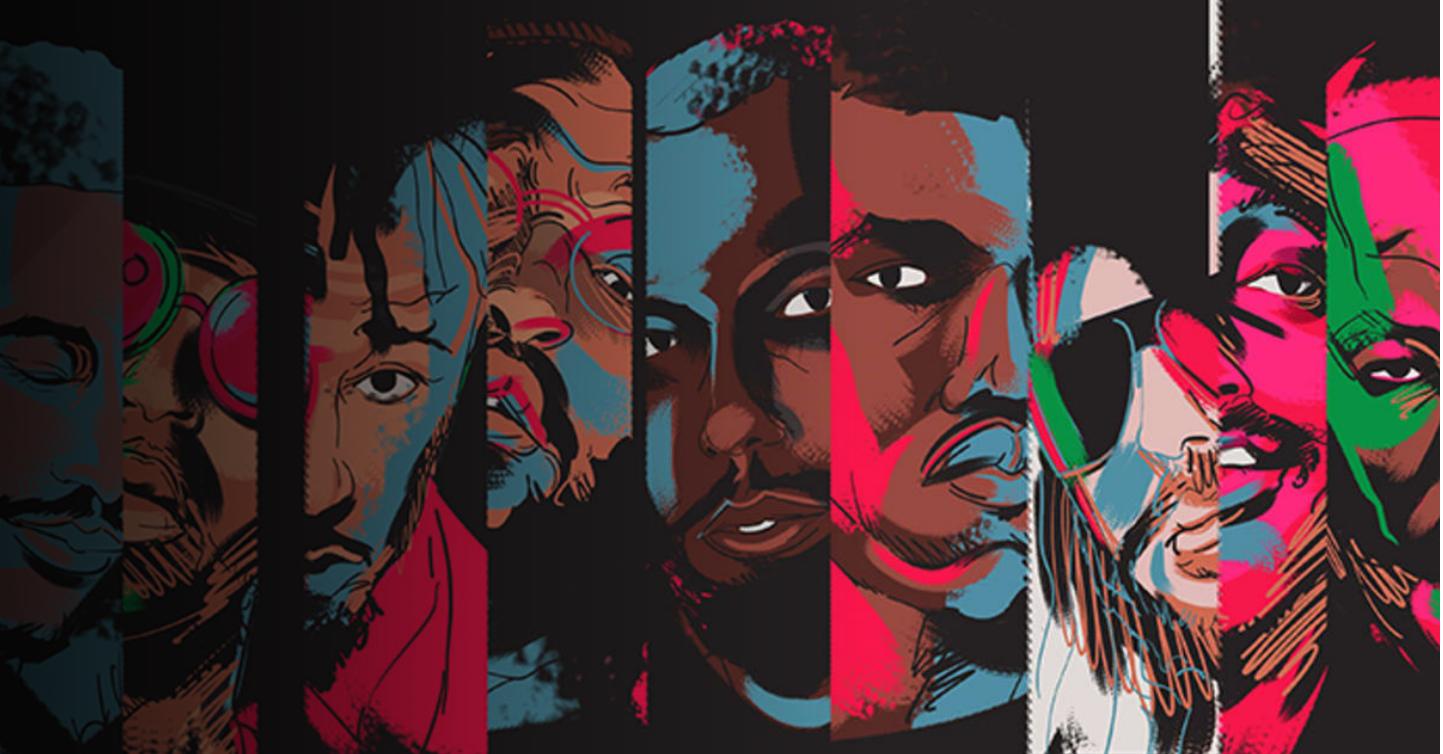
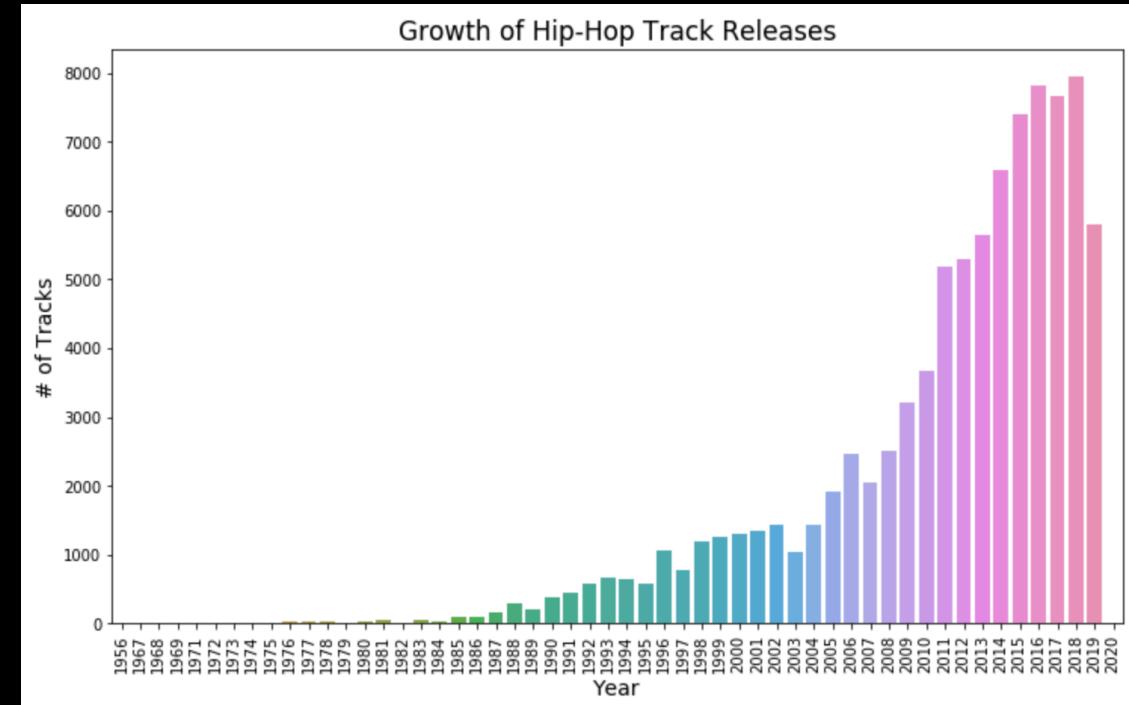
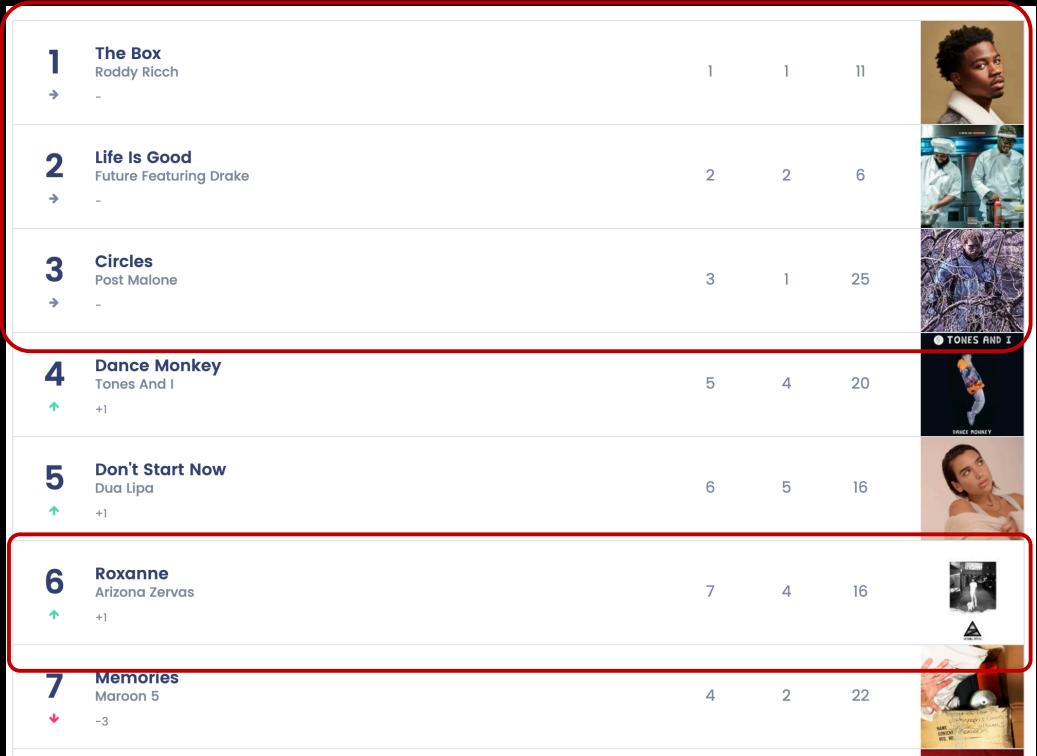




Evolution of Rap Music

Feb. 28, 2020





Hip-Hop From the Streets to the Mainstream

- America's biggest music genre
- More than 25% of all U.S. music consumption
- Rise of social media and ease of music production

How did rap music evolve over time?

EDA

- Topic Distribution
- Timeseries

Raw Data

- ~200K Song lyrics from 1950 to 2020

Used NLP to understand if rap music changed over time

Topic Modeling

- NMF

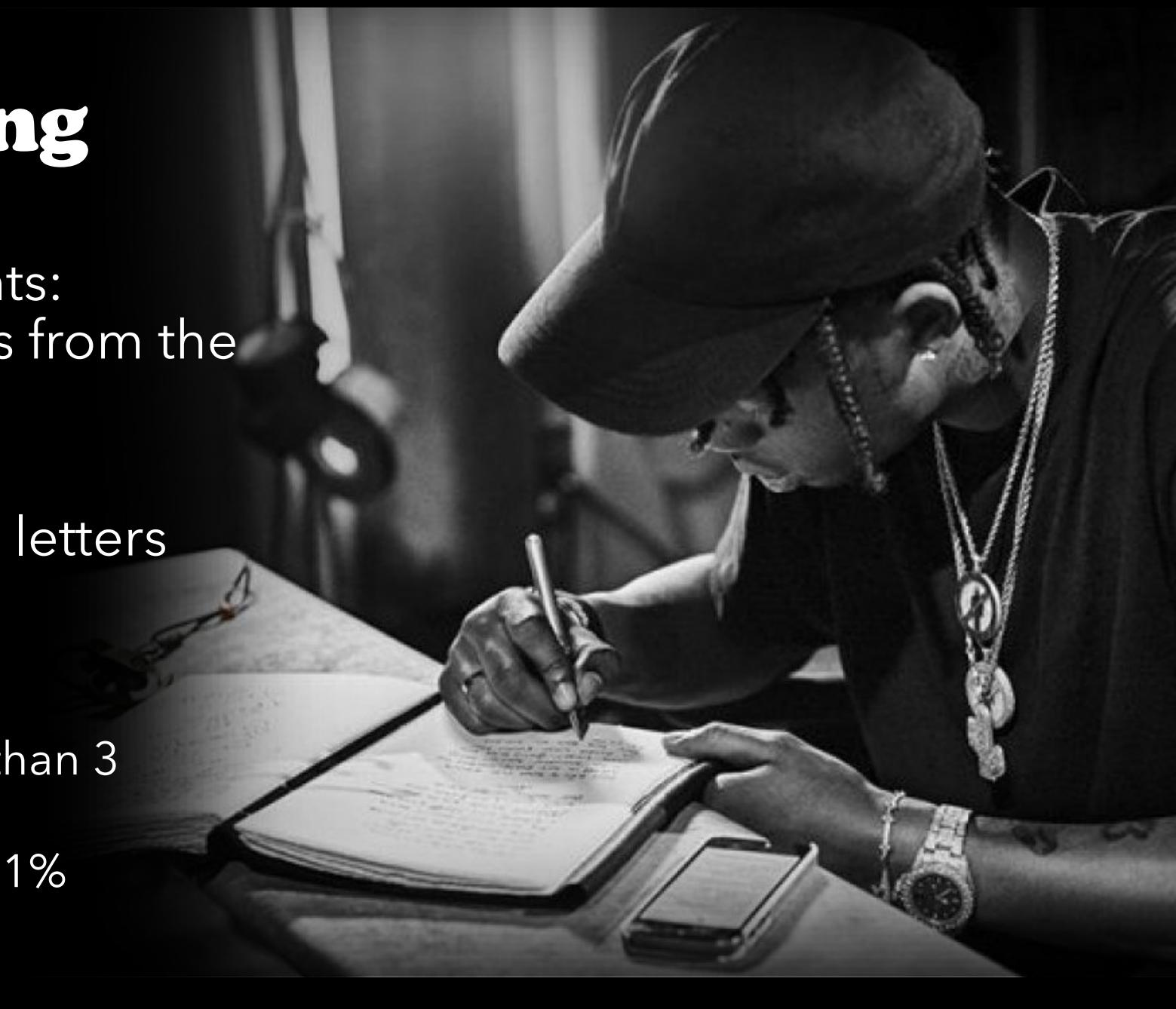
Pre-Processing

- Data cleaning
- Tokenization



Pre-processing

- Verse level documents:
removed intro, hooks from the
song lyrics
- Removed numbers,
punctuations, capital letters
- Stemming
- TF-IDF
 - Token pattern more than 3
characters
 - max_df 20%, min_df 1%

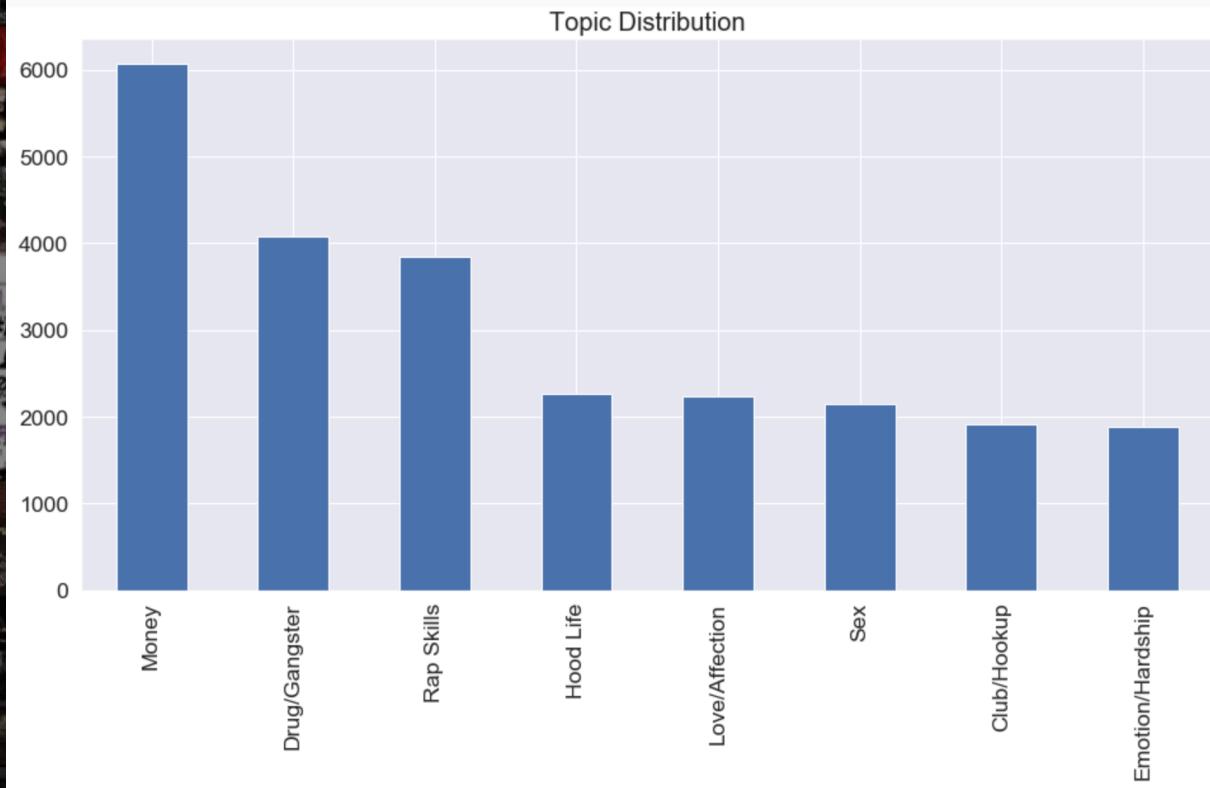


Topic Modeling (NMF)

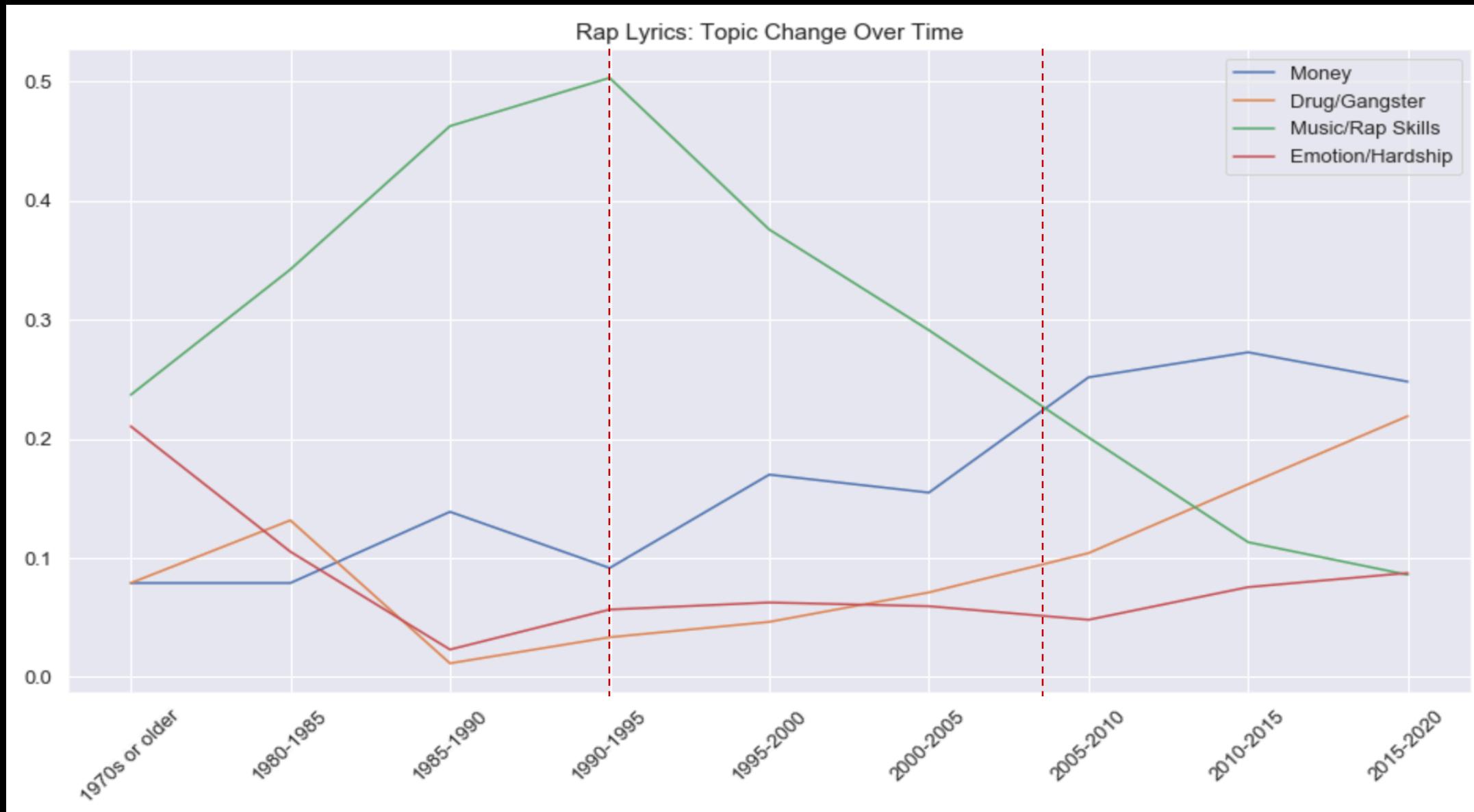
Topic	Key Words
Money	money, cash, count, spend, stack, hundred, bank, pocket, dollar
Hood Life	streets, hood, enough, hustle, friend, broke, night, feeling, everything
Drug / Gangster	smoke, high, shoot, shot, gang, chain, cop, young, pills, tripping
Sex	pussy, dick, fuckin, suck, talkin, lick, head, motherfuck, ass, bust, stick, kiss
Love / Affection	baby, crazy, lady, body, night, tonight, show, kiss, shawty, please
Rap Skills / Music	beat, drop, flow, shot, check, block, rhym, hand, spit, stop, rock, watch, style
Emotion / Hardship	feel, pain, deal, high, inside, hurt, heart, away, feeling, nothing, alone, nobody
Club / Hook-up	club, girl, world, party, friend, night, pretty, body, tonight, drink, shawty

Topic Distribution

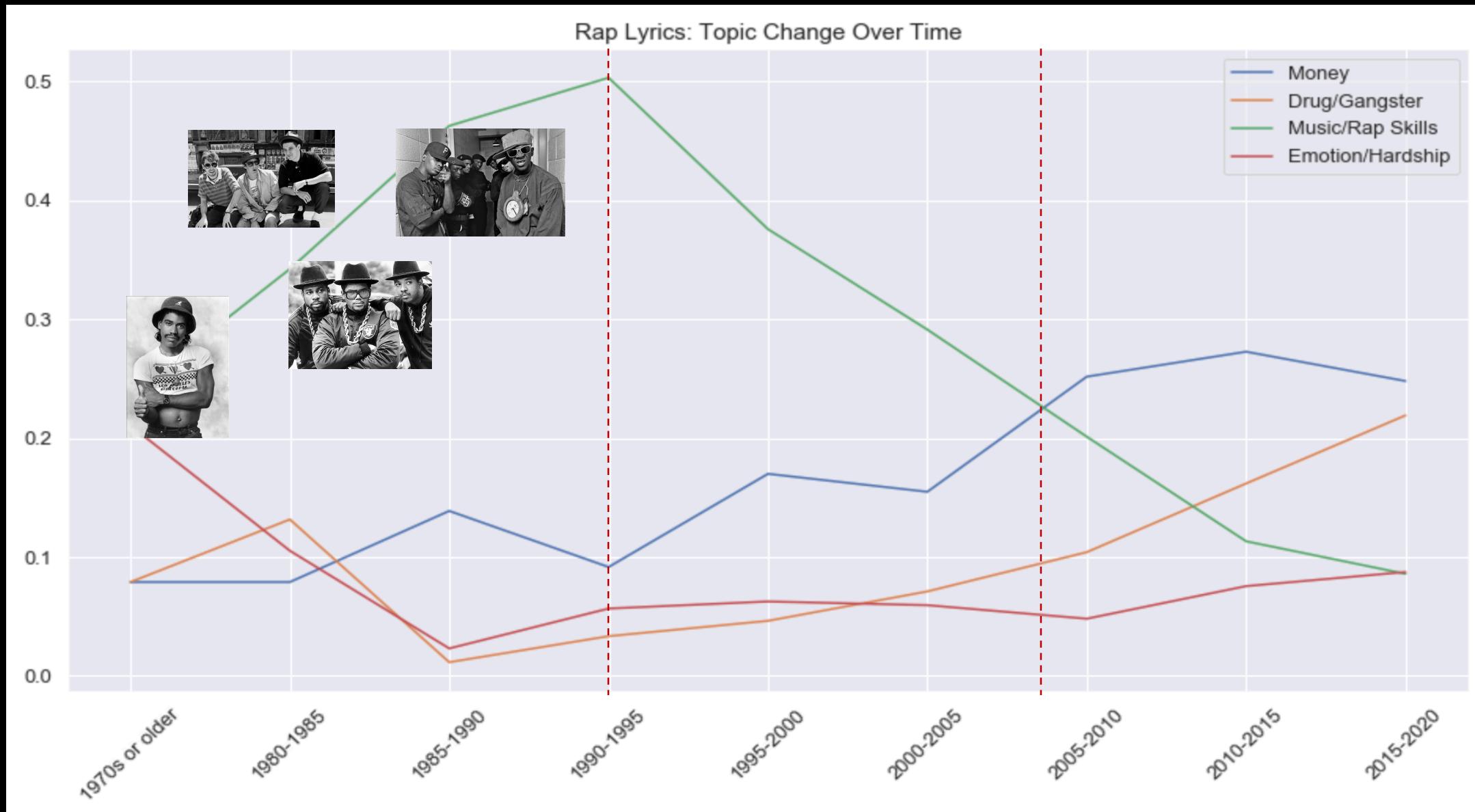
- Money, Drug, Rap Skills are most talked about throughout



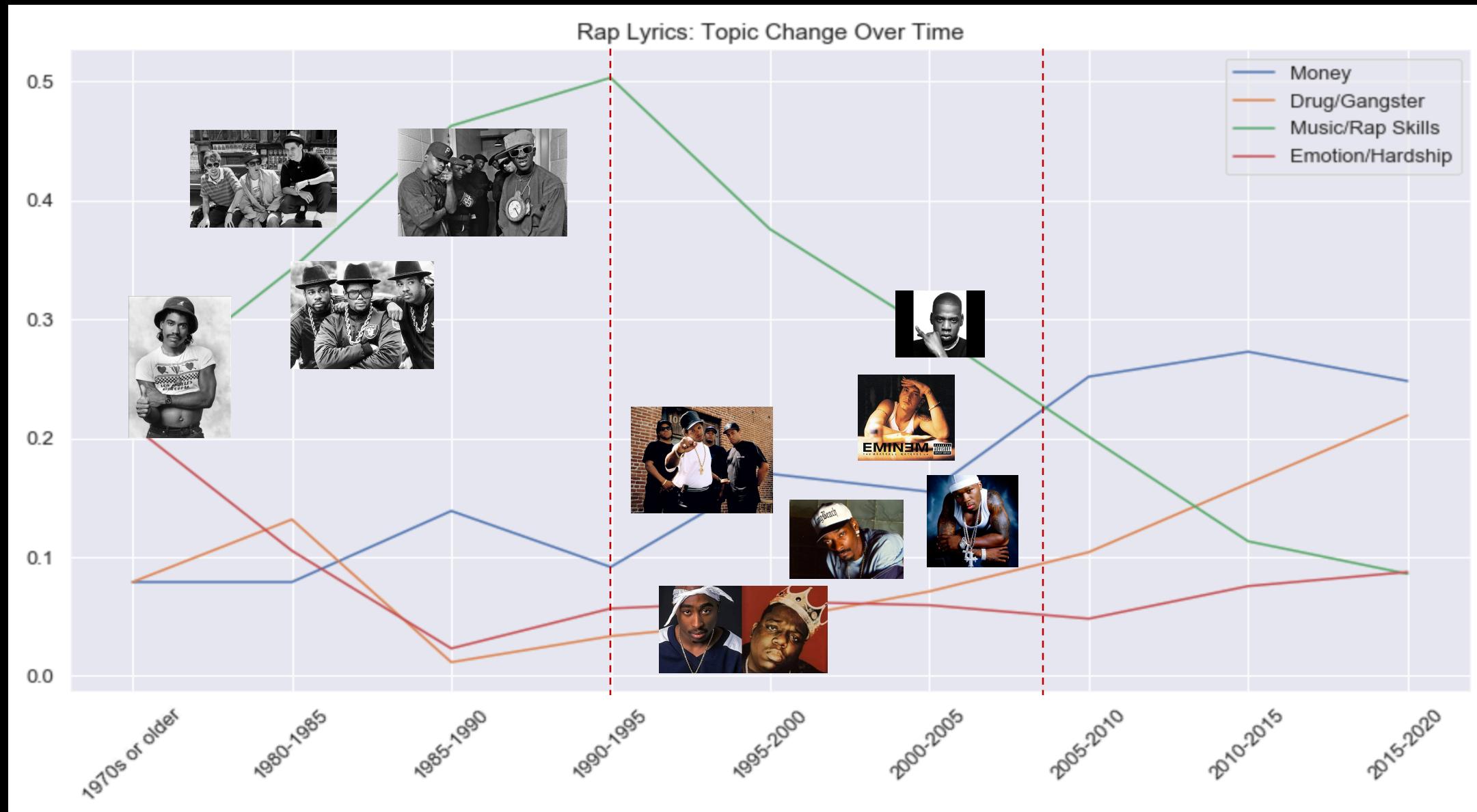
Rap Lyrics Changes Over Time



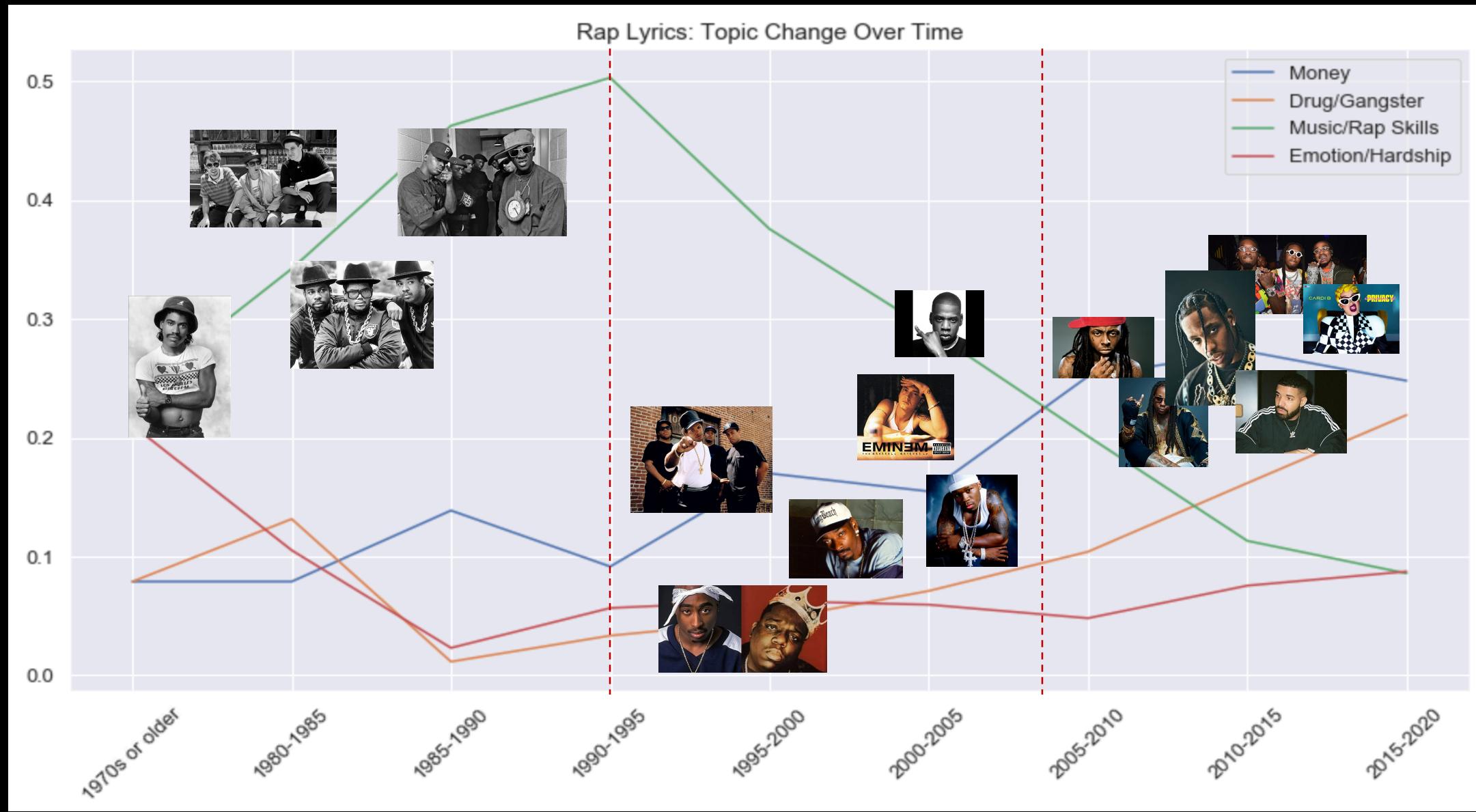
Rap Lyrics Changes Over Time



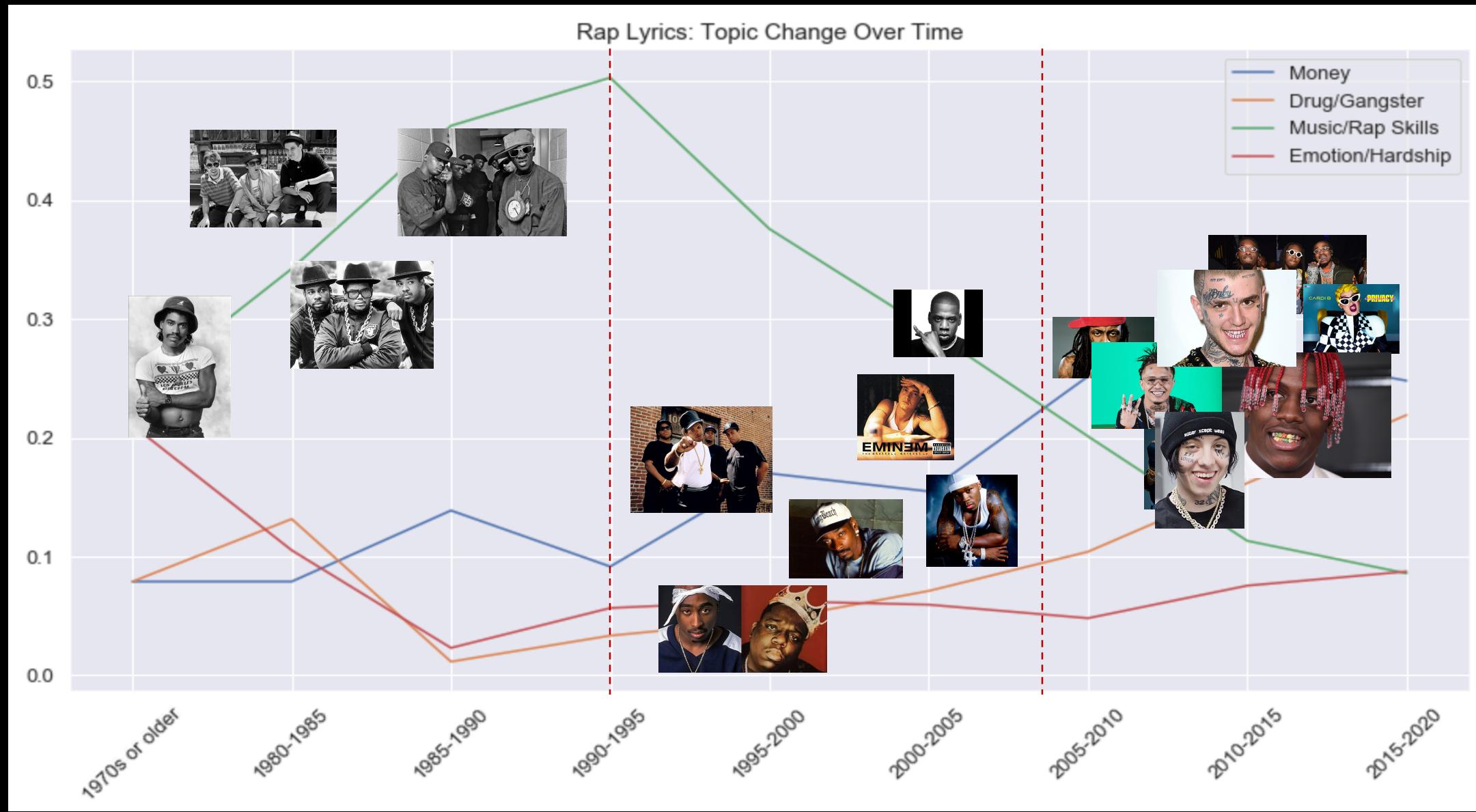
Rap Lyrics Changes Over Time

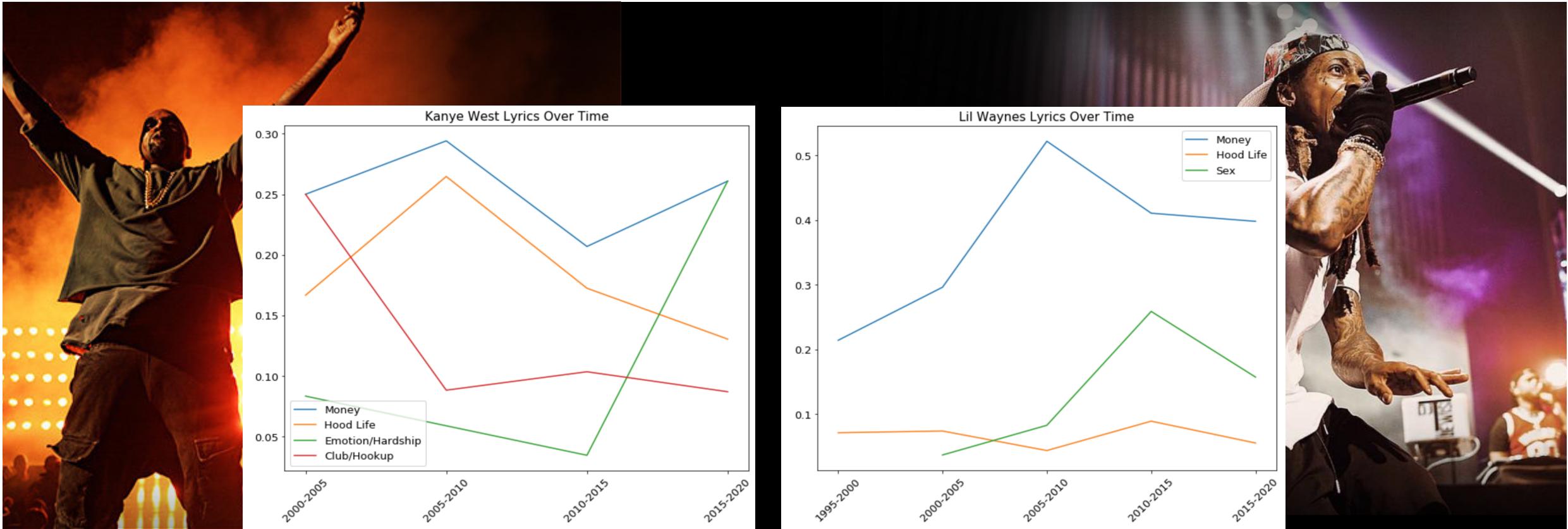


Rap Lyrics Changes Over Time



Rap Lyrics Changes Over Time

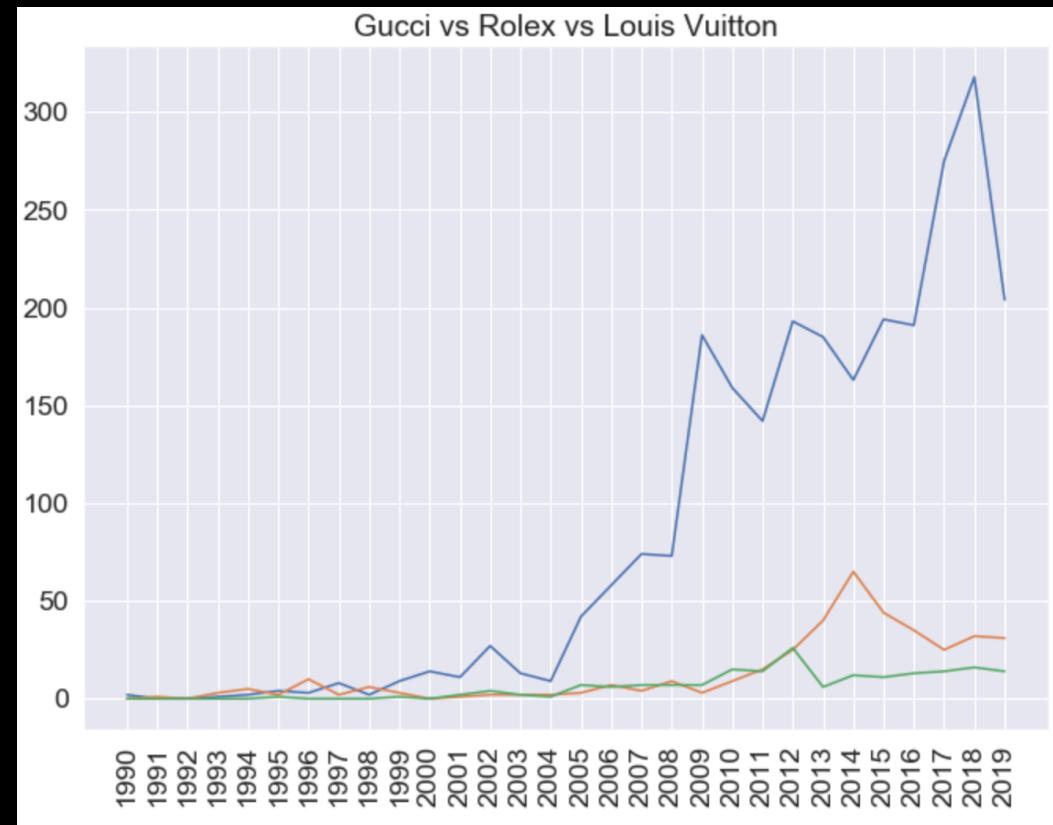
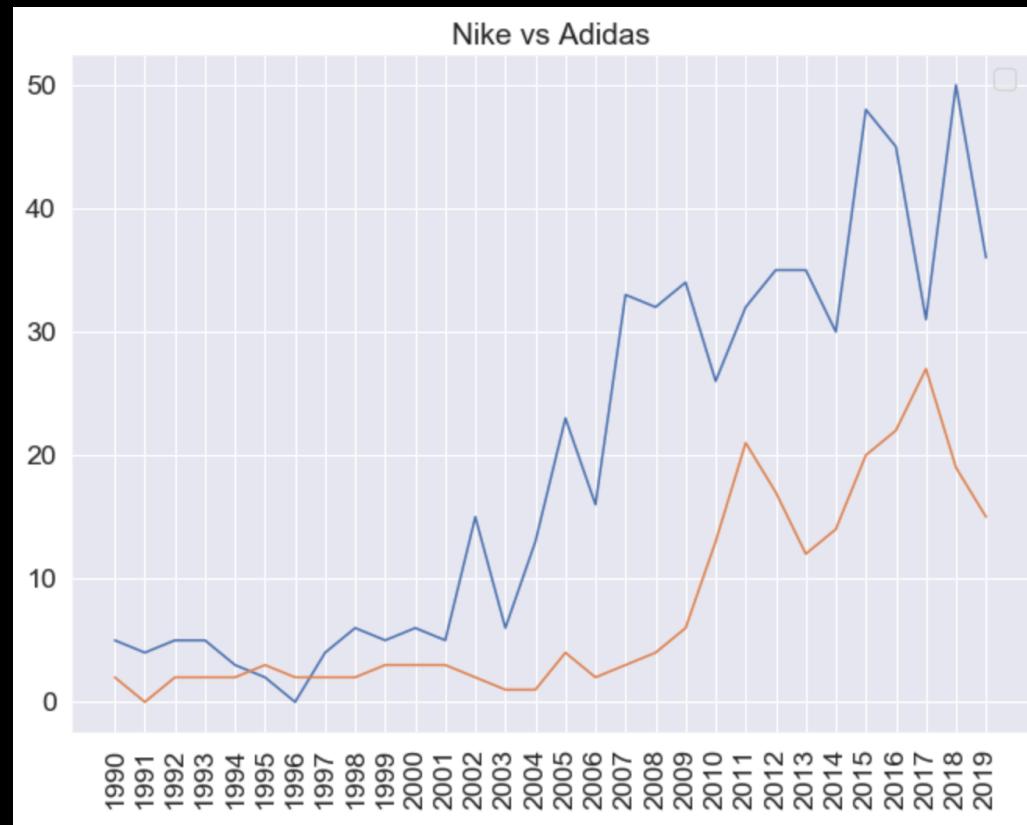




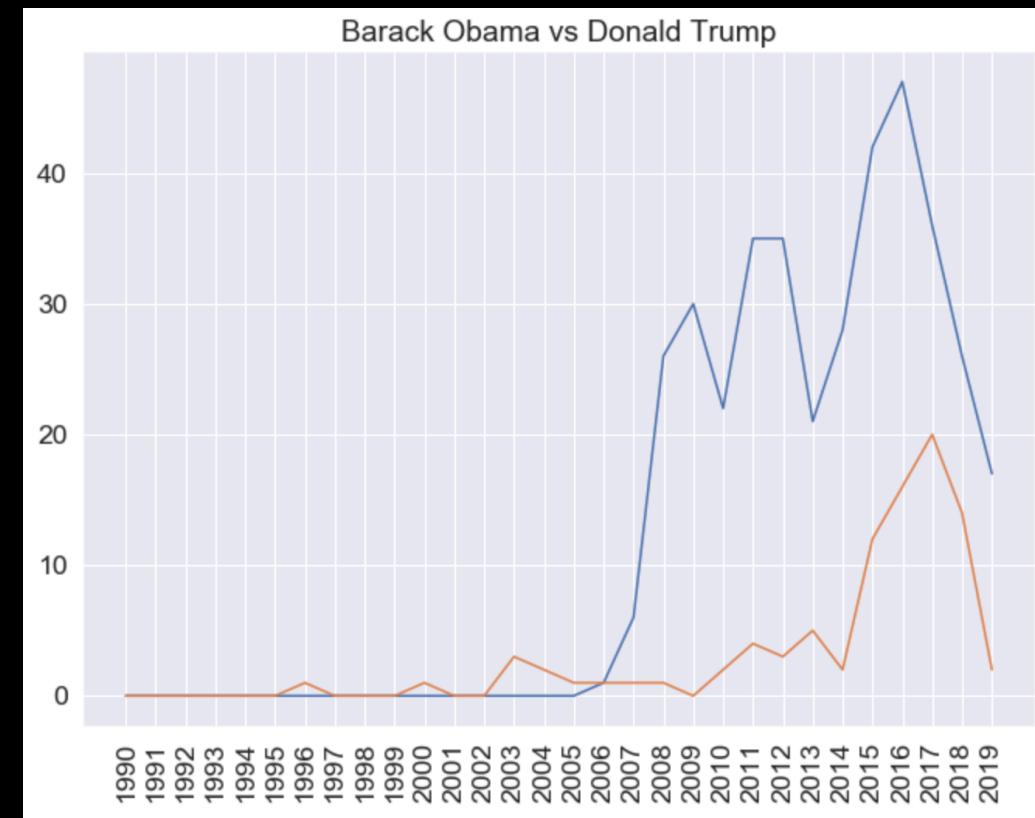
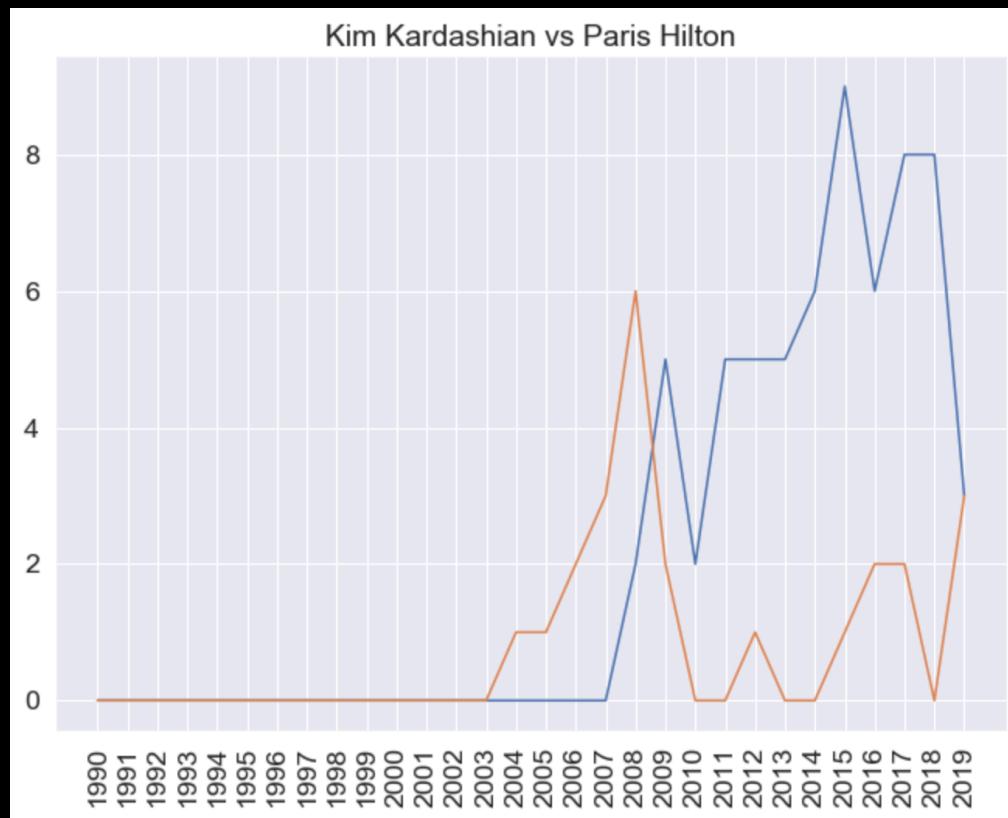
Kanye West vs. Lil Wayne

- Kanye speaks more about his emotion and hardship in recent years
- Money and Rich was Lil Wayne's theme through out

More EDA: Fashion Brand in Rap Lyrics



More EDA: People in Rap Lyrics





Future Work

- Develop recommendation system
- Deeper analysis on certain topics (e.g., drug abuse, politics, etc.)
- Conduct sentiment analysis

THANK YOU!