

Changes in Uniqueness of Chinese Given Names Over Time

Tyler Cheung, Nikita Daga, Kareena Legare, Shelby Tisdale,
Luke Vrotsos, Ken Ye

Introduction

Names in Chinese Culture

In Chinese culture, given names are carefully chosen and often contain meaning beyond mere identification

A Brief Timeline

- ▶ Before 1960: names convey ideas of reconstruction
- ▶ 1970s: male names have meanings like “building the nation” and “building the army”
- ▶ Early 2000s: names meaning “space travel” grow in popularity

Chinese Names and Uniqueness

- ▶ The Need for Uniqueness (NFU): collectivism positive striving for difference
- ▶ Research shows that names can influence how people are perceived
 - ▶ much of this research refers to alphabet-based languages
 - ▶ doesn't take into account how naming trends change over time
- ▶ a name with less easy-to-recognize (more unique) characters may be perceived negatively (Du et al. 2021)

Our Study

a visual exploration of changes in characters associated with characters used in Chinese given names from 1930 to 2008

- ▶ interested in changes in warmth, competence, and valence associated with characters
- ▶ Do Chinese given names become more unique over time?
- ▶ What factors correspond with changes in uniqueness?

Data

Data

- ▶ The given names data set from Bruce Bao's R package on Chinese names was used since it contained frequency of characters over time along with their characteristics
- ▶ Name warmth, competence, and valence were variables computed by subjective scores of Chinese raters on a Likert scale of 1 to 5
- ▶ Name gender was computed on a scale of -1 to 1 with negative values indicated more feminine names
- ▶ Name and corpus uniqueness were calculated on a scale of 1 to 6.
- ▶ The parts per million of each decade from 1930s to 2008 were the main variable which were pivoted and used to identify the popularity of a character over time

Methods

Methods

- ▶ We found visualizations to be more effective than modeling to answer our research question.
- ▶ The original dataset was pivoted on the ppm by decade columns to create two distinct variables: ppm and decade. This allowed us to better analyze the data.

Methods

- ▶ The first three visualizations use scatter plots to show the relationship between frequency and the perceived warmth, competence, and valence of characters
- ▶ Only the top and bottom 200 characters based on ratings for each variable were included
- ▶ Small random variation added to points to reduce overlap using the `geom_jitter` function
- ▶ Natural log transform on ppm to reduce skew
- ▶ Points colored on a scale according to their warmth, competence, and valence

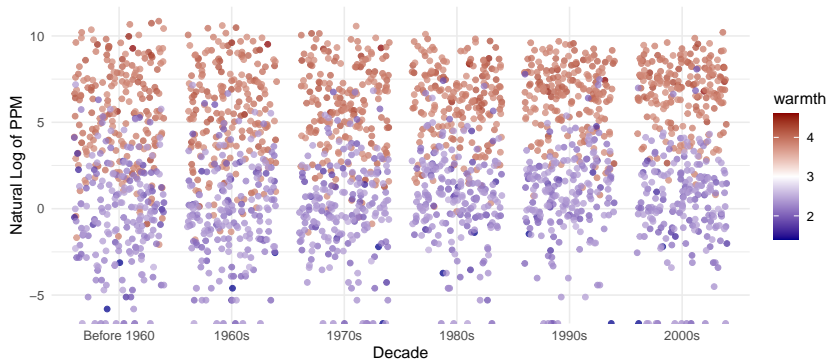
Methods

- ▶ The fourth visualization uses a line plot to examine how the frequency of the most common characters changes over time
- ▶ We filtered the data for the top 100 most frequent characters (using ppm)
- ▶ Ppm of 100 characters were summed for each decade and plotted to show changes over time

Results

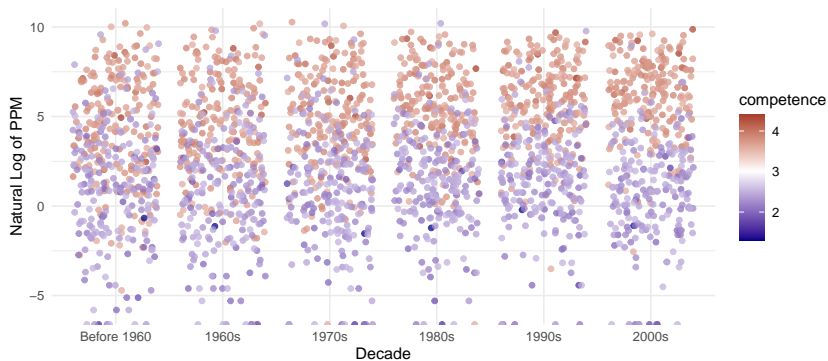
Results

Decrease in Mixing Between 'Warm' and 'Cold' Characters Over Time
For 400 characters used in Chinese Given Names



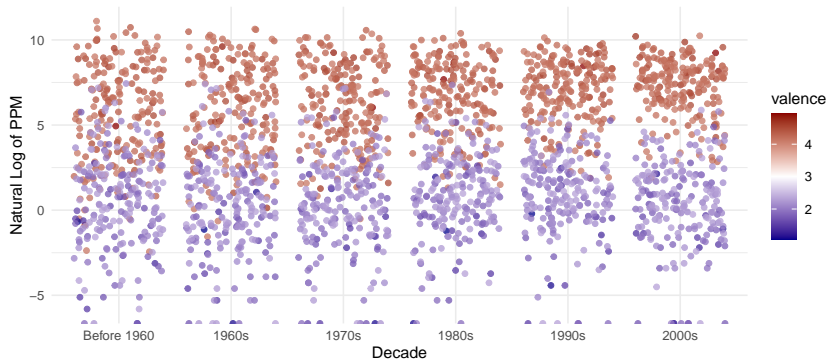
Results

Use of 'Less Competent' Characters Has Increased in Recent Decades
For 400 characters used in Chinese Given Names



Results

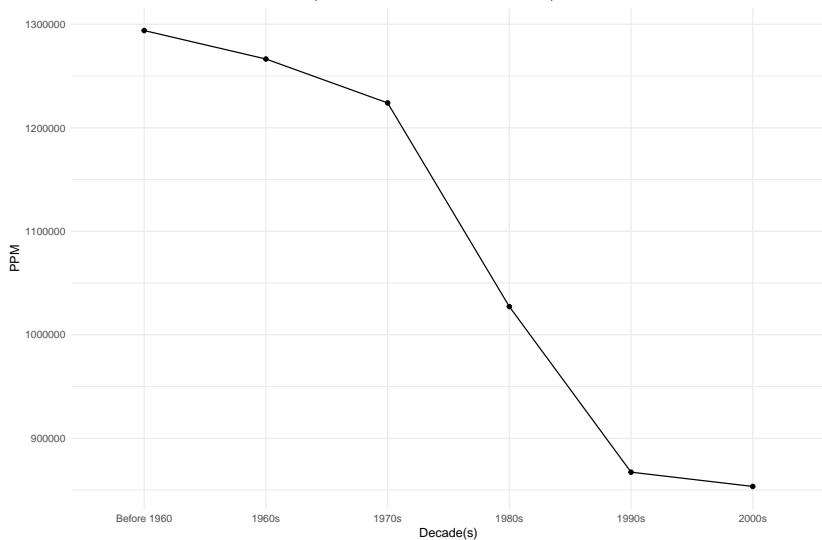
Less Mixing Between Frequencies of Names with High and Low Valence Over Time
For 400 characters used in Chinese Given Names



Results

Characters are becoming more unique over time

Graph shows summed PPM of 100 most common characters per decade



Discussion

Discussion

- ▶ **Research Goal:** This research project aimed to visualize the change of popularity of Chinese characters in name usage for given names using factors including as ppm, warmth, competence, and valence during the time from 1930-2008
- ▶ **Results:** Our visualizations that we created helped us reveal an increased uniqueness in characters used in Chinese given names over time.
- ▶ **Trends:** Decrease in ppm of the most popular characters in Chinese given names throughout time.

Limitations and Further Research

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Subjective ratings without external references

- ▶ **Variance** and Potential **bias**
- ▶ Influence subjectivity: rater education level & birth cohort
- ▶ Mitigate: 10+ raters & interrater reliability > 0.7
- ▶ Further reduce variance: more raters & specific guidelines

Limitations and Further Research

Longitudinal data lacking for valence, warmth, competence

- ▶ Rely on ppm for all time series analysis
- ▶ Dr. Bruce Bao: ratings assumed to be stable over time

Limitations and Further Research

Lack multi character ratings

- ▶ Only ratings for single characters available
- ▶ Combining single characters may produce different connotation
- ▶ New predictor, potentially useful for improving regression model

References

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