

## **Periodicals in Motion: Textual Reuse and the Hebrew Journalistic Networks in the Second Half of the 19th Century**

The second half of the 19th century saw the establishment of numerous Hebrew periodicals in Eastern Europe and the Middle East that would play a major role in constituting a modern Hebrew “Republic of letters” (Bartal 1994; Segal 2021). In the multilingual context of Jewish communities, Hebrew was not an obvious choice for a journal (Soffer 2009). One of the advantages of the use of Hebrew was that it bridged the geographical and cultural distances between Jewish communities. For diasporic Jewish communities, the Hebrew press functioned as a printed-word public sphere (Penslar 2000). In Benedict Anderson’s terms, these journals had an important role in re-imagining the religious Jewish communities as a modern nation.

The special characteristics of the Hebrew journals—their perception as communal enterprises of writing; the geographical and cultural distance between communities that imagine themselves part of the same entity; and the relatively small group of modern Hebrew writers at the time—takes to the extreme the “network authorship” journalistic model (Cordell 2015). This model was attributed to pre-copyright enforcement era, of the nineteenth-century American antebellum newspapers. It assumes textual circulation and composition that is communal rather than individual. This communal authorship finds its expression, among other things, in the reuse and re-printing of texts. As several studies on non-Jewish newspapers have recently shown, the flow of news items from one journalistic and geographical node to another opens exciting possibilities to understand how journalistic networks form: the major actors taking part in it; the characteristics of “viral” content; and the relationship between its center and periphery.

While previous studies of Jewish journalistic networks used qualitative research methods, this study uses computational tools to provide a wider perspective on the phenomenon of Hebrew periodical networks. Our corpus consists of 13 Hebrew periodicals published 1856-1897, which provides a rounded perspective of the Hebrew periodicals of the time, representing different geographical regions and sects.

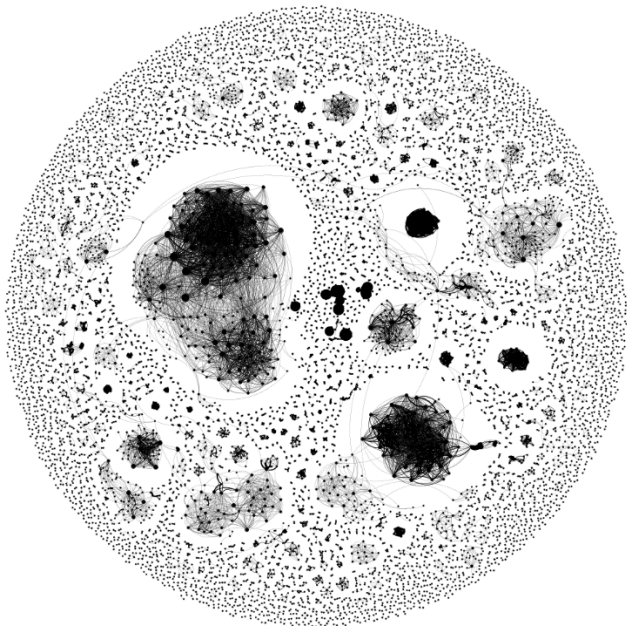
The convergence and divergence of this network, leading up to the establishment of the Zionist movement, is explored through the perspective of textual reuse. Often-concealed textual and social relations between editors, writers, and readers are revealed using a mixed methods approach consisting of text reuse detection algorithms, network analysis methods, and a close reading of the corpus.

Text reuse has attracted considerable attention within historical and comparative linguistics and literature (Olsen et al. 2011; Ganascia et al. 2014; Kokkinakis & Malm 2015) as well as the study of news dissemination in the pre-twentieth-century press (Smith et al. 2013; Colavizza et al. 2014; Vesanto et al. 2017; Sola Corbacho 2019). In this study we use a commercial software, Originality, used by Israeli universities to check the originality of academic work. The software analyzes documents based on a previous corpus, identifying copied passages and sentences and measuring the level of originality. It provides a detailed report for every document, which marks the reused text and its source.

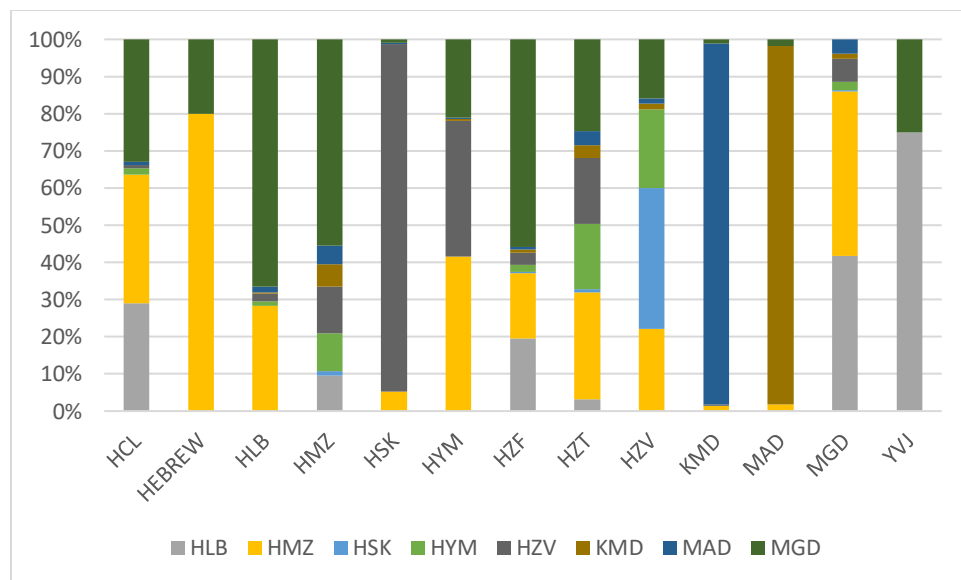
The results are astonishing and prove the existence of extensive and varied forms of textual reuse. The corpus consists of 126,000 journalistic items. We identified some form of textual overlap in 30,000 of these items. The algorithm identified 290,253 pairs of overlapping items, of which 25,758 were copied between different journals (Figure 2). Textual reuse occurred throughout the whole period with alternating frequency (Figure 3). Many of these were occasional overlaps but others created clusters of similarity between journalistic items. The clustering coefficient of the network formed by interjournal reuse, filtered to include only nodes with degree higher than 1 is 0.396 (4420 nodes, 11000 edges) (Figure 1).

Our networks are extremely multilayered since they are at once textual, spatial and temporal. By taking into account

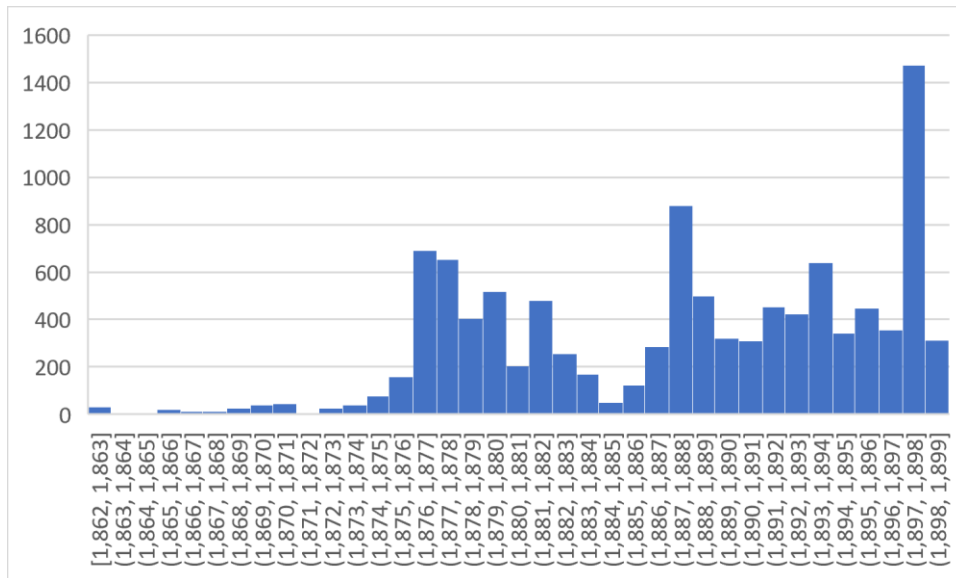
this multiplicity we can evaluate the dynamic formation of a transnational Jewish public sphere. In addition to presenting the project and its ongoing results, this paper will discuss three different ways of evaluating the network: as a static network operating between 1856 to 1897, as separate timestamped networks, or as an evolving network in time. Each has its merits as well as its shortcomings.



**Figure 1:** The network of interjournal textual reuse, 1856-1897.



**Figure 2:** The percentage of interjournal reuse. Columns represent the original publication. The colors encode the re-using journal.



**Figure 3:** The number of interjournal textual reuse with a time gap of no more than 6 months, per year.

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