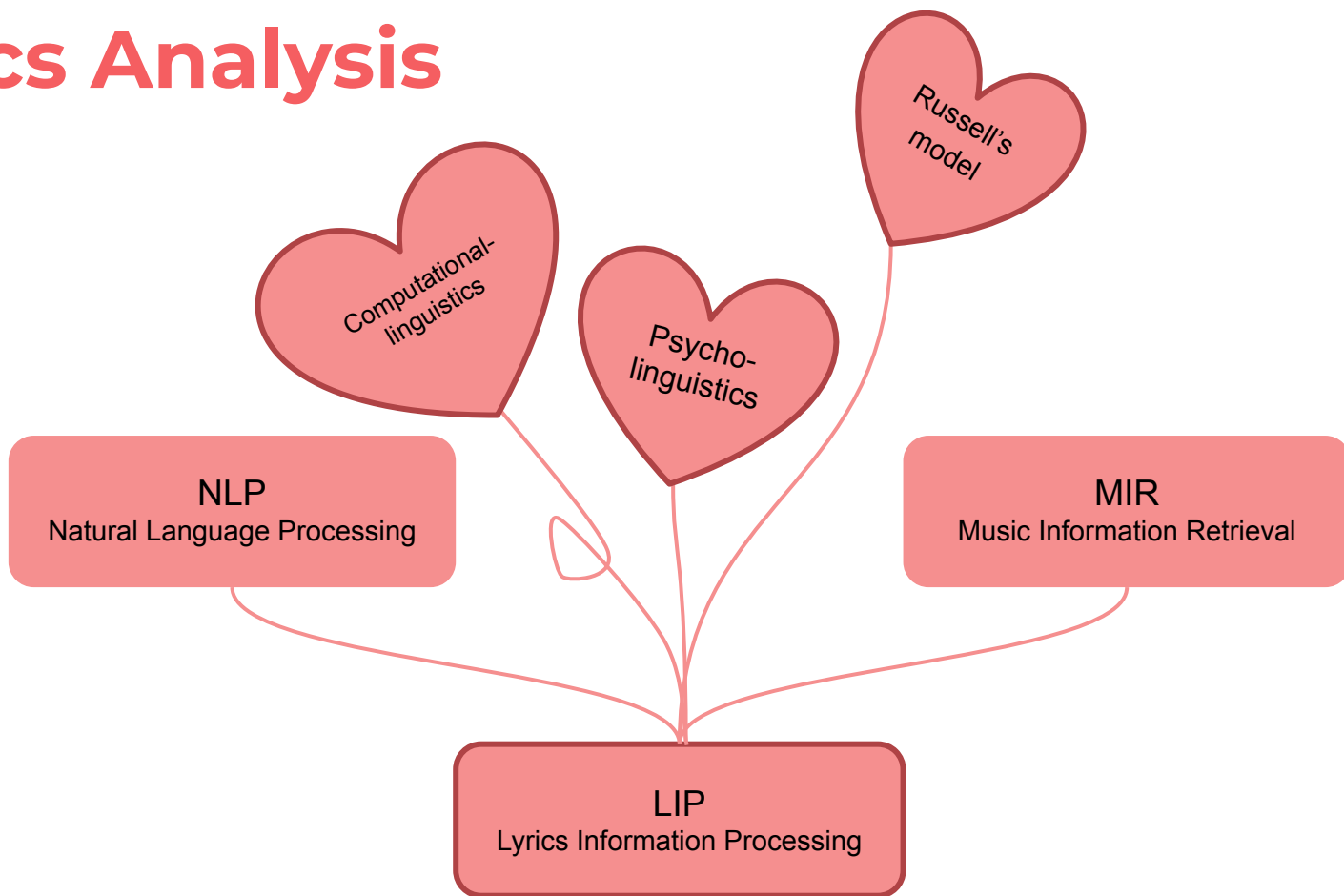


# Romance Thermometer

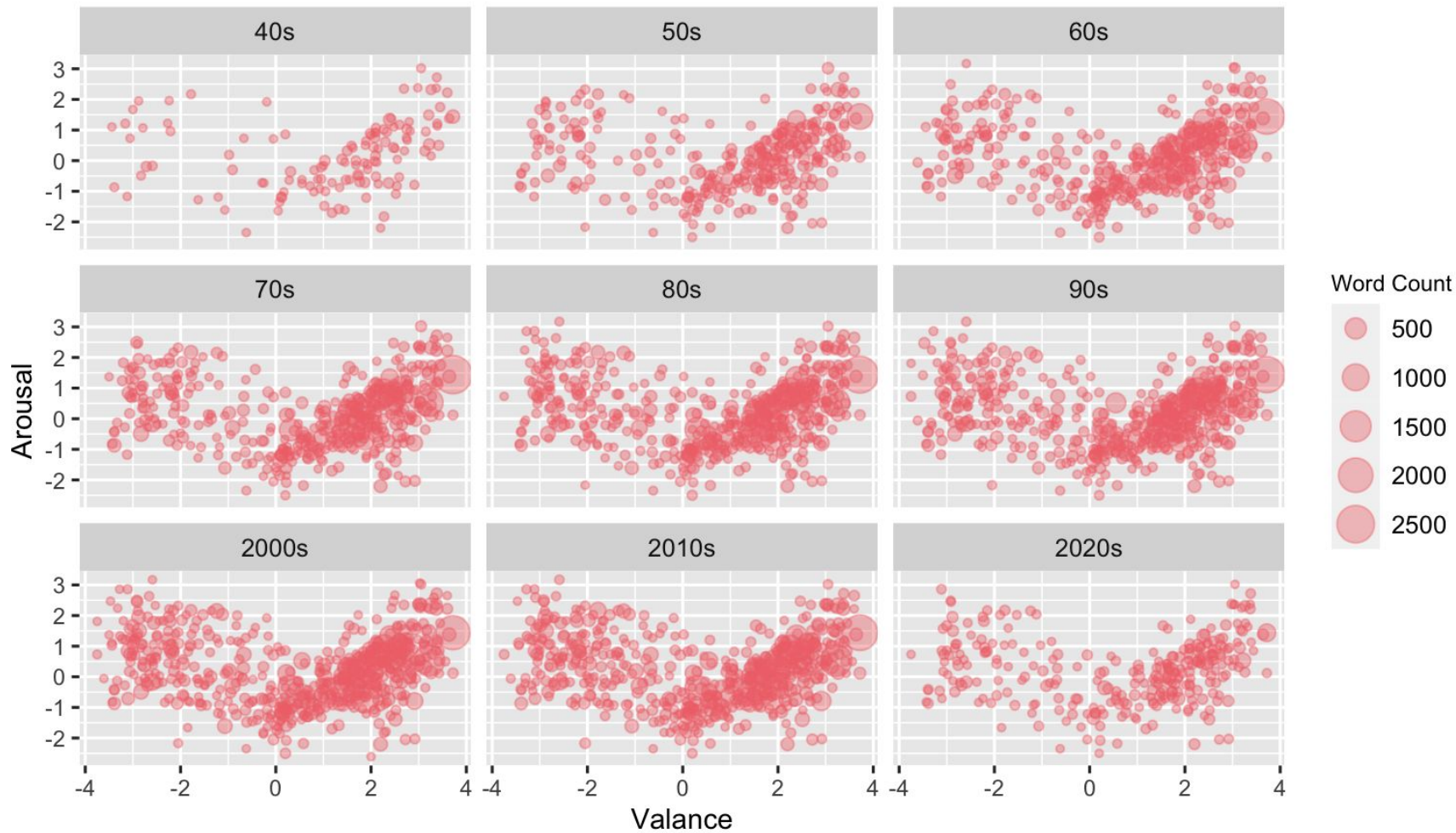
Sophie (Xing) Sun

Text Mining W 21

# Lyrics Analysis



# 'Romance Thermometer' Over 9 Decades



# Hypothesis

Lower Complexity



Higher Arousal

## Topic Modeling

- Love Song vs. Else
- 3 Views

## Complexity Study

- Length metrics
- Exclusion words
- Lexical Diversity

## Sentiment Analysis

- Arousal trend
  - Valance trend
  - Narrator trend
-

## Ballerina (1948)

Dance, ballerina, dance  
And do your pirouette in rhythm with your achin' heart  
Dance, ballerina, dance  
You mustn't once forget a dancer has to dance the part

Whirl, ballerina, whirl  
And just ignore the chair that's empty in the second row  
This is your moment, girl  
Although he's not out there applauding as you steal the show

And love is gone, ballerina, gone  
So, on with your career; you can't afford a backward glance  
Dance on and on and on  
A thousand people here have come to see the show  
As 'round and 'round you go

## Bad Romance (2008 )

I want your ugly, I want your disease  
I want your everything as long as it's free  
I want your love, love, love, love  
I want your love

I want your drama, the touch of your hand  
I want your leather studded kiss in the scene  
I want your love, love, love, love  
I want your love  
(Love, love, love, I want your love)

I want your love and I want your revenge  
You and me could write a bad romance  
I want your love and all your lover's revenge  
You and me could write a bad romance

# Data

## Source

1940's Top Hits Lyrics

 **Play Top Hits**   
on Amazon Music Unlimited (ad)

**Browse Other Decades:**  
[1940's](#) | [1950's](#) | [1960's](#) | [1970's](#) | [1980's](#) | [1990's](#) | [2000's](#) | [2010's](#) | [2020's](#)

Sorted by Release Date, then Alphabetically by Song Title:  
[1946](#) | [1947](#) | [1948](#) | [1949](#)

1949:  Top  
[Evelyn Knight - A Little Bird Told Me](#)  
[Perry Como & The Fontane Sisters - 'A' You're Adorable](#)  
[Gordon Jenkins - Again](#)  
[Johnny Mercer & Margaret Whiting - Baby, It's Cold Outside](#)  
[Dinah Shore - Buttons And Bows](#)  
[Sammy Kaye - Careless Hands](#)  
[Blue Barron - Cruising Down The River](#)  
[Russ Morgan - Cruising Down The River](#)  
[Gordon Jenkins - Don't Cry, Joe](#)  
[Bing Crosby - Far Away Places](#)  
[Perry Como - Forever And Ever](#)  
[Russ Morgan - Forever And Ever](#)  
[Bing Crosby - Galway Bay](#)  
[Andrews Sisters & Gordon Jenkins - I Can Dream Can't I](#)

## Scrapping

scrapy

beautifulsoup



## Scale

All songs 6533 songs

Lyrical songs 6403 songs

259,315 lines

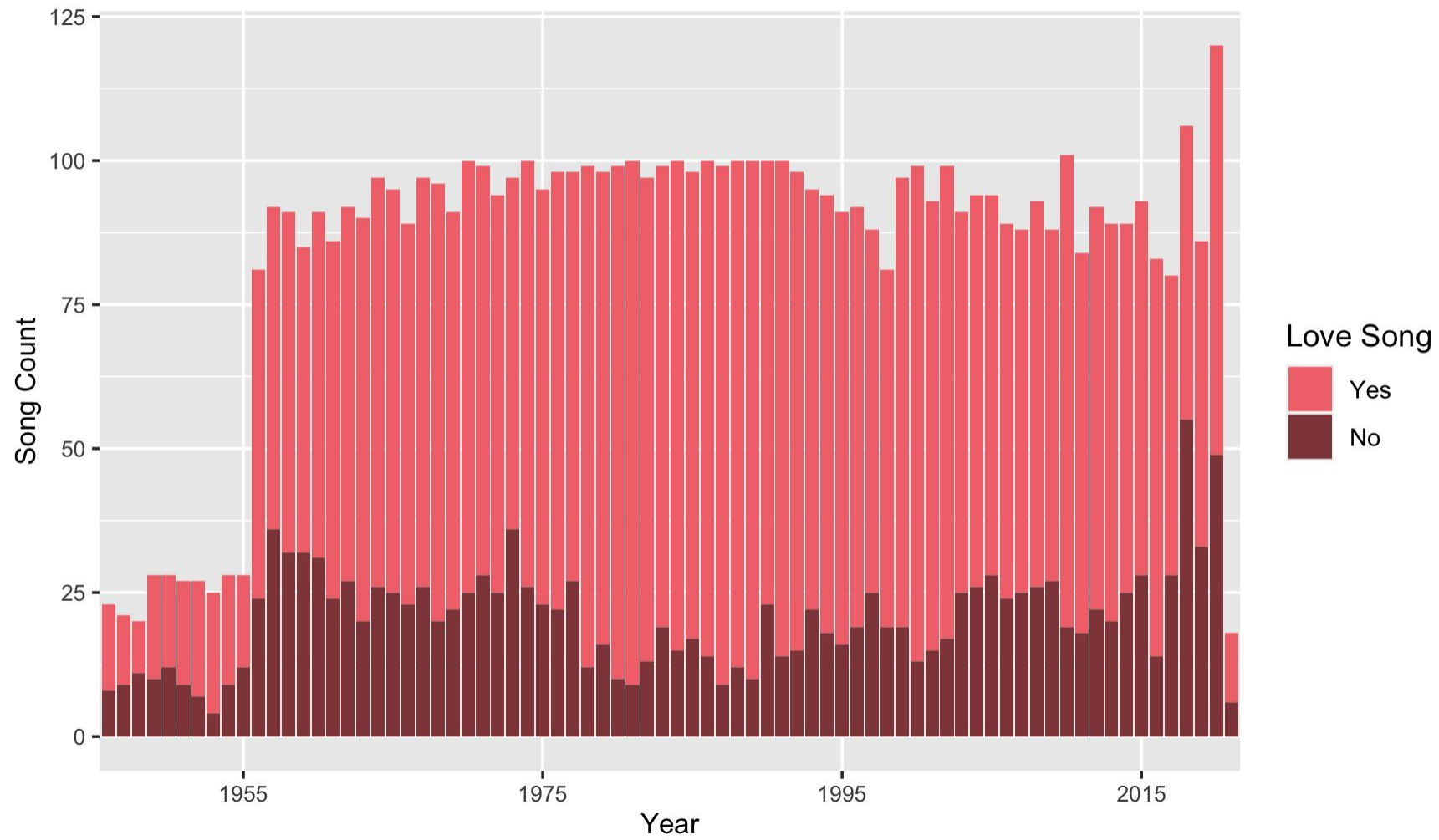
1,899,073 words

Love songs 4843 songs

1,324,550 words

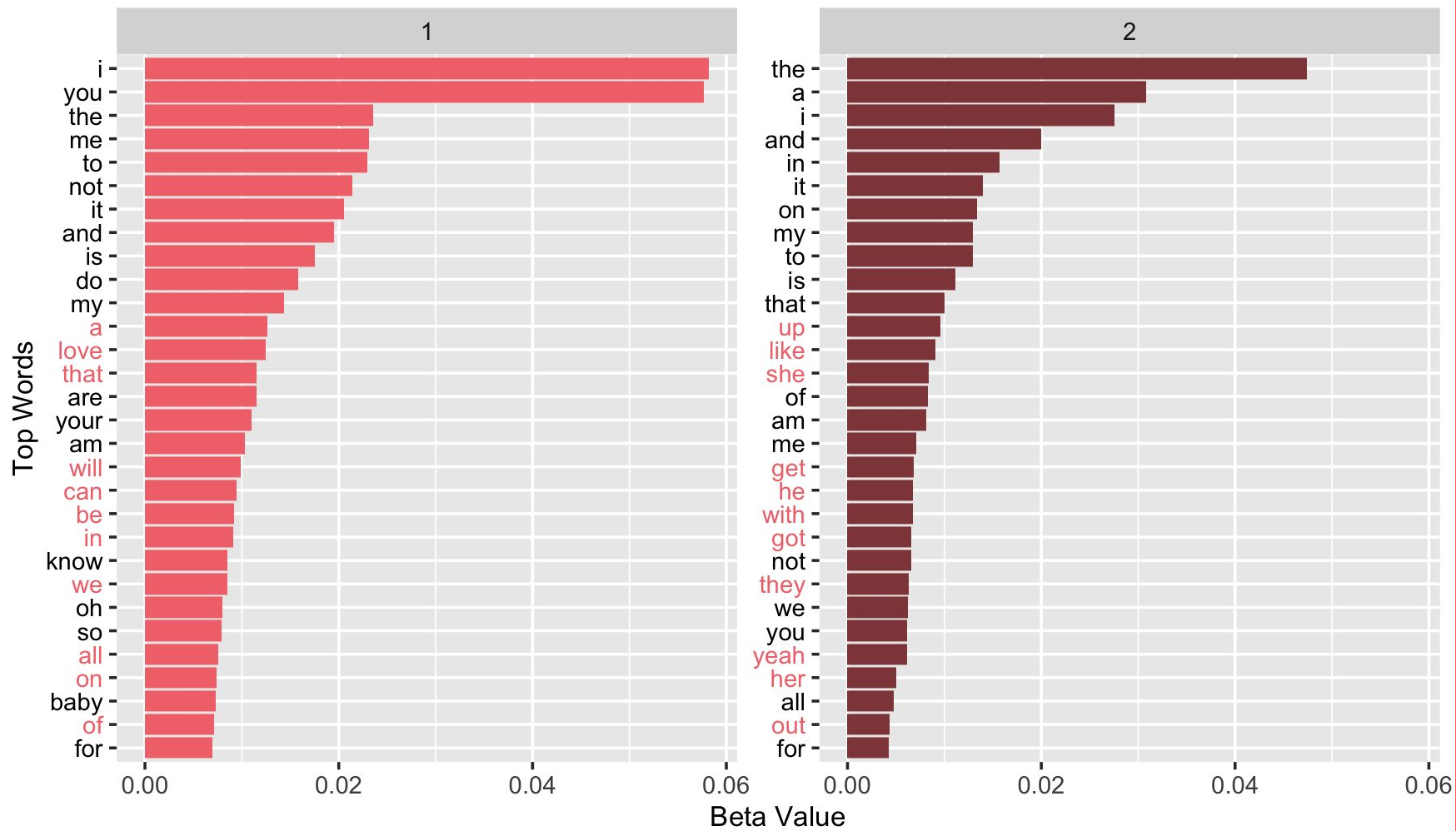
# Topic Modeling

Love Song Count Over 75 Years

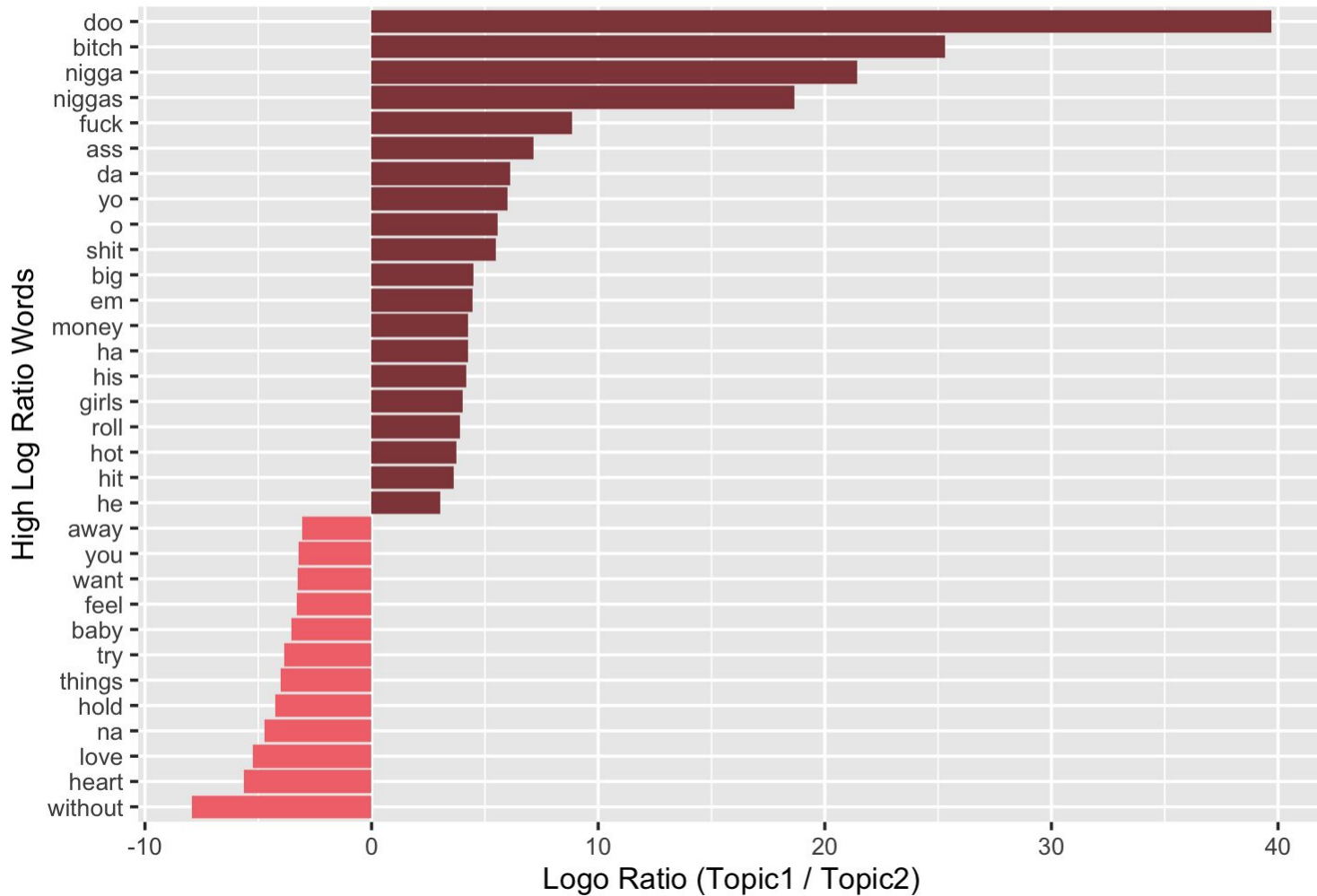




# Top 30 Words In Love Songs and Others



## Topic Modeling By Log Ratio



Love Song

FALSE  
TRUE

Top Modeling

## Ballerina (1948)



Dance, ballerina, dance  
And do your pirouette in rhythm with your achin' heart  
Dance, ballerina, dance  
You mustn't once forget a dancer has to dance the part

Whirl, ballerina, whirl  
And just ignore the chair that's empty in the second row  
This is your moment, girl  
Although he's not out there applauding as you steal the show

And love is gone, ballerina, gone  
So, on with your career; you can't afford a backward glance  
Dance on and on and on  
A thousand people here have come to see the show  
As 'round and 'round you go

## Bad Romance (2008 )



I want your ugly, I want your disease  
I want your everything as long as it's free  
I want your love, love, love, love  
I want your love

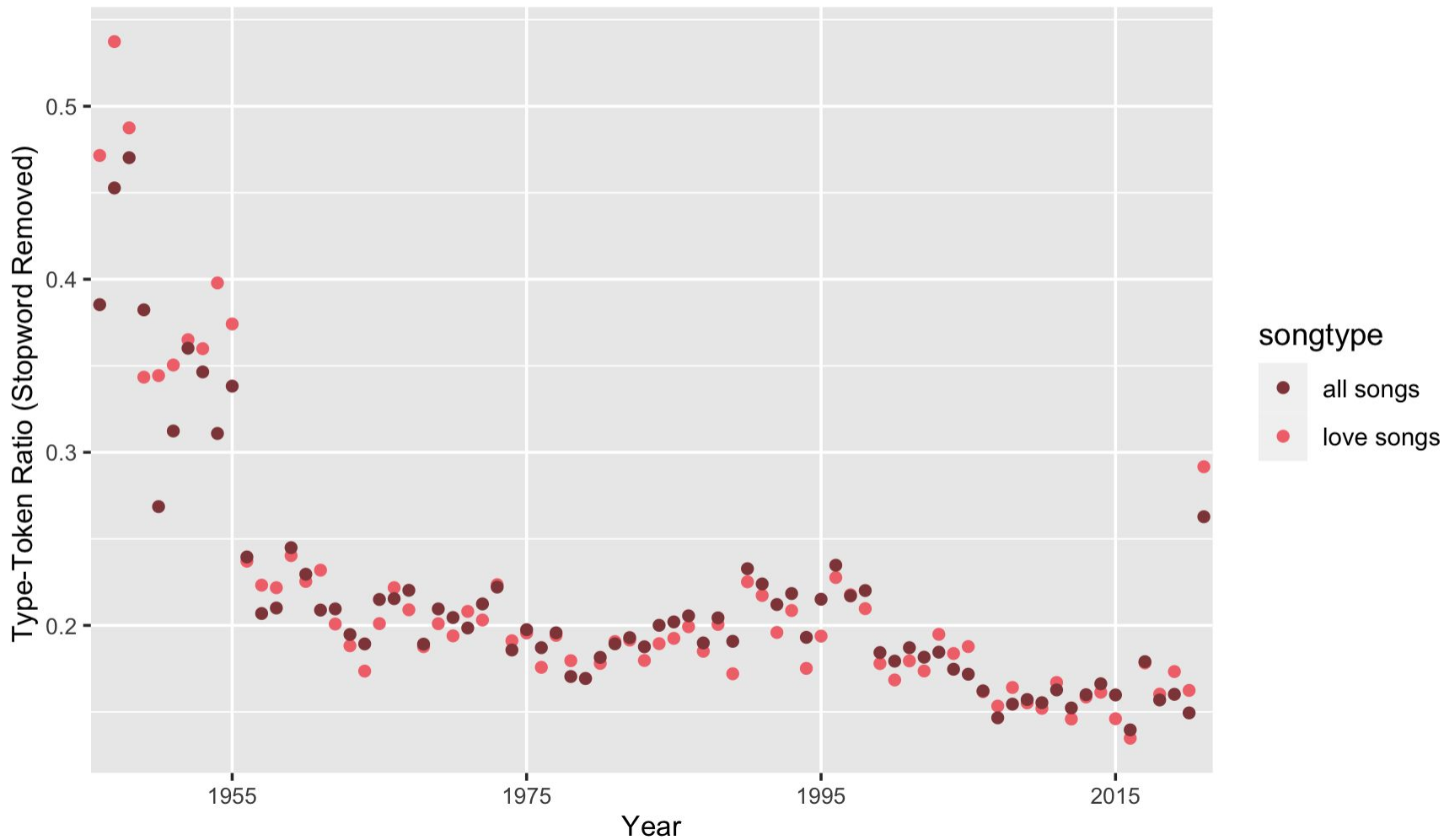
I want your drama, the touch of your hand  
I want your leather studded kiss in the scene  
I want your love, love, love, love  
I want your love  
(Love, love, love, I want your love)

I want your love and I want your revenge  
You and me could write a bad romance  
I want your love and all your lover's revenge  
You and me could write a bad romance

# Complexity Study

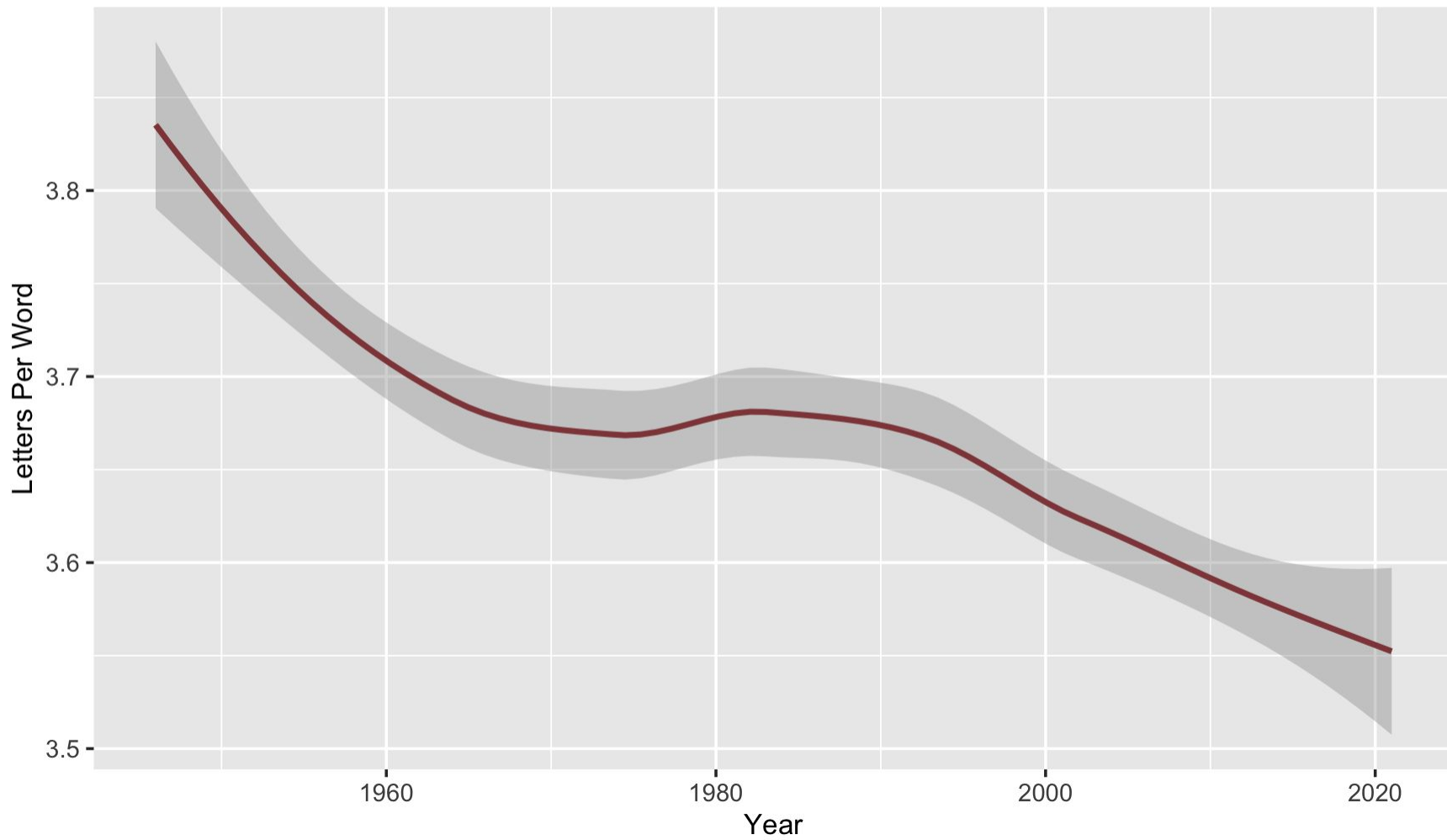
# Lexical Diversity TTR Over 75 Years

YES



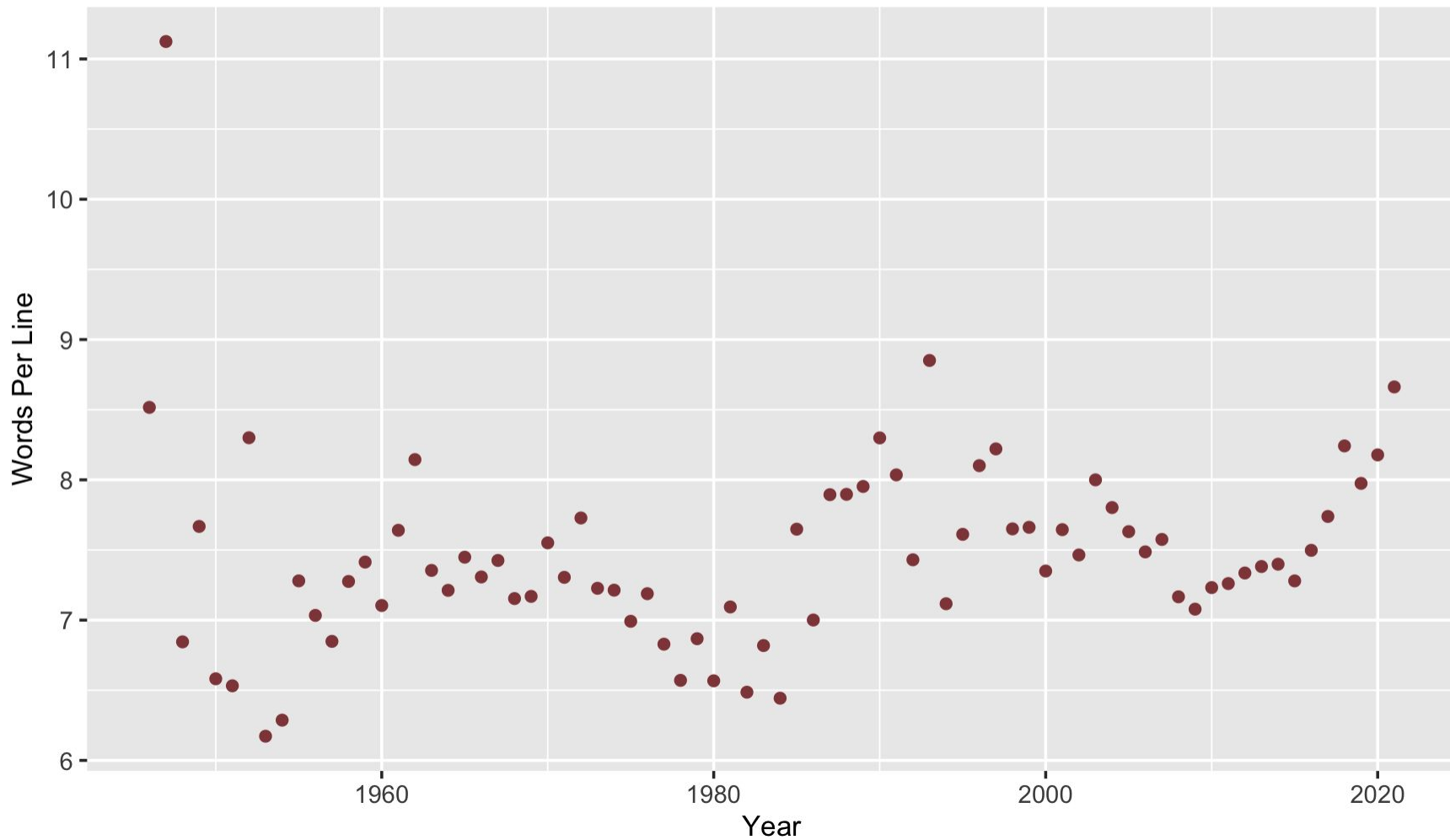
# Word Length Over 75 Years

YES

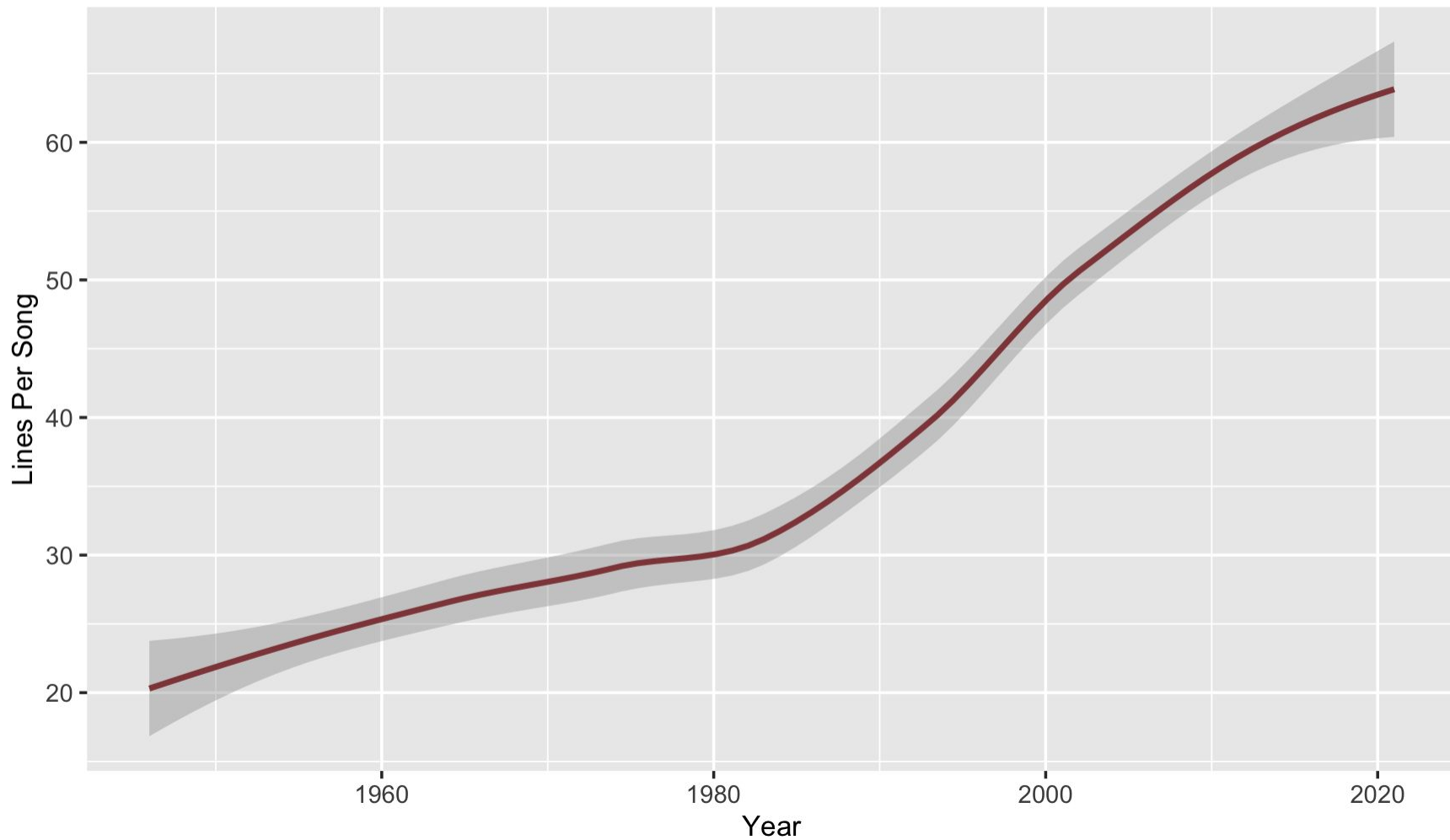


Complexity Study

# Line Length Over 75 Years

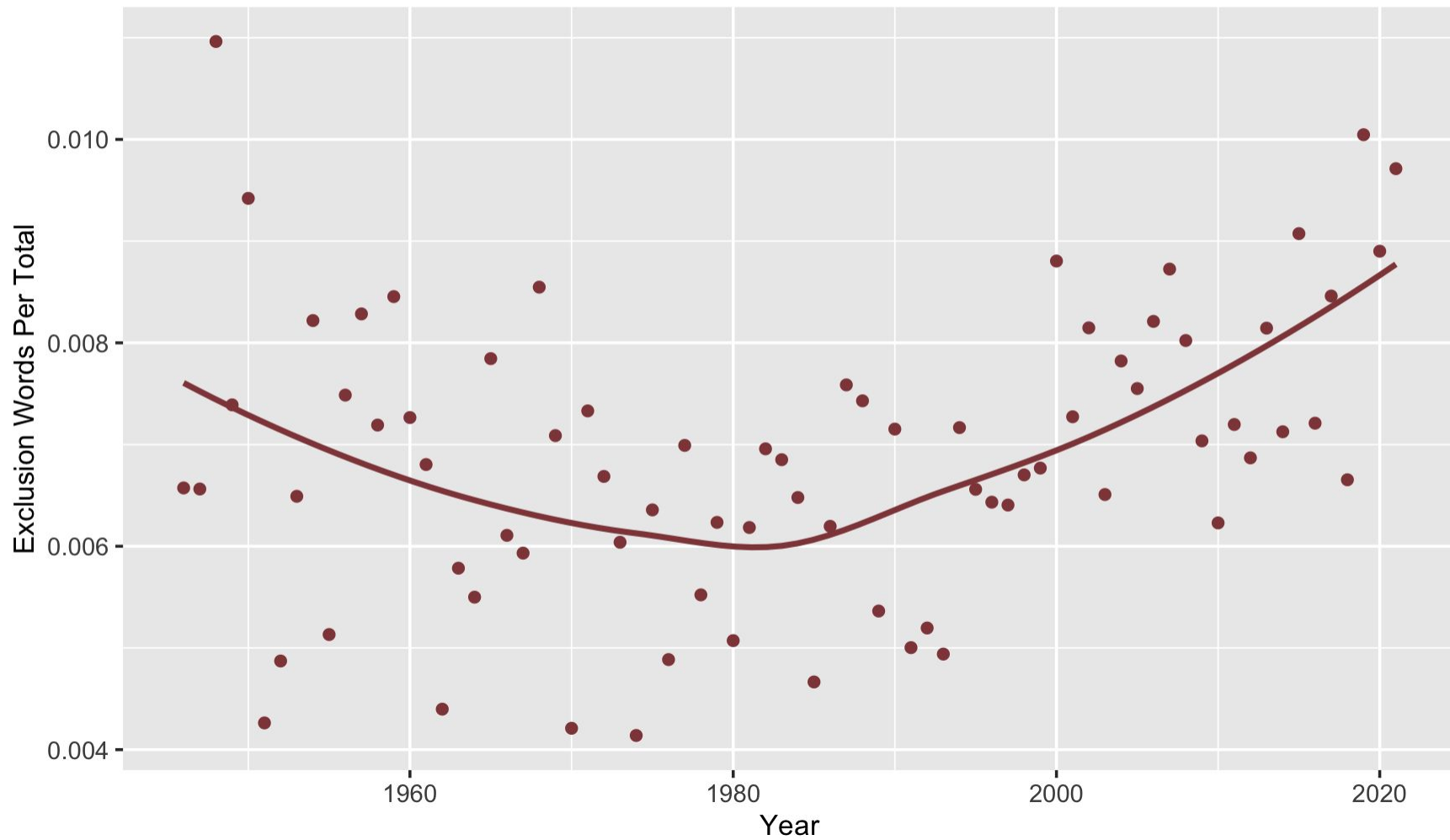


# Lyric Line Count Over 75 Years





# Exclusion Word Ratio Over 75 Years

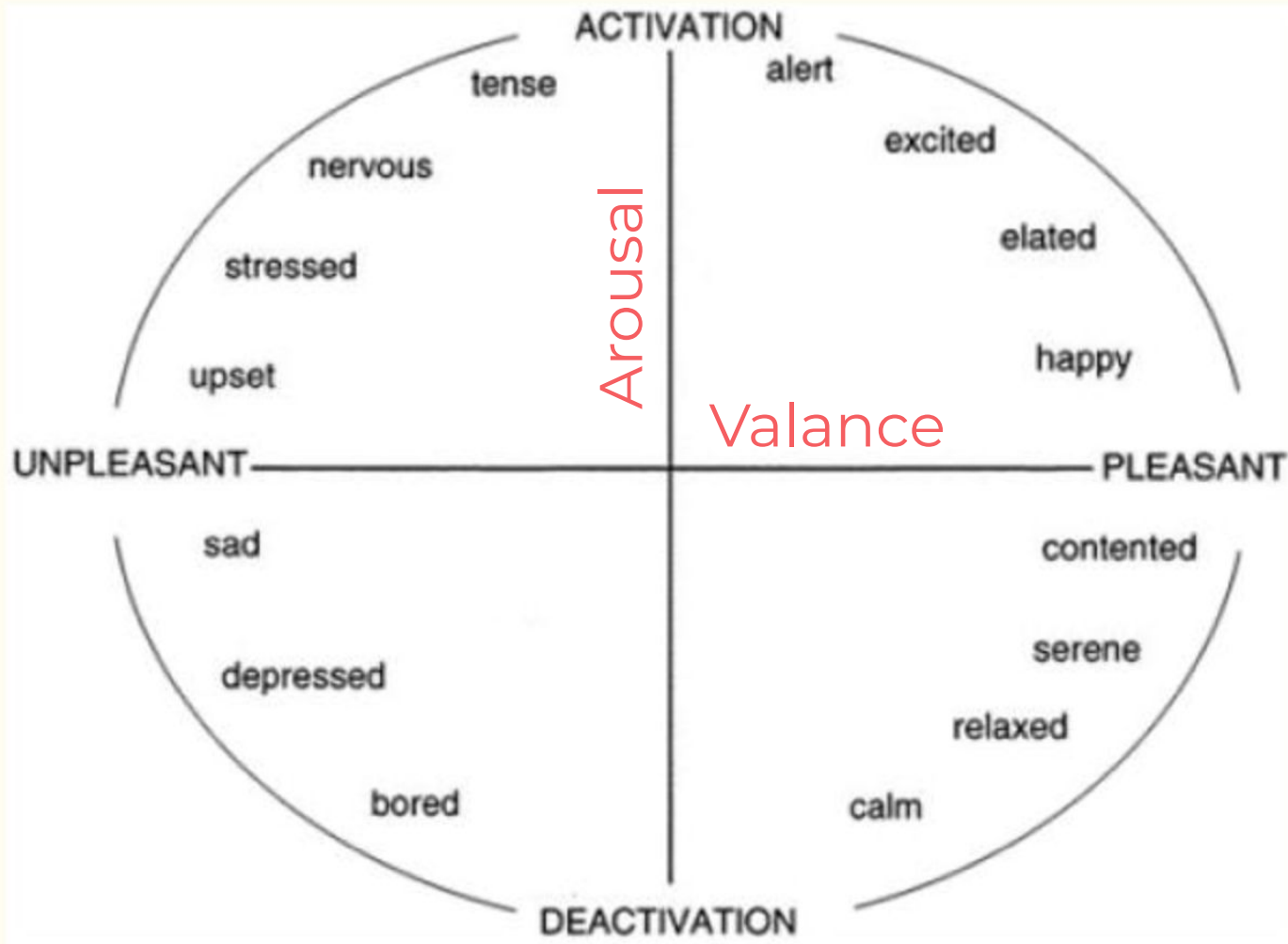


# Romance Thermometer

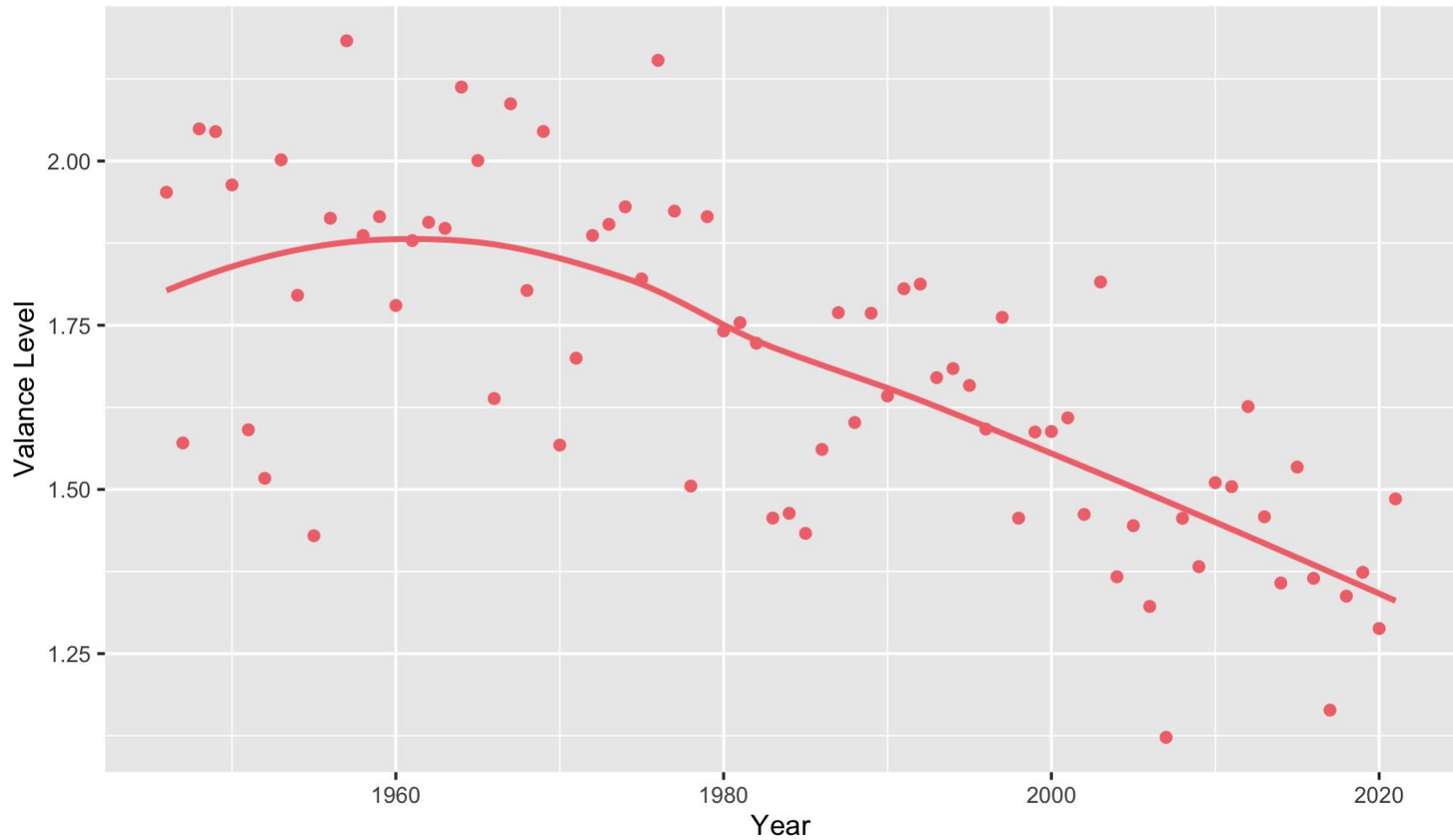
(sentiment analysis)

# Russell's Model

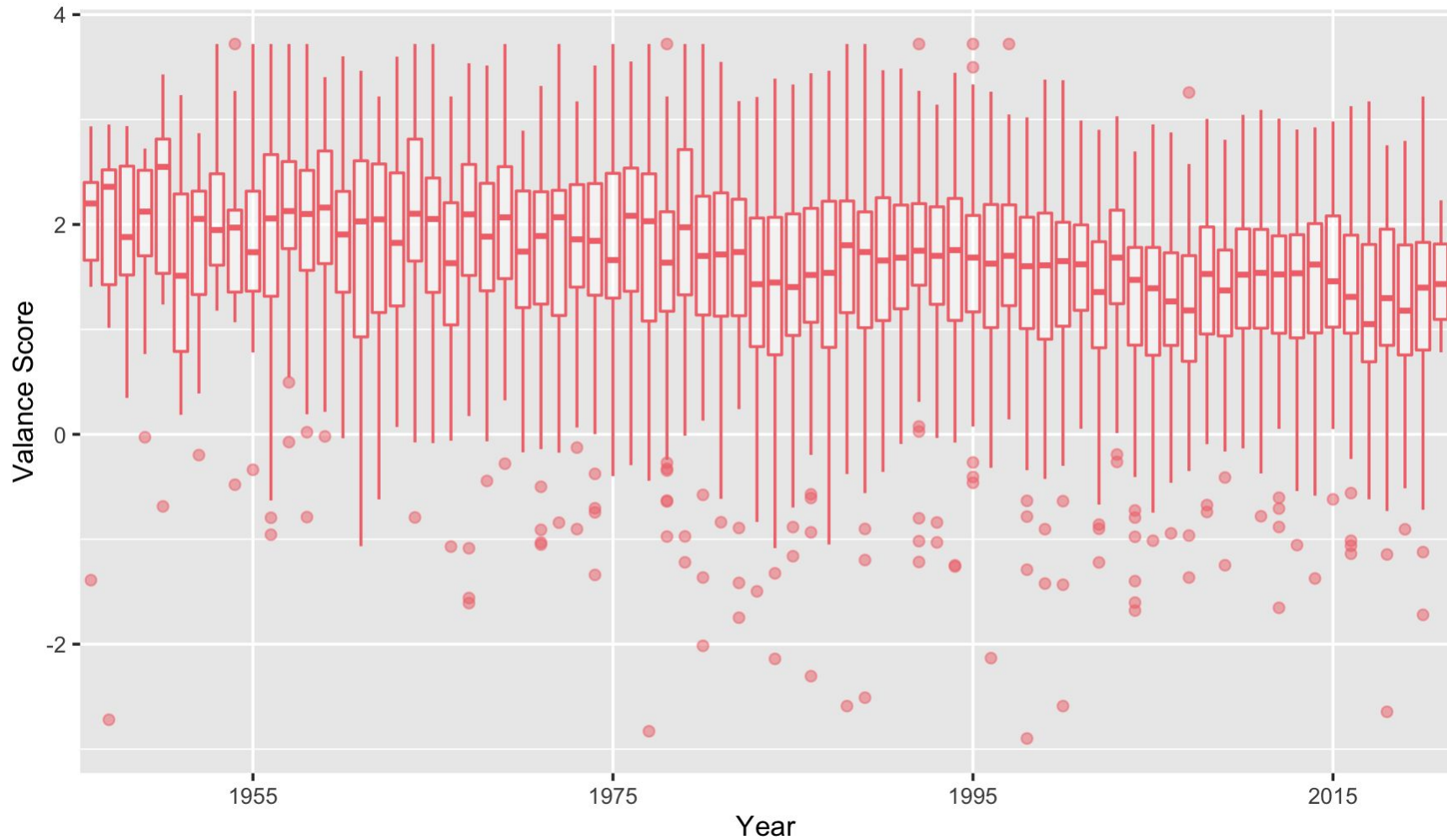
- Bradley (1999)
- Scaled at 1~9
- Rescaled -4~4
- 4843 songs
- 103,419 words



Valance Score Going Less Positive Over 75 Years

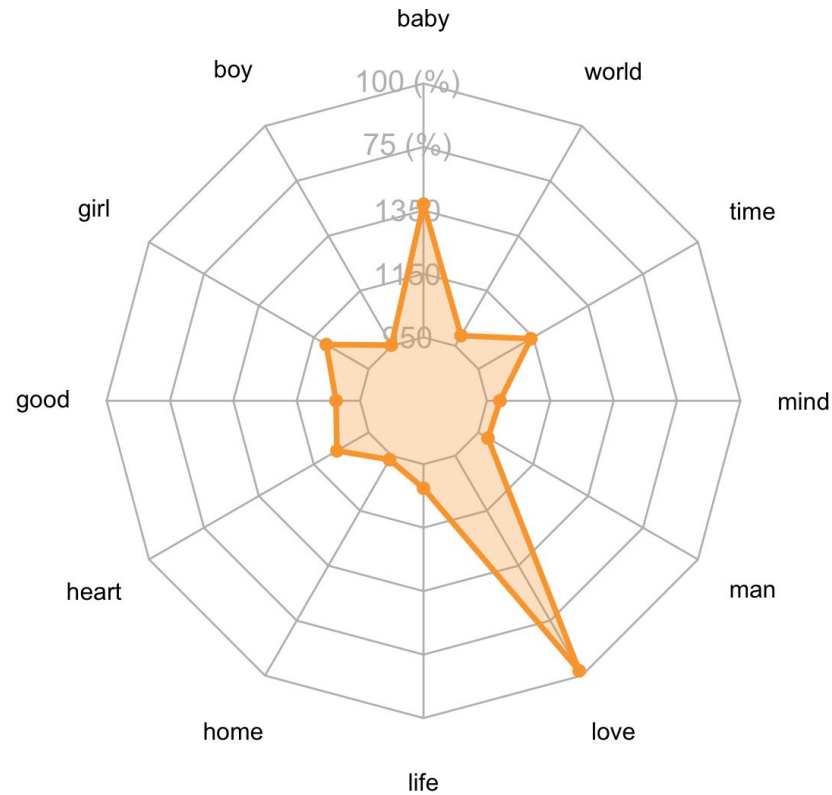


# Valance Score Going Less Positive Over 75 Years

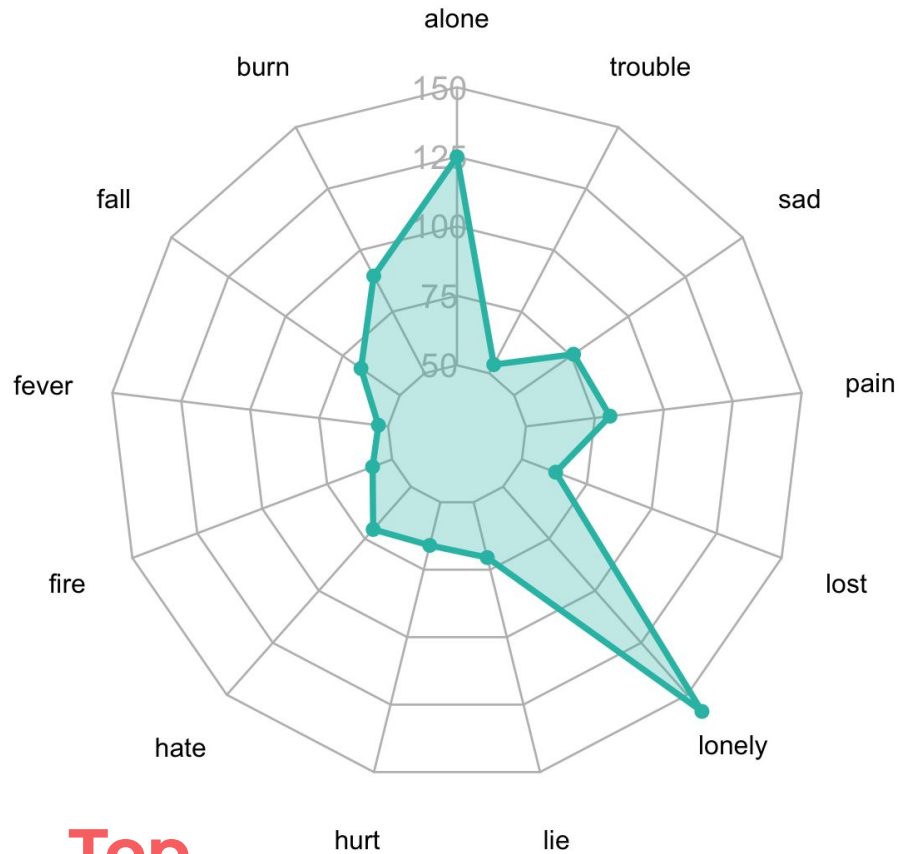


Romance Thermometer

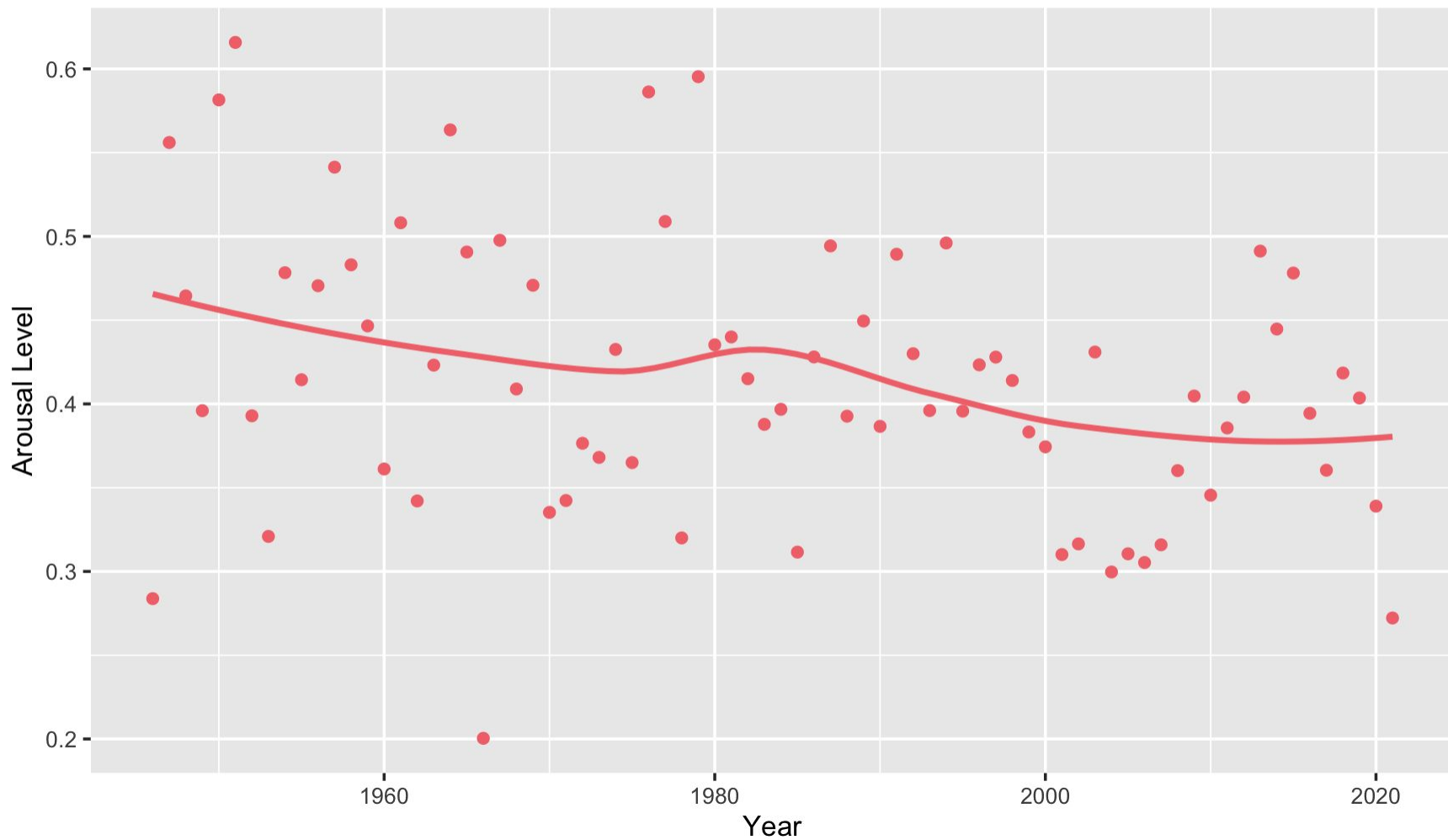
# Top Positive Words



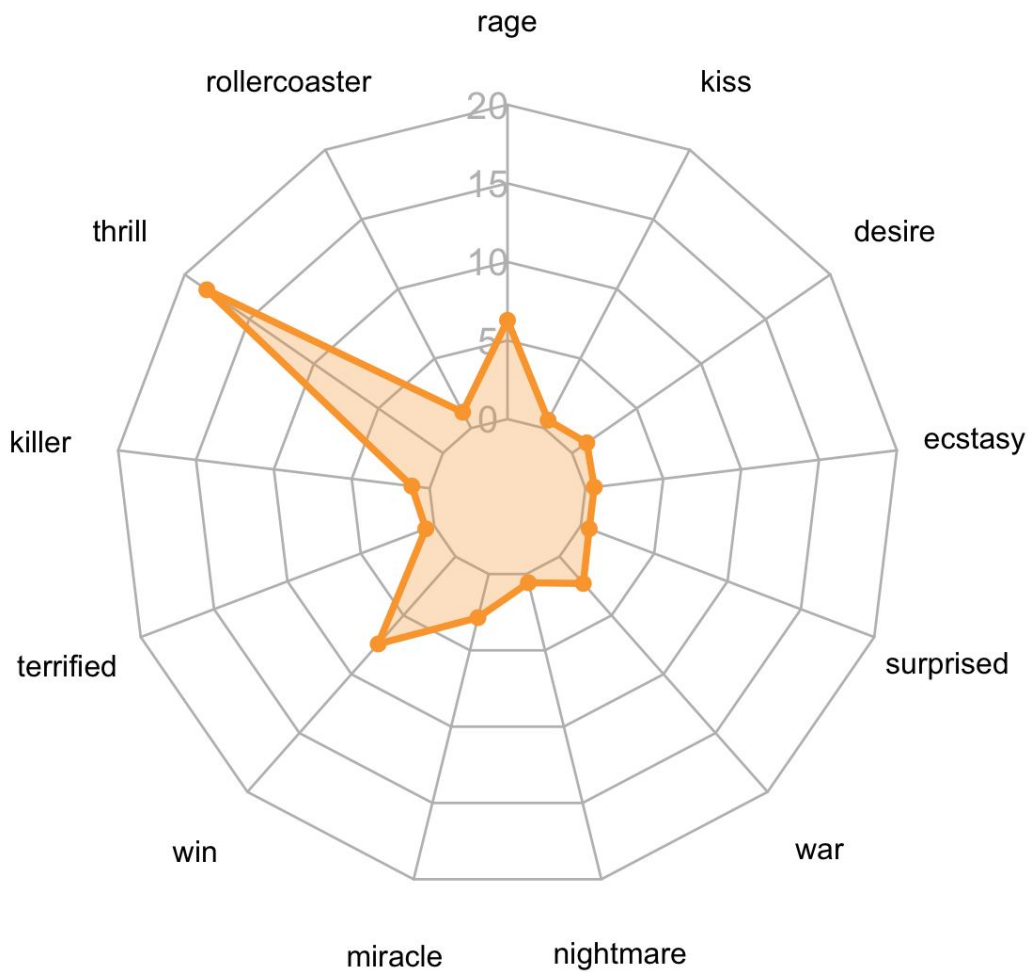
# Top Negative Words



# Arousal Score Over 75 Years

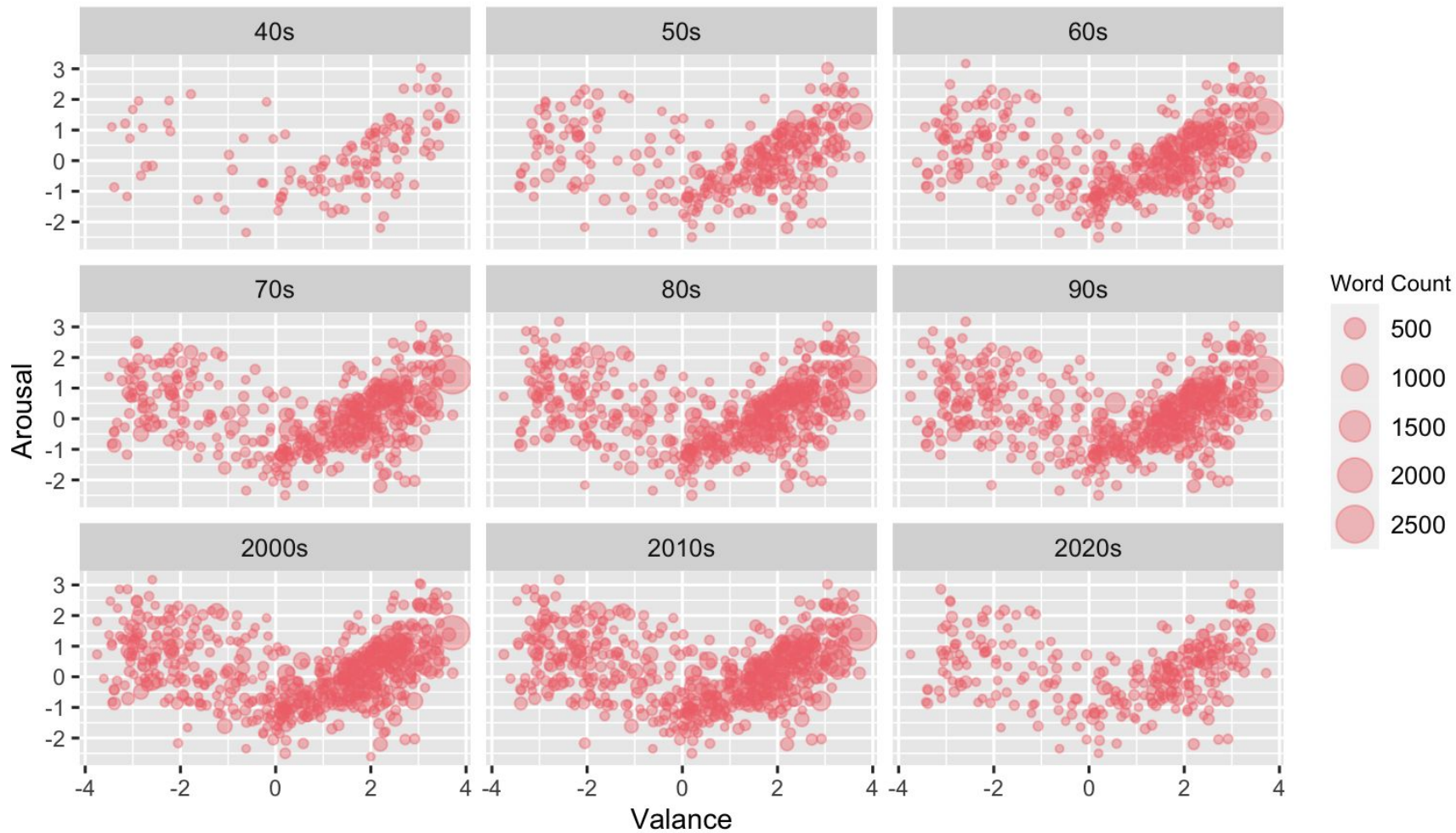


# Top Arousal Words

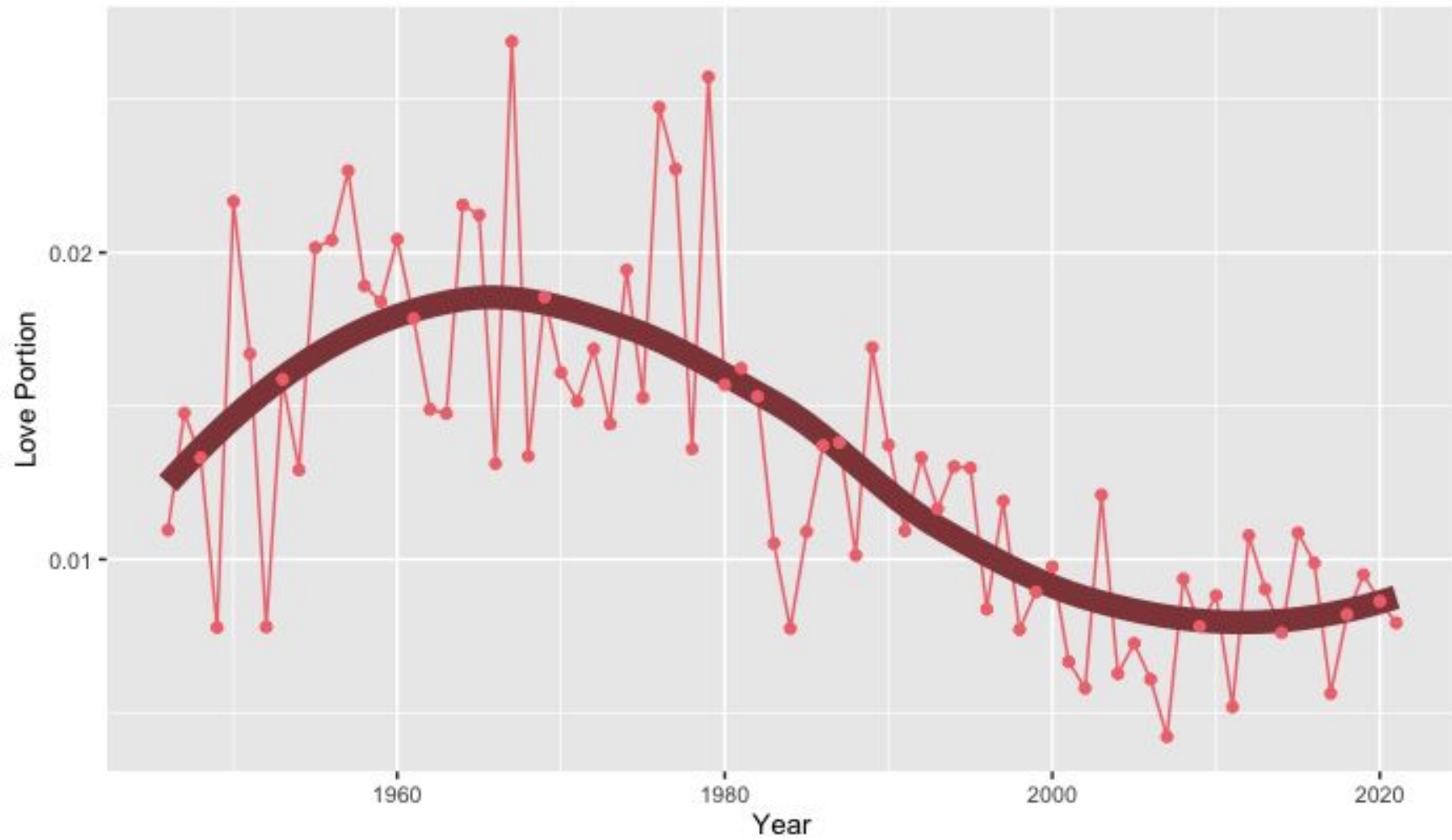




# 'Romance Thermometer' Over 9 Decades

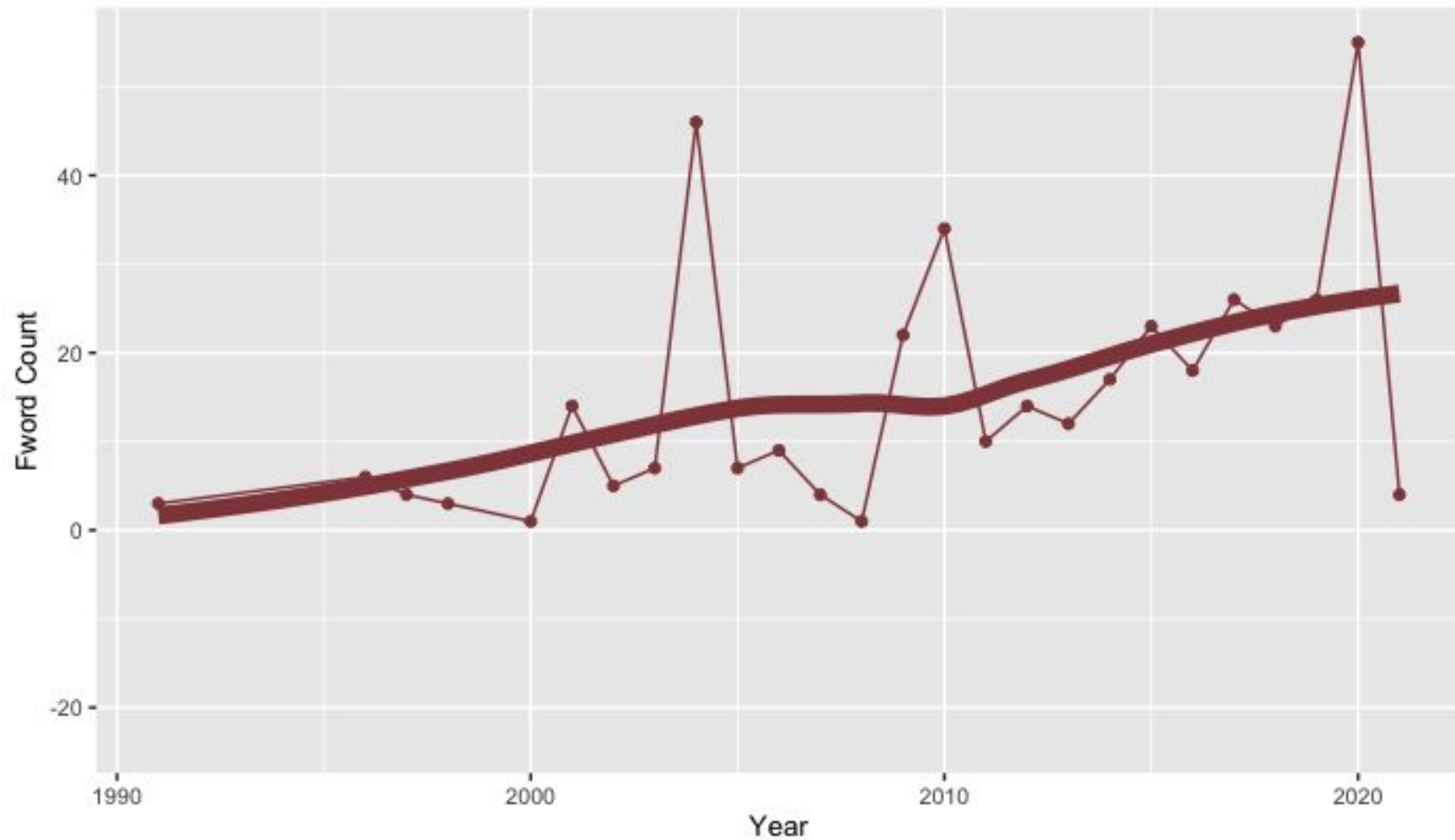


'Love' Sine Wave Over 75 Years

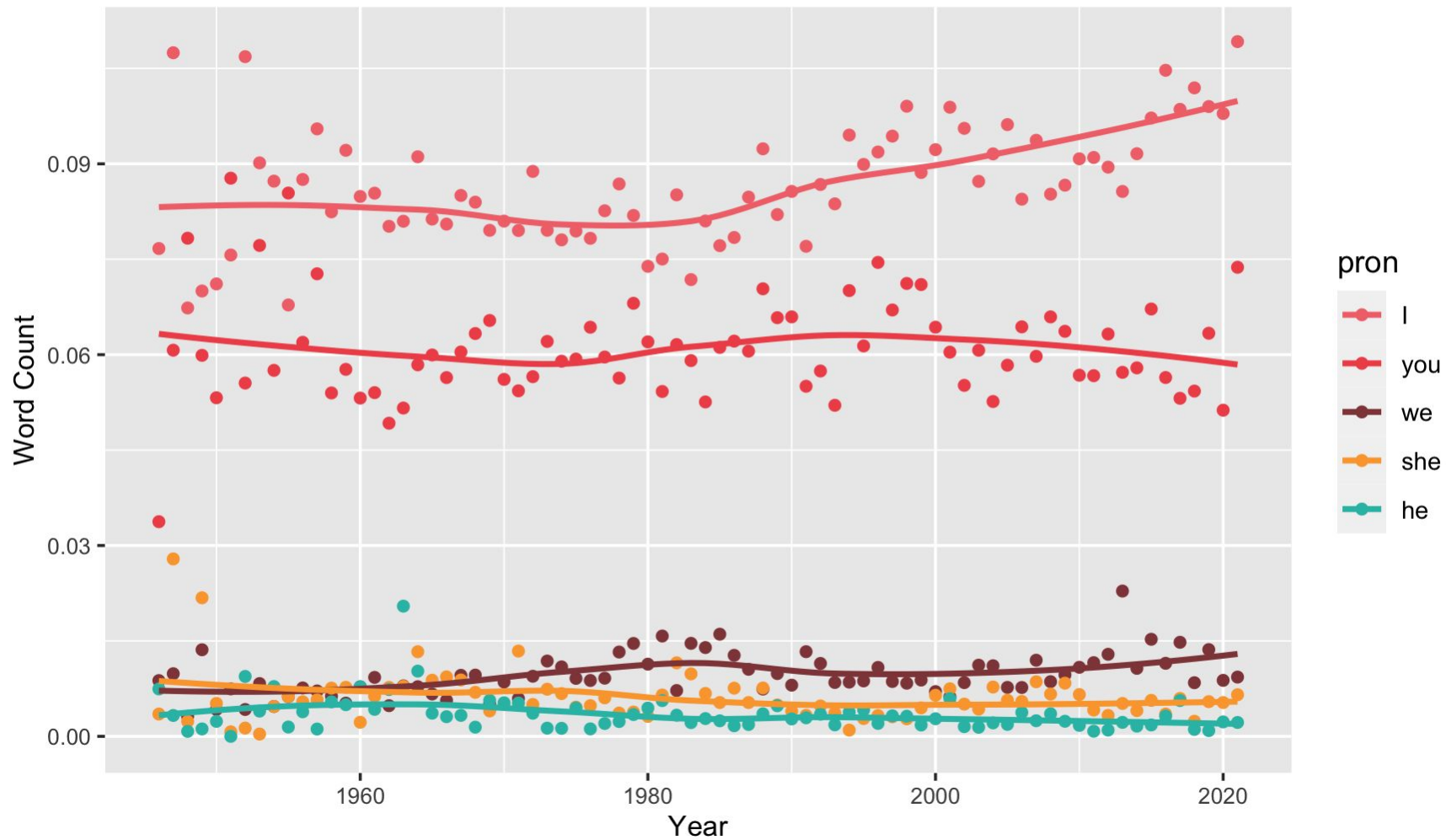


Romance Thermometer

## 'F\*ck' Climbed Since 1991



# Pronouns Count In Love Songs Over 75 Years

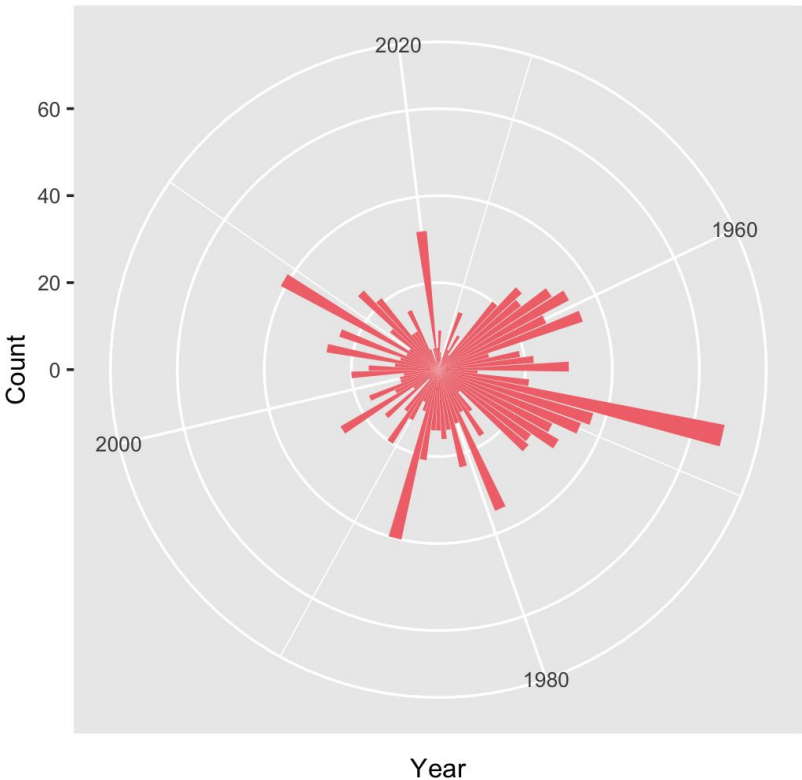


| decade<br><chr> | n<br><int> | bigram<br><chr> |
|-----------------|------------|-----------------|
| 40s             | 90         | ho ho           |
| 50s             | 190        | ah ah           |
| 60s             | 376        | la la           |
| 70s             | 459        | la la           |
| 80s             | 208        | yeah yeah       |
| 90s             | 317        | yeah yeah       |
| 2000s           | 361        | yeah yeah       |
| 2010s           | 567        | yeah yeah       |
| 2020s           | 219        | yeah yeah       |

Bigram

Trigram

Trigram 'I love(d) you' Occurred 1324 Times Over 75 Years







## Top 50 Negative Valance Words

A word cloud in the shape of a heart, composed of various negative words. The words are arranged in a circular pattern, with 'lonely' being the largest and most central word. Other prominent words include 'pain', 'hurt', 'dead', 'fever', 'cruel', 'fight', 'lie', 'dirty', 'slow', 'war', 'sad', 'hate', 'burn', 'afraid', 'broken', 'lost', 'scared', 'poison', 'fear', 'blind', 'pressure', 'mistake', 'hungry', 'pity', 'toxic', 'bored', 'devil', 'sick', 'fat', 'mad', 'cut', 'hell', 'torture', 'crash', 'loser', 'murderer', 'cyclone', 'stress', 'danger', 'stupid', 'addicted', 'insane', 'trouble', 'nasty', 'fire', 'scream', 'war', 'slow', 'dirty', 'lie', 'fight', 'cruel', 'fever', 'dead', 'hurt', 'nasty', 'trouble', 'fire', 'scream', 'pain', 'lonely'.



love baby world mind

good  
loved  
kind  
angel  
sun  
party  
sleep  
beautiful  
music  
happy  
people  
god  
face  
wish  
strong  
young  
wonder  
friend  
blue  
pretty  
game  
free  
woman  
heaven  
honey  
chance  
sky  
easy  
boy  
kiss  
bed  
dream  
hope  
home  
girl  
heart

thought  
life  
money  
song  
man  
alive  
world  
life