Poverty in Writing and Images

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Introduction:

The rhetoric of presidents is widely recognized as an important signal of their policy priorities, but little is known about the significance of the semantics of presidential speeches. In this project, we examined the extent to which the uses of the word "poverty" by American presidents demonstrate semantic shifts from the 1930s to present day and what semantic shifts reveal about the economic and policy status of the United States to unveil what impacts presidential rhetoric has on the lives of the poor.

Methodology

Word Embeddings
1. Extracted presidential speeches from American Presidency Project
2. Fitted the text of presidential speeches with single-dimension dynamic Bernoulli embeddings

Sentiment Analysis
1. Implemented emotion detection through a Support Vector Machine using The RBF kernel and trained from labelled images from the Cohn-Kanade AU-Coded Expression Database (CK+) and The 10k US Adult Faces Database

Image Sentiment Analysis

Political psychology has revealed that the sentiments that politicians emote while they speak plays a crucial role in conveying the meaning behind their words. We have developed a tool to analyze the emotions on the faces of presidents as they speak for a more holistic approach.
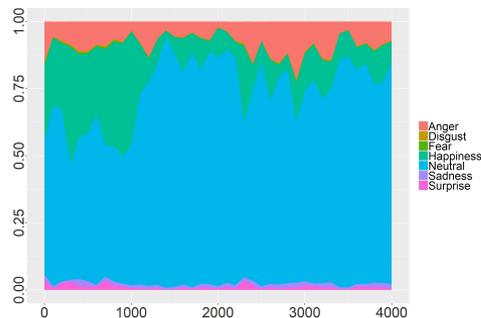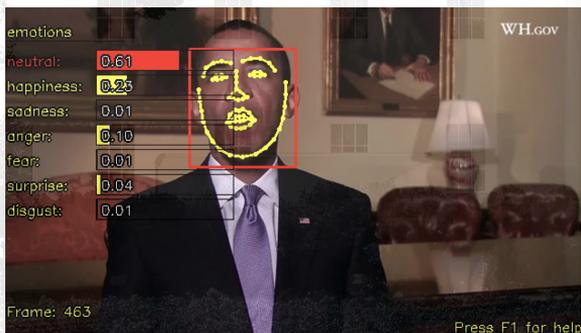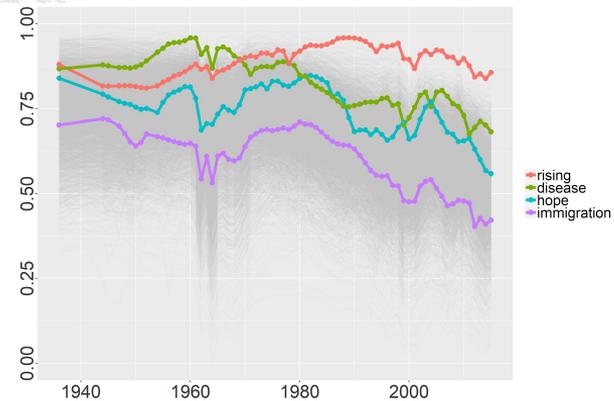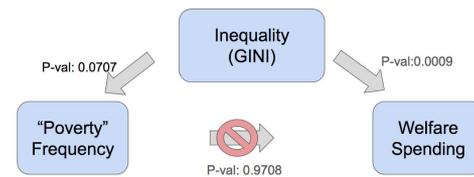

Image sentiment analysis allows researchers to trace frame-by-frame the emotion on president's faces.
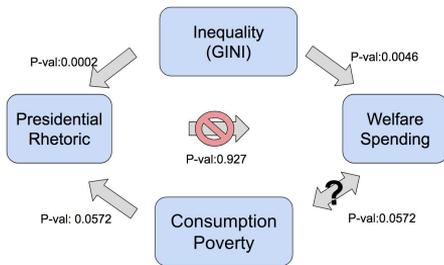
Word Embeddings

The most significant factors that impacted presidential rhetoric were GINI coefficient (a measure of income inequality) and consumption poverty rate (a measure of the proportion of Americans who spend less than an amount required to maintain a basic standard of living). There is no statistical evidence that the ways in which presidents spoke about "poverty" impacted welfare spending.

Word embeddings demonstrate how the relationship between "poverty" and other words in presidential speeches have changed over time.

Income inequality increases how frequently presidents mention "poverty." However, the frequency of poverty related speeches does not have a direct impact on welfare expenditures.

Income inequality and consumption poverty rate have significant impacts on how presidents discuss "poverty." However, presidential rhetoric does not have a direct impact on welfare expenditures.

Conclusion:

Presidential rhetoric and sentiment do not have approvable policy impact on the poor. Investigation must be done into why presidential rhetoric does not manifest into policy.