# Distributional Hypothesis of Immigrant Stereotypes

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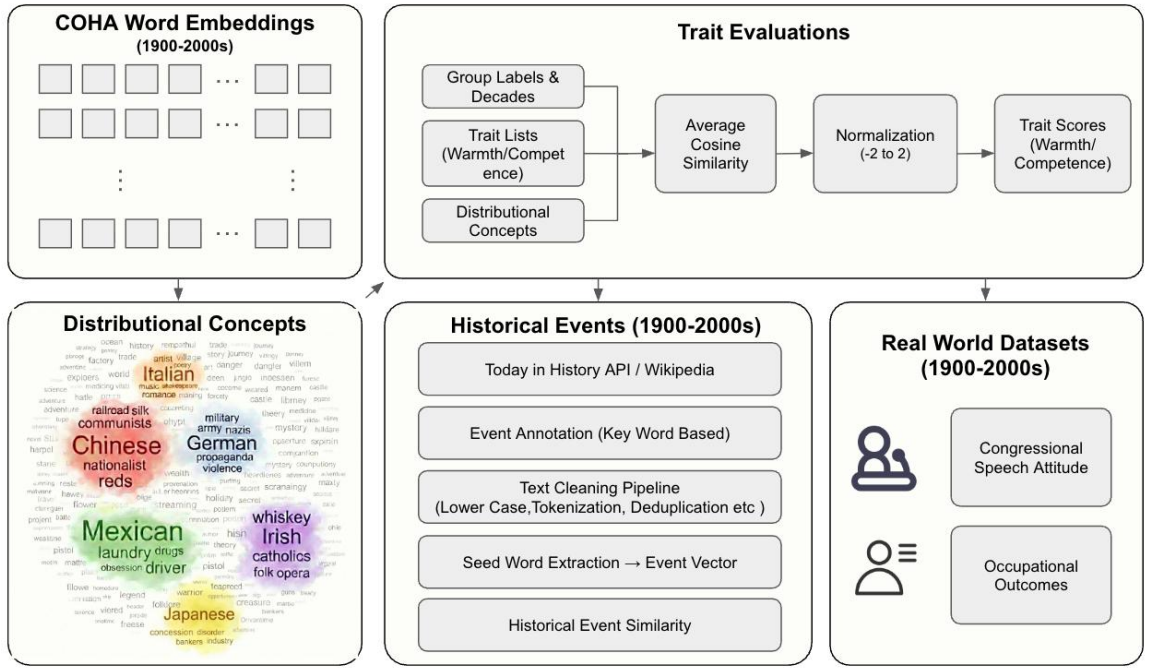
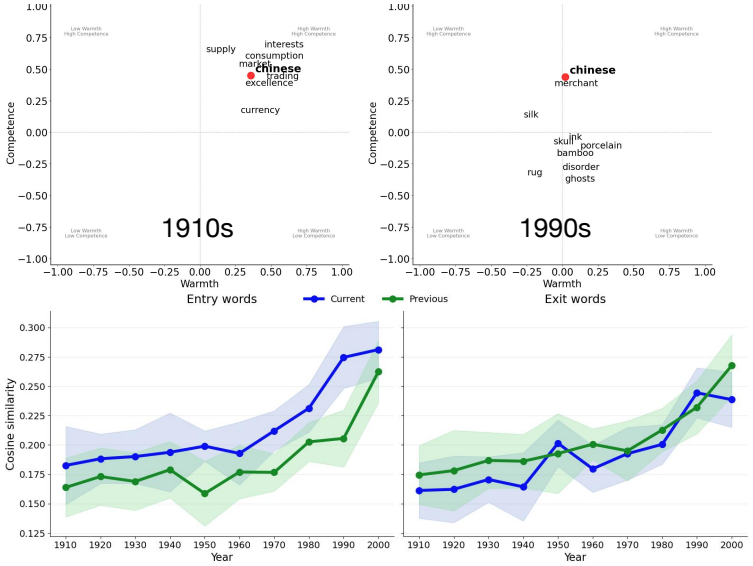
## Introduction

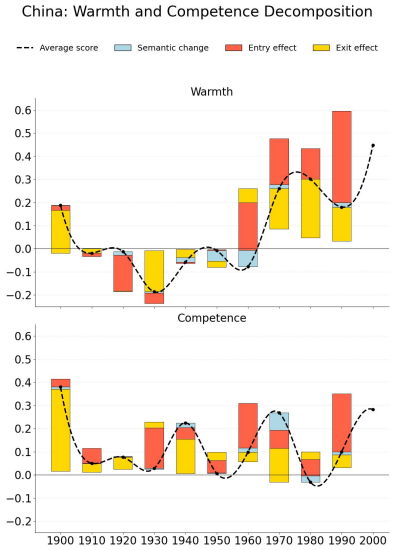
- Stereotypes are usually measured as direct link between **social groups and evaluative traits** (Garg et al., 2018, Tessa et al., 2021).
- However, traits are **Compressed Summaries** and they obscure the richer conceptual structure from which stereotypes emerge.
- We propose a new representational layer: **Distributional Stereotypes,** the concrete concepts that co-occur with groups.
- This measurement allows us to unpack the historical orgins of stereotype change.

## Methods

- **Data**
  - Corpus of Historical American English (COHA, 1900-2000s), 12 major immigrant groups
- **Direct Stereotypes**
  - Cosine similarity between group labels and trait word lists, Trait Score = standardized difference (e.g., Warm − Cold)
- **Distributional Stereotypes**
  - Extract top (cosine/tf-idf) 100 noun concepts
  - Distributional = Average Trait Scores
- **Historical Events**
  - Today in History API, 10,989 historical events
  - Event Vector = Average of unique words extracted from Event Descriptions




## Results

- Distributional Stereotypes **Track History**
  - **1990s** → *market, trade, consumption* (economic reform)
  - **1910s** → *silk, ink, rug, merchant* (past image)
  - Higher similarity to current decade events
- Stereotype Change is driven by **Concepts Entry**, not by semantic drift of same words
- Historically-Grounded Entry Concepts **Predict Direct Stereotype Change**
  - Δ Entry Warmth/Competence is correlated to Δ Direct Warmth/Competence ($p < 0.05$)
- 2 types of Stereotypes Predict Distinct **Downstream Consequences**
  - Direct → Speech Attitude
  - Distributional → Occupational Status

## Discussion

- Stereotypes do not change solely as trait evaluations.
- They change because history introduces new collective representations of groups.
- Measuring warmth and competence therefore captures the surface, while missing the historical processes that generate stereotypes.