

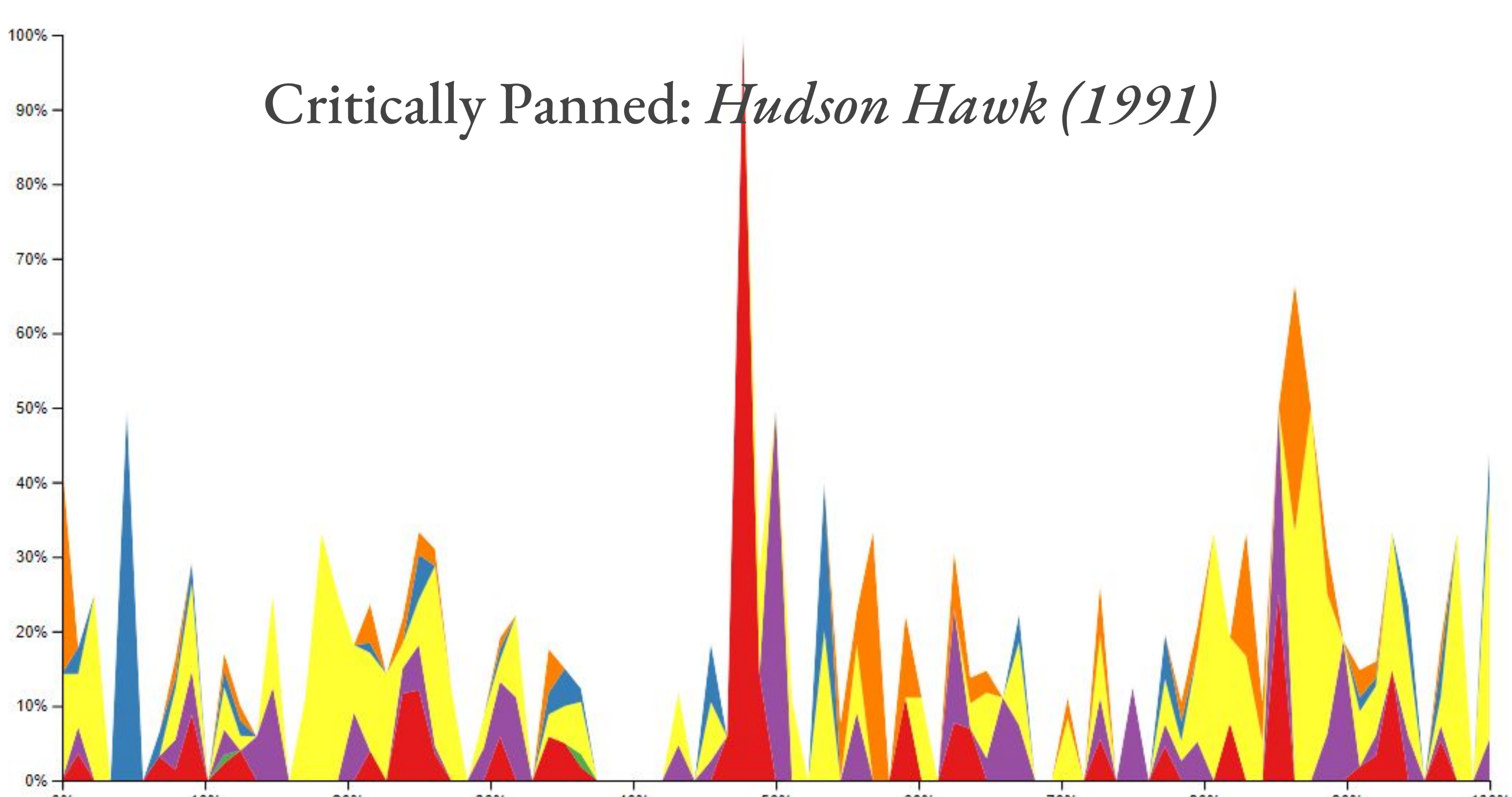
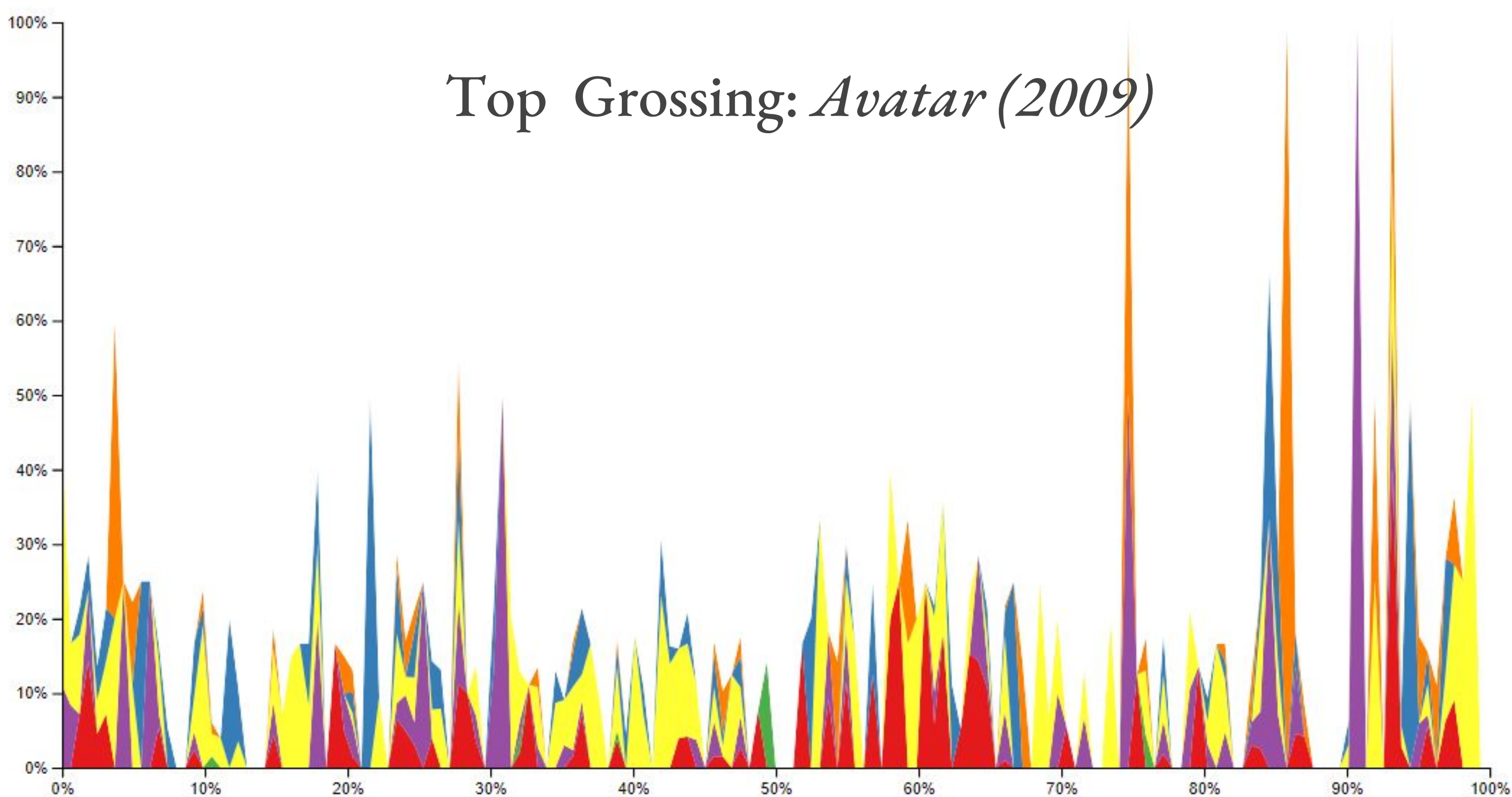
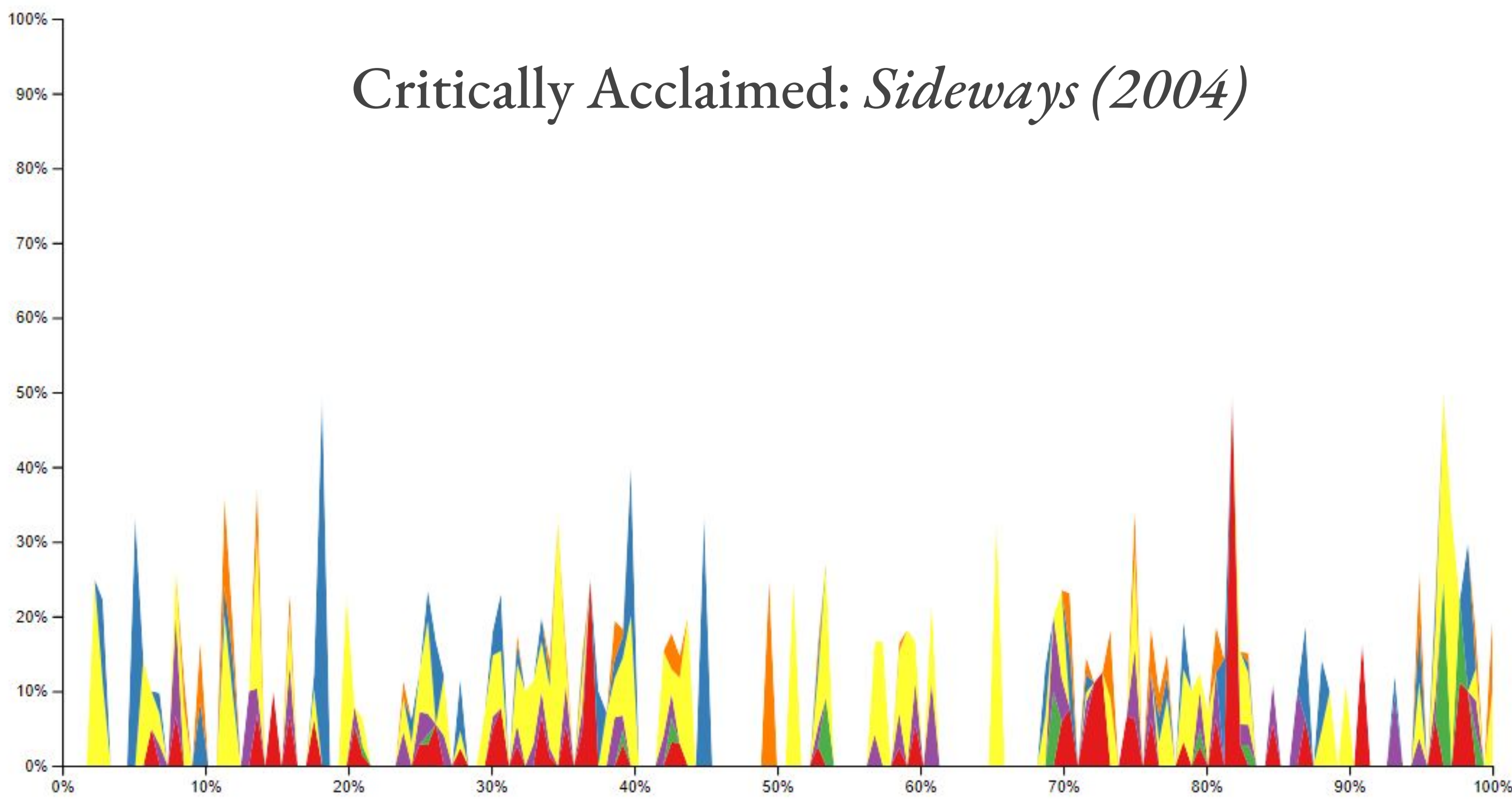
Emotion Visualization of Film Scripts

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Summary

Film producers, screenwriters, and consumers alike are interested in the creation of great films. But what does a “good movie” look like? It’s difficult to evaluate creative works, so we propose a method of visualizing a film’s emotional content over its runtime, drawn from its script. This approach would allow those involved in the green-lighting process to quickly compare a proposed script to other successful movies in order to gauge its potential.

Examples



Affective Textual Analysis

- Approach:
 - No research extracts emotions from text to analyze film mood and inform greenlighting efforts.
 - Sentiment analysis generally predicts positive/negative, polarity/subjectivity, valence, and other simple but less intuitive measures.
 - A linear machine learning classifier (stochastic gradient descent, or SGD) was used on training data of text with emotional ratings.
 - Text had stopwords and punctuation removed, were stemmed, and converted to tf-idf feature vectors.
 - The SGD classifier was used because it works with training datasets that are normally distributed, and is flexible to the amount of data displayed.
 - Emotional scores were assigned to every scene of a script. These values allow us to track the film’s content in each of the six basic psychological emotions. This allows richer analysis than a generic positive/negative textual evaluation (sentiment).
- Training Datasets: Semeval (528 headlines), CrowdFlower (1539 sentences from prose), Potter (226 sentences from fairytales)
- Testing Dataset: Internet Movie Script Database (over 1200 scripts)
- Average training accuracy using SGDClassifier: 0.72

Analysis and Conclusions

We divided our movie set into different categories, based on box office, critical reception, etc. Evaluation of results was done both manually and by averaging the graphs of similar movies.

- Among films that were well-received critically, emotional intensities tend to be fairly low. There are few scenes with large peaks, implying a subtler experience. Scenes also generally possess a greater mix of emotions, indicating a more complex dialogue.
- Among high-grossing blockbusters, we saw generally higher emotional impacts, particularly in the final act. These climaxes are often punctuated with single-emotion scenes. These films are wild rides that aim to make the viewer feel they got their money’s worth, so it is no surprise that their structure points to big finishes.

A common feature of nearly all these “good movies” is a basic story structure, with beats that characterize a section. Most importantly, they have a climactic, conflict-filled final portion: something that many “poor films” lack. Our example seems to peak halfway through, with the remainder of the film dominated by joy- not conducive to a basic story structure. In addition, many critically panned films have higher-than-average emotional impacts compared to blockbusters, representing what critics recognized as overacting.

- **X-Axis:** progression of the movie based on scene number
- **Y-Axis:** amount of emotional content, color classifies the type

Six Basic Emotions	
Anger	Joy
Disgust	Sadness
Fear	Surprise