen, <i>Philo's and Ambrose's Explanation</i>	
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Abstract: The dreams of the patriarch Joseph (Gen 37), the dreams of the butler and the baker (Gen 40) and the dreams of Pharaoh (Gen 41) are significant dream examples in the Josephnarrative. The Jewish exegesis of these dreams by Philo of Alexandria and the Early Christian exegesis of these dreams by Ambrose of Milan (337-397) will be discussed here. Next, we want to investigate whether Philo's exegesis of the dreams influenced Ambrose's exegesis or whether this is unlikely. Although we know that Philo influenced Ambrose far and wide, his influence on the interpretation of the dreams in the Joseph story seems to have been slight. Further investigation reveals that Ambrose relied on Origen for his exegesis of these dreams. As for the scholarly investigation of the latter, a complicating factor is that Origen's exegesis of Genesis is only partially left.

Keywords: Jewish and Christian Exegesis, Joseph's Dreams, Philo of Alexandria, Origen, Ambrose of Milan, Exegetical Influence

Book Discussion

Discussione del libro di Francesco Benigno, Vincenzo Lavenia, <i>Peccato o crimine</i> .	
La Chiesa di fronte alla pedofilia, Roma-Bari, Laterza, 2021, V + 284 pp. (I Robinson. Letture)	245
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