

Wasserman, M., Zeng, X. H. T., Amaral L. A. N., (2015). Cross-evaluation of metrics of estimate the significance of creative works. *PNAS* 112:5. 1281-1286. www.pnas.org/lookup/suppl/doi:10.1073/pnas.1412198112/-/DCSupplemental.

Cross-evaluation of metrics to estimate the significance of creative works

- The goal was to use statistical models to create an automated method for determining whether or not a film is “significant.” The authors have had previous experience running similar analyses on scientific papers to determine significance, and this paper is their attempt to apply the same methods to creative works as well.
- Wasserman et al. define significance as “the lasting importance of a creative work,” and while they note that measures like the impact, influence and quality of a film contribute to the significance, it cannot be boiled down to any of these. The authors characterize significance as a *latent property*, an intrinsic quality of a film that cannot be directly measured but must be inferred from observable variables.
- They tested the success of their method by comparing it against the database of “culturally, historically or aesthetically significant” films of the National Film Registry in the Library of Congress. This created a binary metric for the films they were testing, whether or not a film was in the database, something that they call a “ground truth.”
- Wasserman et al. recognize three possible sources of data about how well films have been received: professional film reviews (and aggregations thereof), reviews by ordinary people (and aggregations thereof), and automated data (ticket sales, twitter mentions etc.). To these three measures they add a network analysis of the influences films have had on each other that they had assembled from the crowdsourced “connections” lists of on the Internet Movie Database (IMDb).
- In building the model for significance, Wasserman et al., tested Roger Ebert Ratings, Metacritic scores, IMDB ratings and citations, Total citations, PageRank and Long-gap citations to determine which variables or which combinations of variables produced the best predictions for significance.
- Long-gap citation winds up being a really good predictor of whether a film will be inducted into the NFR. With most films the citation model is that films will be referenced frequently after its release and that these citations will taper off as the cultural milieu changes and the film becomes out of date. However, long-gap citation occurs when a film continues to be cited more frequently 20 to 25 years after its release.

Some questions:

- Why do we need this method for determining significance when it is deemed credible because its results mirror the Library of Congress’s National Film Registry? What new insights or information does this method provide to us that we could not have been learned otherwise?
- Considering what we know of the method, do you feel that this method truly measures significance? Why or why not?
- Can it be a social science paper when there are no social scientists working on it? Similarly, there are also no film scholars credited either as authors or in the acknowledgements. What responsibilities do scholars have when working on projects that intersect with another field?