

Song Complexity

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Questions We Sought To Answer

1. Has the average complexity of the most popular songs gone down over time?
2. Has the popularization of rap caused a rise in the average song complexity?
3. Has the introduction of new technologies (CD, streaming) had an impact on song complexity?

Data Collection

Wikipedia Billboard Charts 1960-2018

- Stored song names, artists, length, and genre in CSV

AZ Lyrics

- Scraped song lyrics into a JSON, organized by verse

Data Cleaning:

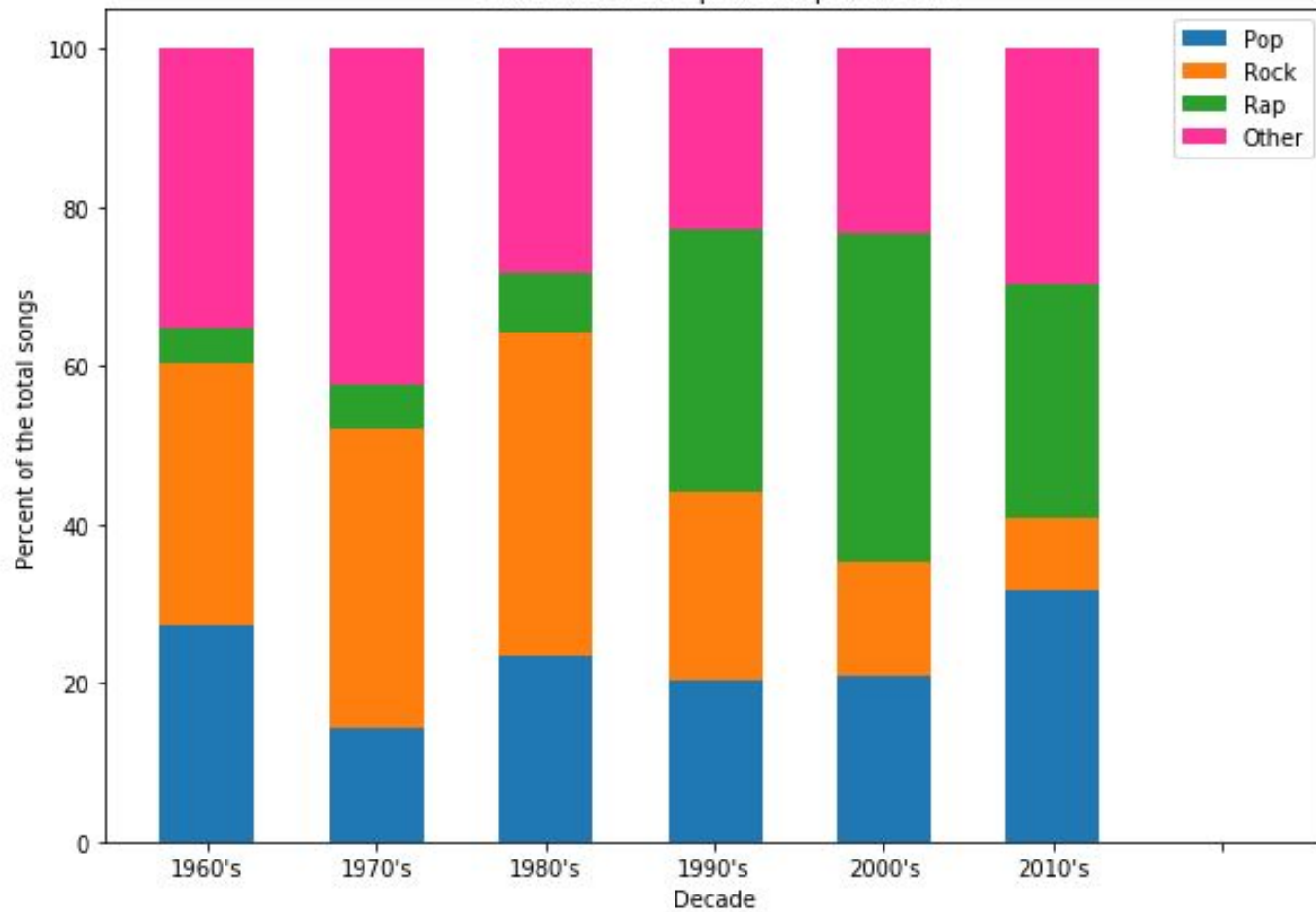
- Remove punctuation, edit slang (like "ridin" -> "riding")

What defines complexity?

- A linear combination of the following features:
 - Number of unique words
 - Number of verses
 - Density
 - Total number of words in a song / duration
 - Verse Similarity Score
 - $\sum (\# \text{ of shared words} * 2) / \text{Combined verse length}$

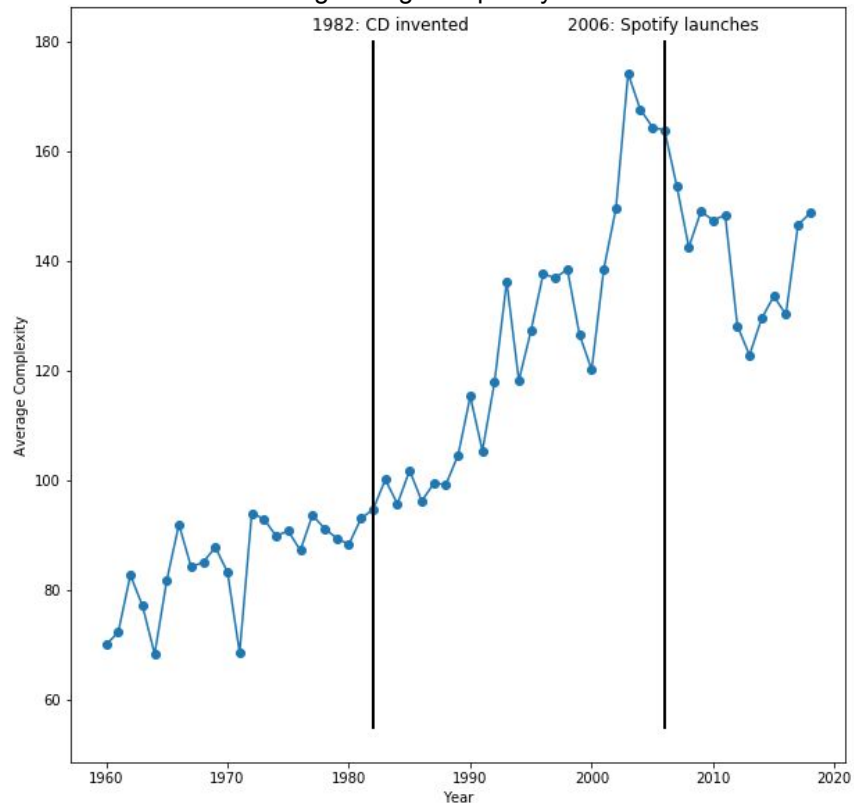
$$\text{Complexity} = \text{Unique Words} + \text{Verses} + \text{Density} - \text{Verse Similarity}$$

Genre share of top charts per decade

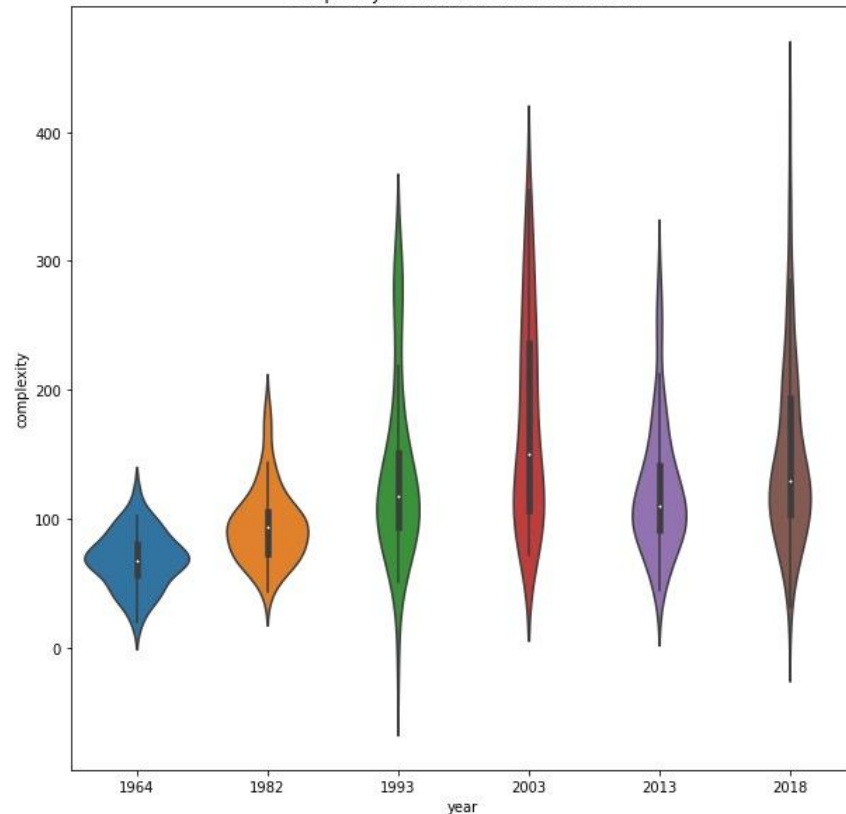


Have rap and technology impacted song complexity?

Average Song Complexity 1960-2018

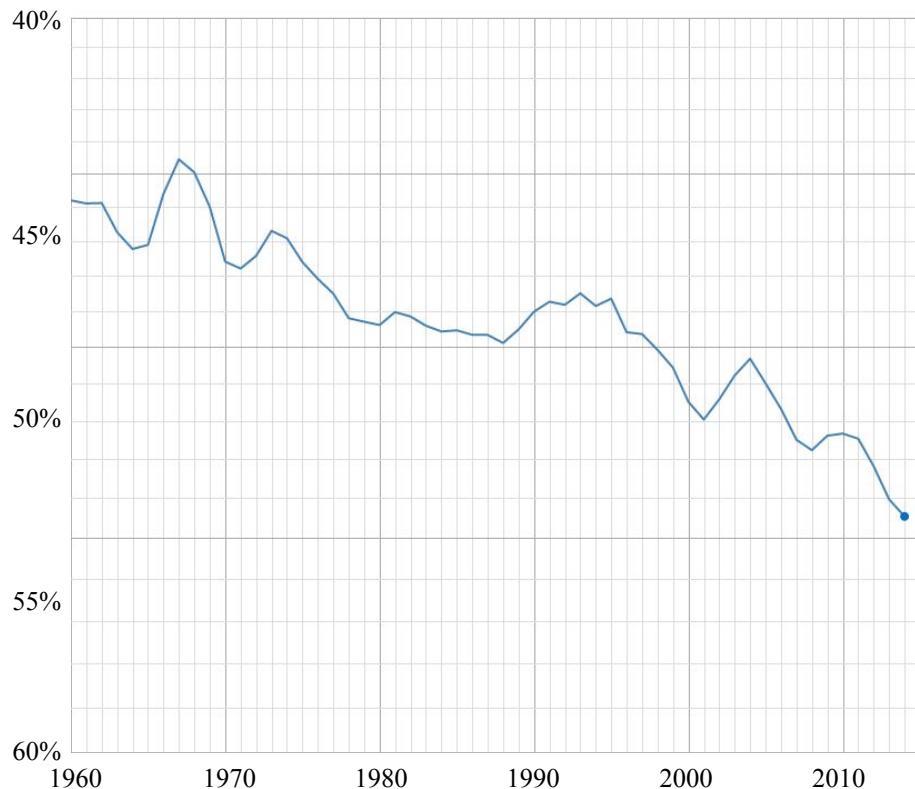


Complexity Distribution Of Selected Years



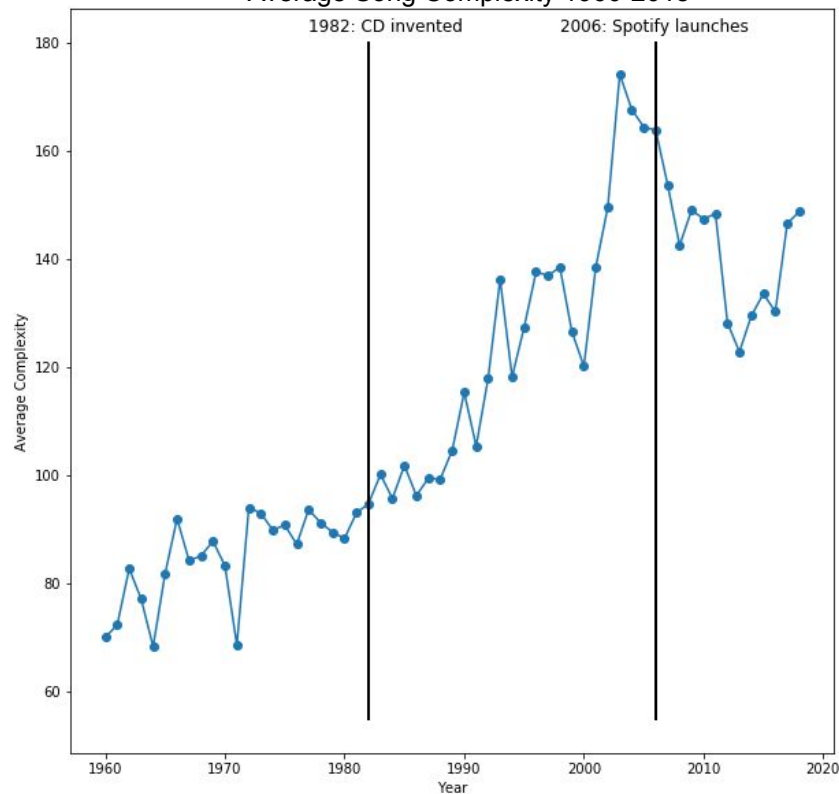
Has the average complexity of the most popular songs for a given year gone down over time?

Repetition of Popular Music, by Year



pudding.com source

Average Song Complexity 1960-2018

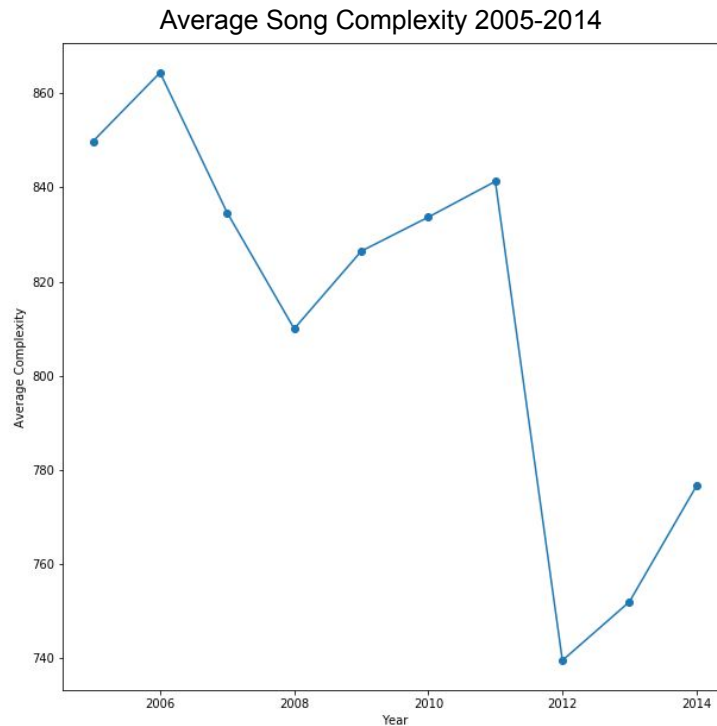


Our results

Has the average complexity of the most popular songs for a given year gone down over time?



seatsmart.com (Reading Level Analysis 2005 - 2014)



Our results