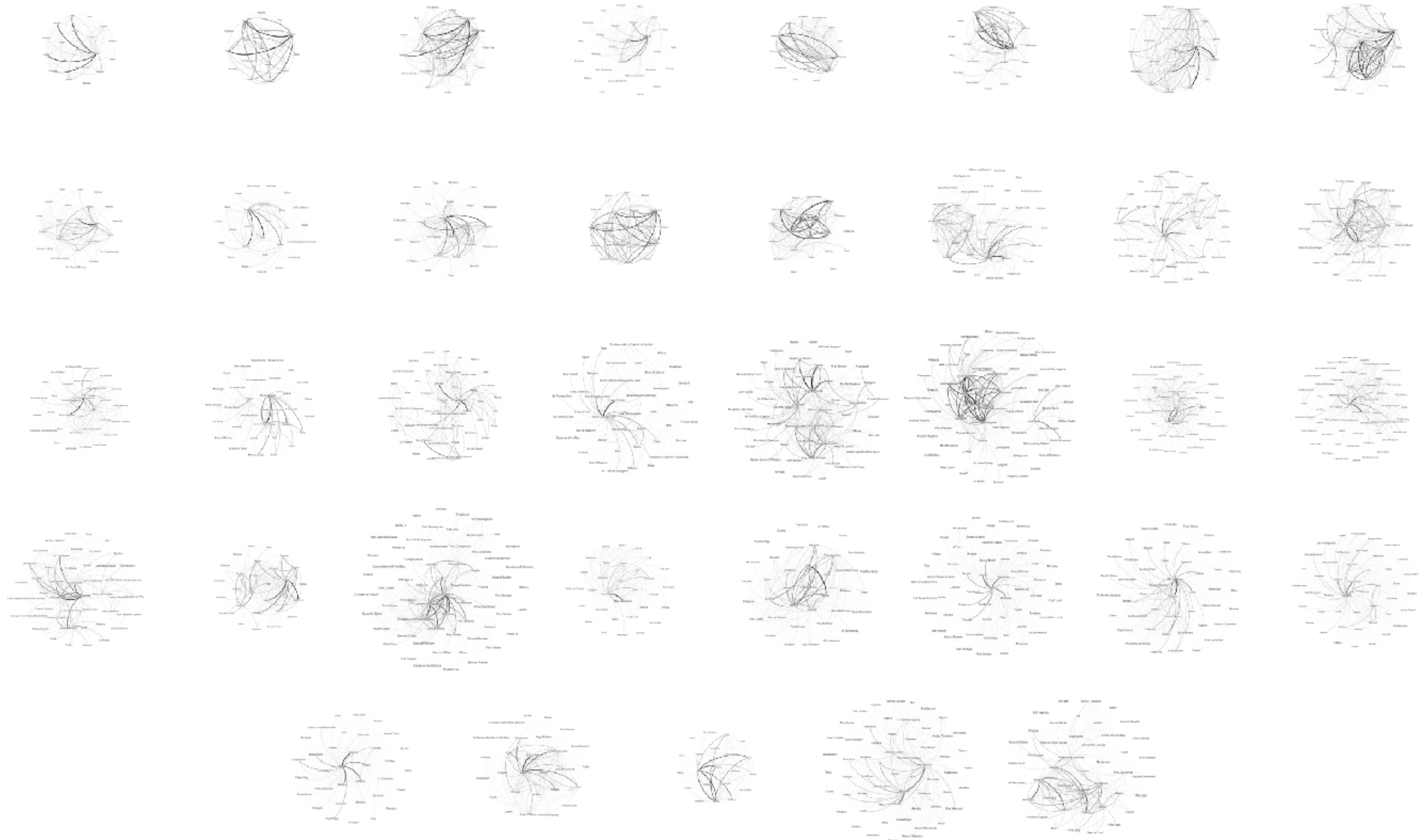# GENERATING SOCIAL NETWORK GRAPHS FROM TEI PLAYS

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37 SHAKESPEARE PLAYS, AS NETWORKS

CODEBASE 1: TEI PARSER TO GENERATE SOCIAL NETWORKS

➤ Parses presence of character speech (supplemented with stage directions) to track characters present on stage at the same time

➤ Creates a network with characters as nodes and speech as directional edges

➤ Edges are weighted by the total words spoken by the "source" character while the "target" character was on stage to (probably) hear

➤ Graph images show some inaccuracies from simplifying assumptions, but are sufficiently accurate to support machine learning classification

➤ Could be applied to any TEI plays (including plays in non-English languages)
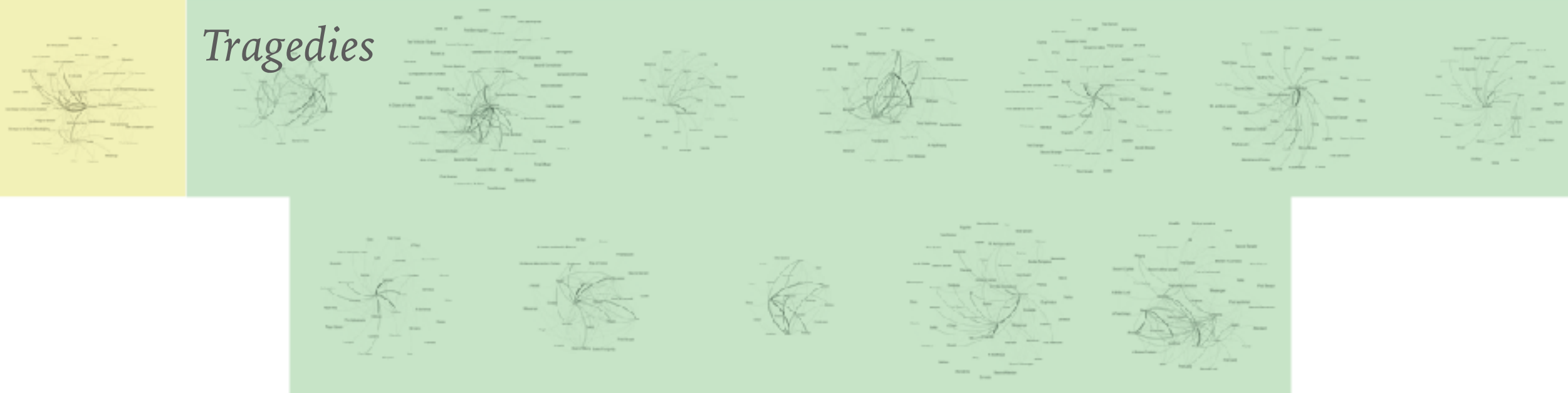
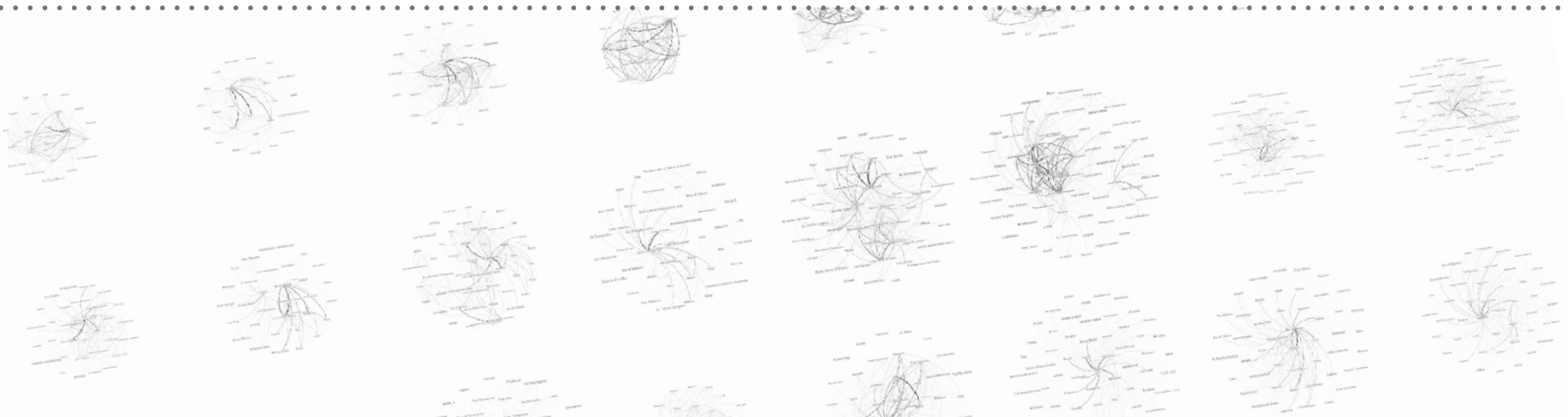# DO SOCIAL NETWORKS SHOW GENRE?

Comedies
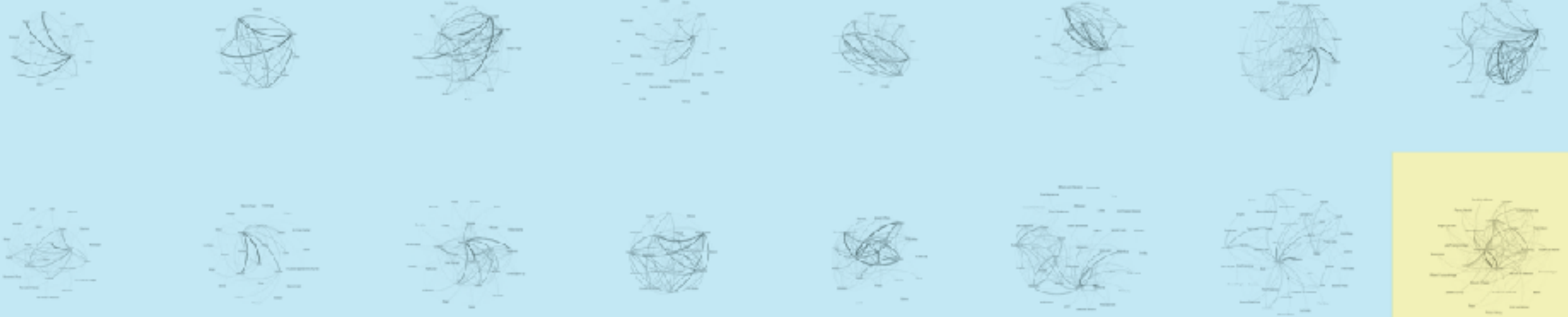
Histories

Tragedies

CODEBASE 2: MACHINE LEARNING CLASSIFIERS USING NETWORK GRAPH FEATURES

➤ Tried several different classifiers; had best accuracy with a support vector machine, which achieves 100% accuracy with 3 graph features

➤ Classifier tests using 17 mathematical features of the networks (such as density, eigenvector centrality, eccentricity, path length, etc.)

➤ "Supervised" machine learning requires hand-classified training data

➤ Could be applied to any corpus of network graphs

FUTURE WORK

If you have TEI files of plays that you want to make into networks, or network graphs that you want to use machine learning to classify, we would love to hear from you!

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