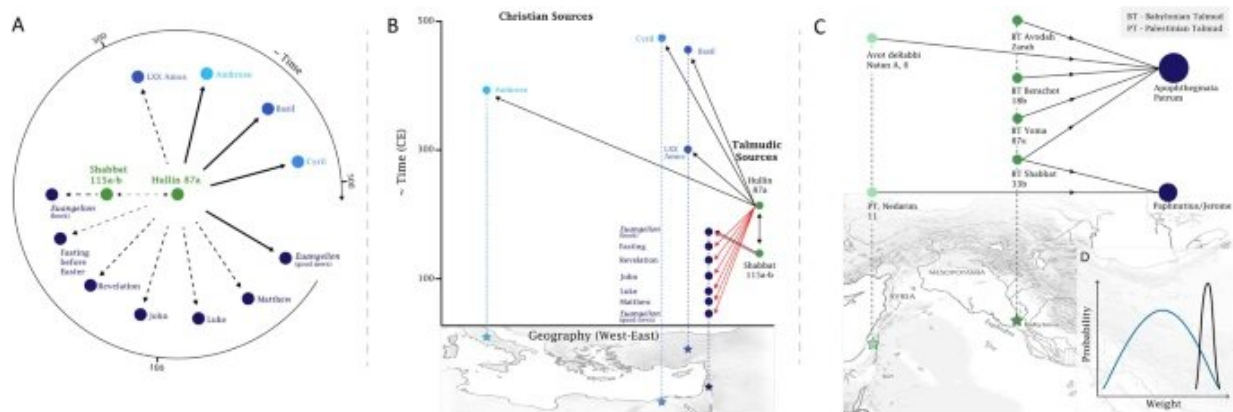


# What do bats, priests and rabbis have in common? Network analysis reveals insights

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Inter-religious literary networks. Credit: *Humanities and Social Sciences Communications* (2023). DOI: 10.1057/s41599-023-01678-y

It could almost be the start of a joke: What do bats, priests and rabbis have in common? The answer: Their social networks can be traced using a new computer science tool called network analysis.

Prof. Michal Bar-Asher Siegal, a Talmud scholar from Ben-Gurion University of the Negev, and Prof. Yossi Yovel, a zoologist from Tel Aviv University, are not an obvious pairing. However, Prof. Yovel is an expert in [network analysis](#), which he uses to research bats. Together with Prof. Bar-Asher Siegal they had the radical idea to apply his methodologies to examine Judeo-Christian relations in the literature

from the early first centuries CE.

Their proof of concept was published in *Humanities and Social Sciences Communications*.

Using passages from the Babylonian Talmud and Christian texts from the first to sixth centuries, which Prof. Bar-Asher Siegal had previously analyzed, they performed the first [network](#) analysis of textual parallels of Christian writings and Jewish sources.

"Our study shows that network analysis of textual parallels using the tools of computer science yield wondrous results. We believe it will really open up the study of relations between the two religions in the beginning of the common era. It has already yielded new insights when applied to our small sample of texts. Who knows what exciting discoveries await when we analyze larger amounts of text," says Prof. Bar-Asher Siegal.

"This is a good example of how interdisciplinarity and the use of tools from one [scientific field](#) can enrich another," adds Prof. Yovel.

While network analysis is not new in the field of digital humanities, it is new to the study of rabbinic and Christian literary interactions. This is the first time an automated analysis of textual parallels was accomplished, according to the researchers.

One of the fascinating benefits of this novel approach is the visualization of the relationships between Jewish and Christian writings to represent sets of temporal-spatial-contextual relationships, which evolved over hundreds of years, in single snapshots.

"The visualizations allow us both to get a clearer picture of the interactions and look at them in new ways, which prompted new

insights," explains Prof. Bar-Asher Siegal.

The evolution of relations between Judaism and Christianity has often been characterized as a "parting of the ways" where, after a specific point, the two religions began to develop independently. While recent scholarly research has challenged that idea, these new visualizations really bring to light how the two religions developed in parallel and in dialog, not separately.

"The application of network analysis makes it possible to identify the most influential texts—that is, the key 'nodes'—testifying to the importance of certain traditions for both religious communities. What did the Jews know? The New Testament or later sources? And which parts of the New Testament? This leads to interesting scholarly questions: why these texts and not others? How did they know and how did they react to this knowledge?" explains Prof. Bar-Asher Siegal.

"The networks we created reveal that rabbinic sources mock and argue against early Christian sources, but less so when it comes to later ones. Moreover, network analysis suggests a correlation between text, time, and geography. Namely, Jewish sources are familiar with early, eastern Christian sources, BUT they show wider geographical familiarity with both eastern and western Christian sources in later periods," according to Prof. Bar-Asher Siegal.

**More information:** Michal Bar-Asher Siegal et al, Network analysis reveals insights about the interconnections of Judaism and Christianity in the first centuries CE, *Humanities and Social Sciences Communications* (2023). [DOI: 10.1057/s41599-023-01678-y](https://doi.org/10.1057/s41599-023-01678-y)

Provided by Ben-Gurion University of the Negev

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