

A painting of a deer and a duck in a field. A deer is on the left, looking towards the right. A duck is in the center, flying towards the left. The background is filled with tall, golden grass.

PARKS AND RECREATION

NATURAL LANGUAGE
PROCESSING OF
CHARACTER DIALOGUE

MADELINE VOSSBRINCK

AGENDA

- Background and Goal
- Tools and Methods
- Characters
- Results
- Conclusions and Next Steps

BACKGROUND AND GOAL

What is Parks and Recreation?

- NBC Comedy that ran from 2009 – 2015
- About employees of a parks and recreation department in Pawnee, Indiana

Why Parks and Recreation?

- Great cast of characters with unique relationships

What is the goal of using NLP on Parks and Recreation?

- See how well sentiment analysis works on character dialogue
- Seek out new insight on the show itself

TOOLS AND METHODS

Data Cleaning and EDA:

- pandas
- numpy
- nltk
- scikit-learn
- wordcloud
- seaborn
- matplotlib

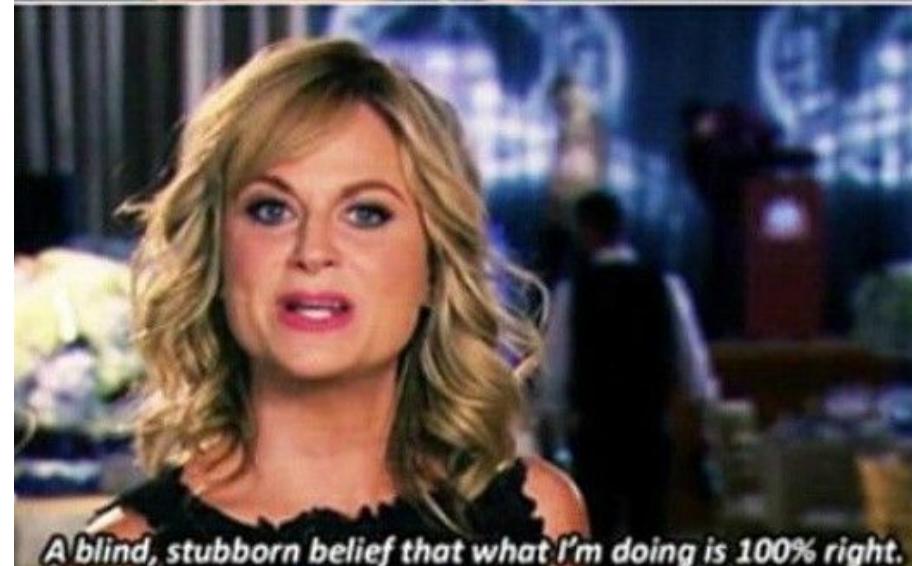
Topic Modeling:

- CorEx

Sentiment Analysis:

- vaderSentiment

LESLIE KNOPE



- Enthusiastic
- Passionate about her work
- Determined
- Opinionated
- Loyal, supportive friend
- Believes in larger government

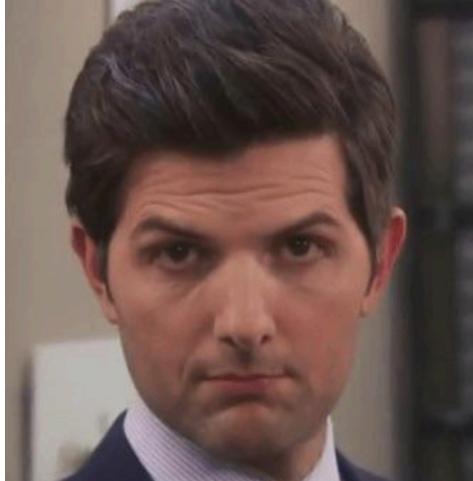
LESLIE'S CLOSEST RELATIONSHIPS

HER BEST FRIEND



ANN PERKINS

HER ROMANTIC PARTNER

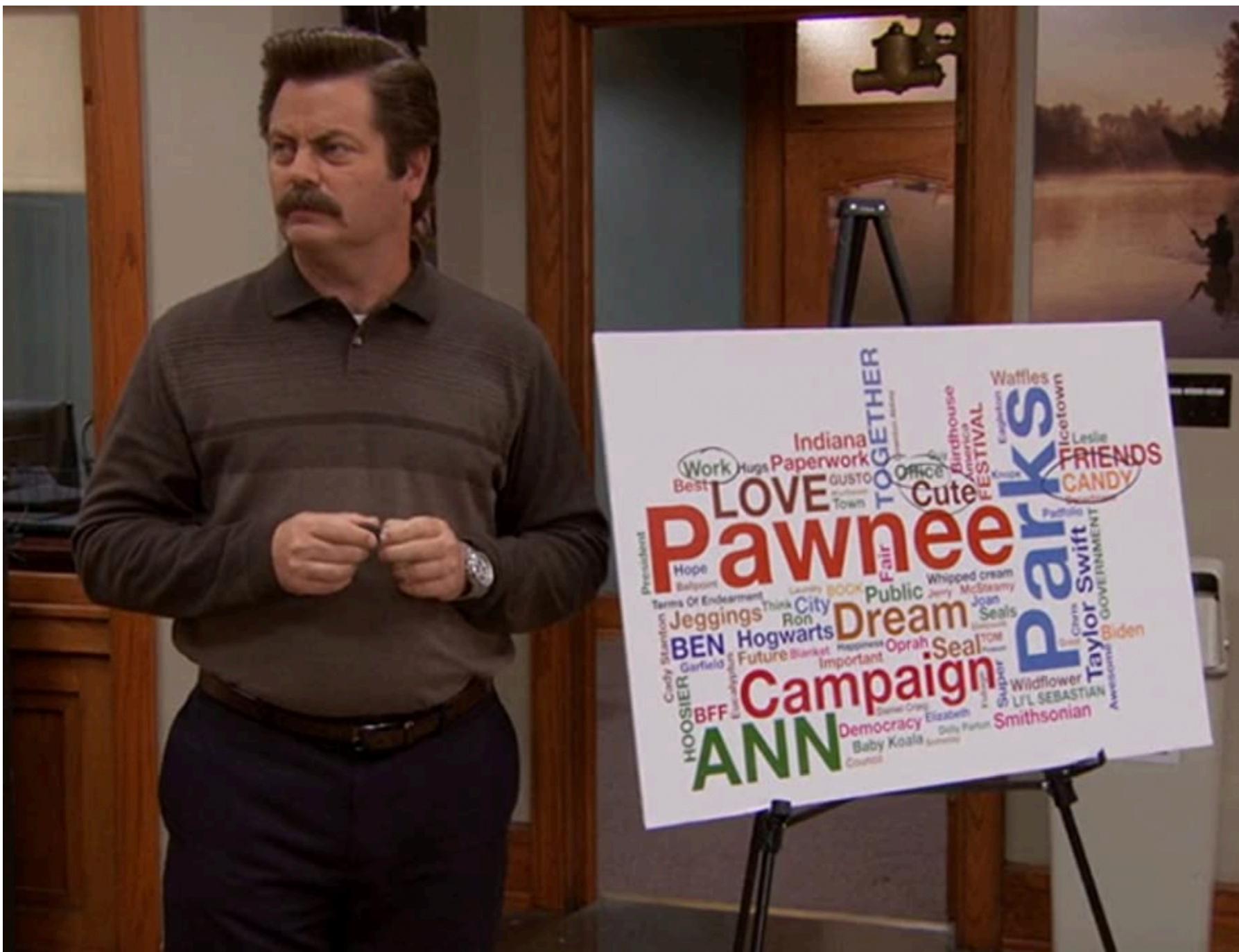


BEN WYATT

HER BOSS AND MENTOR



RON SWANSON

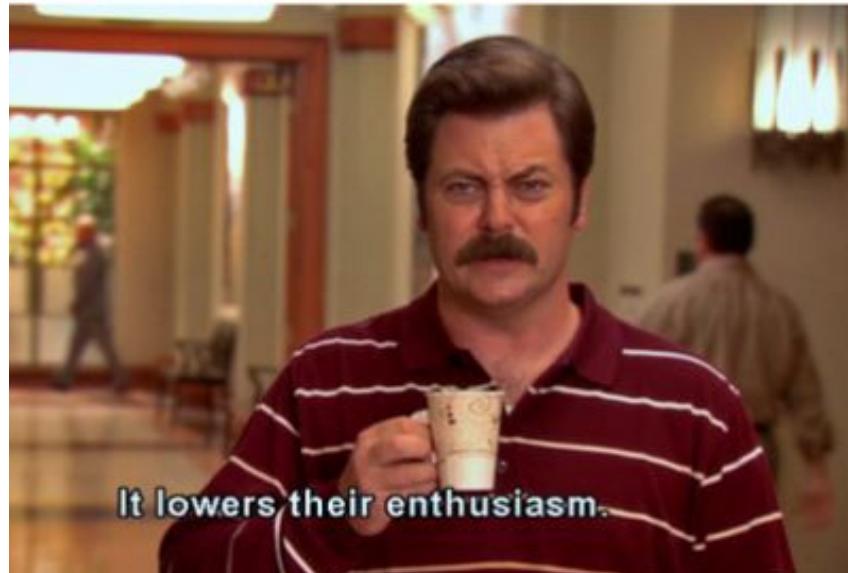
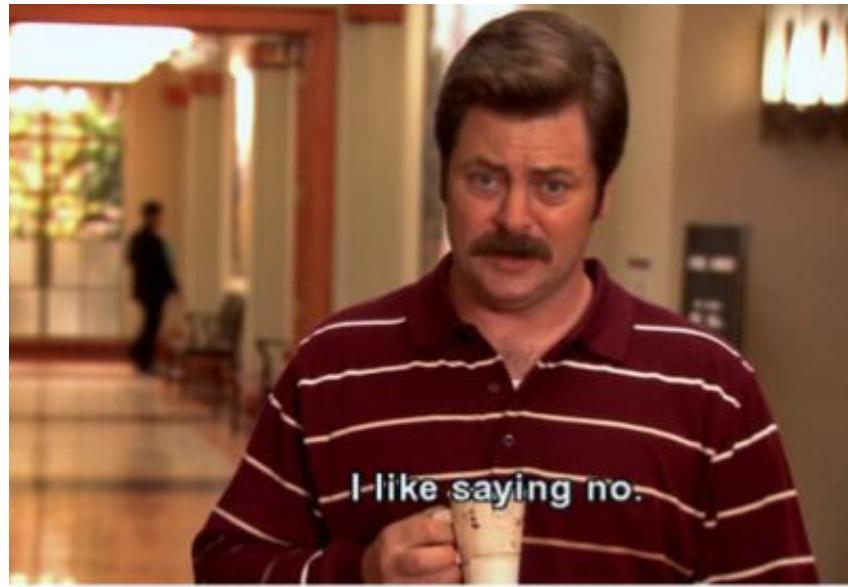


little love people eyes work help
idea april
pawnee
sorry town
ann ron park talk ben
way give jerry friend
great thank
tom try call

	Total Episodes
Ron Swanson	124
Ann Perkins	100
Ben Wyatt	97

	Total Words Spoken
Ron Swanson	38,794
Ben Wyatt	38,194
Ann Perkins	29,122

RON SWANSON



- Opinionated
- Private
- Stern
- Libertarian
- Capitalist
- Works in the parks department as an effort to curb government spending and influence

CorEx TOPIC MODELING

ANCHOR WORD:
GOVERNMENT



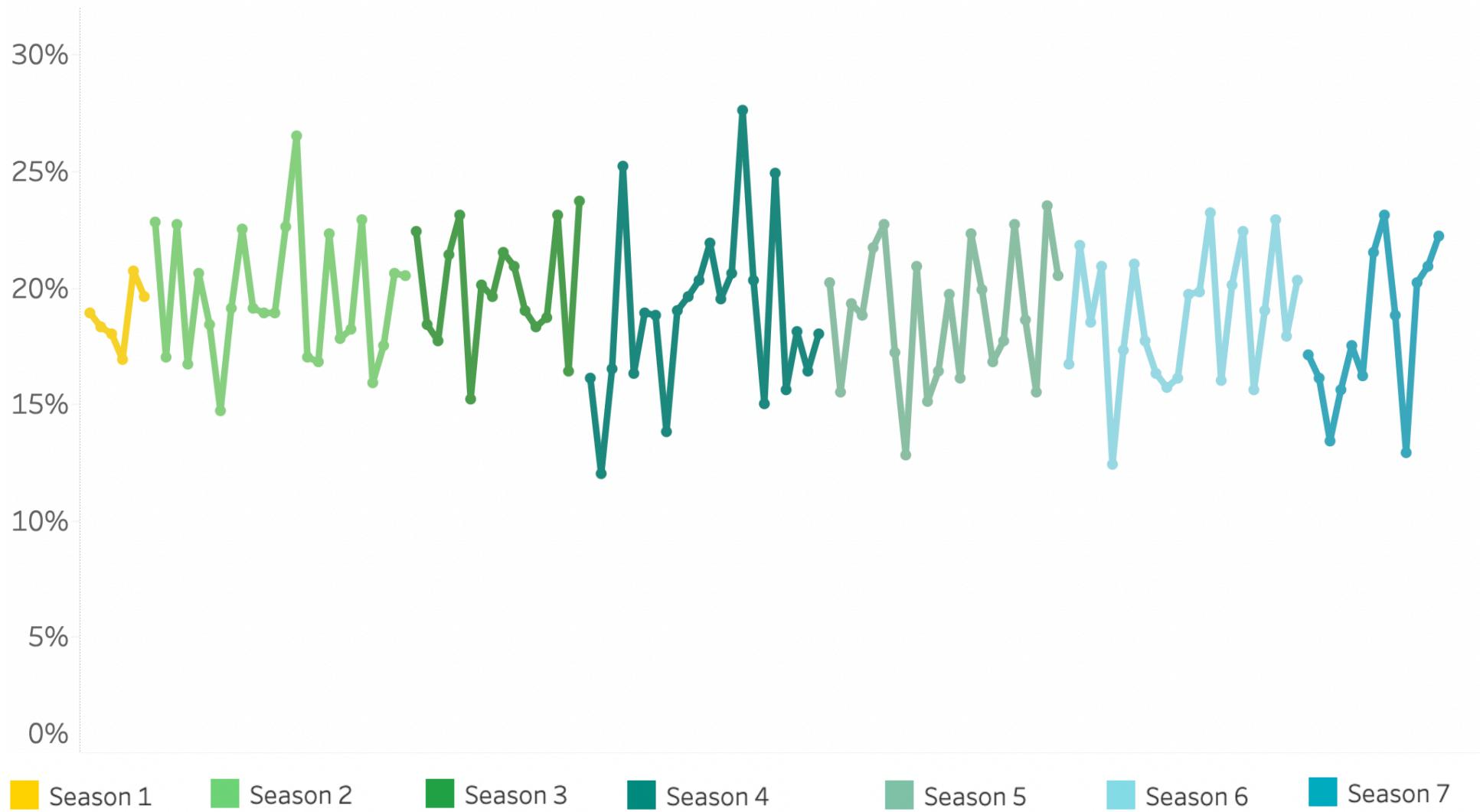
federal
wheel
turning
intern
ready
brainstorming
themselves
moved
truck



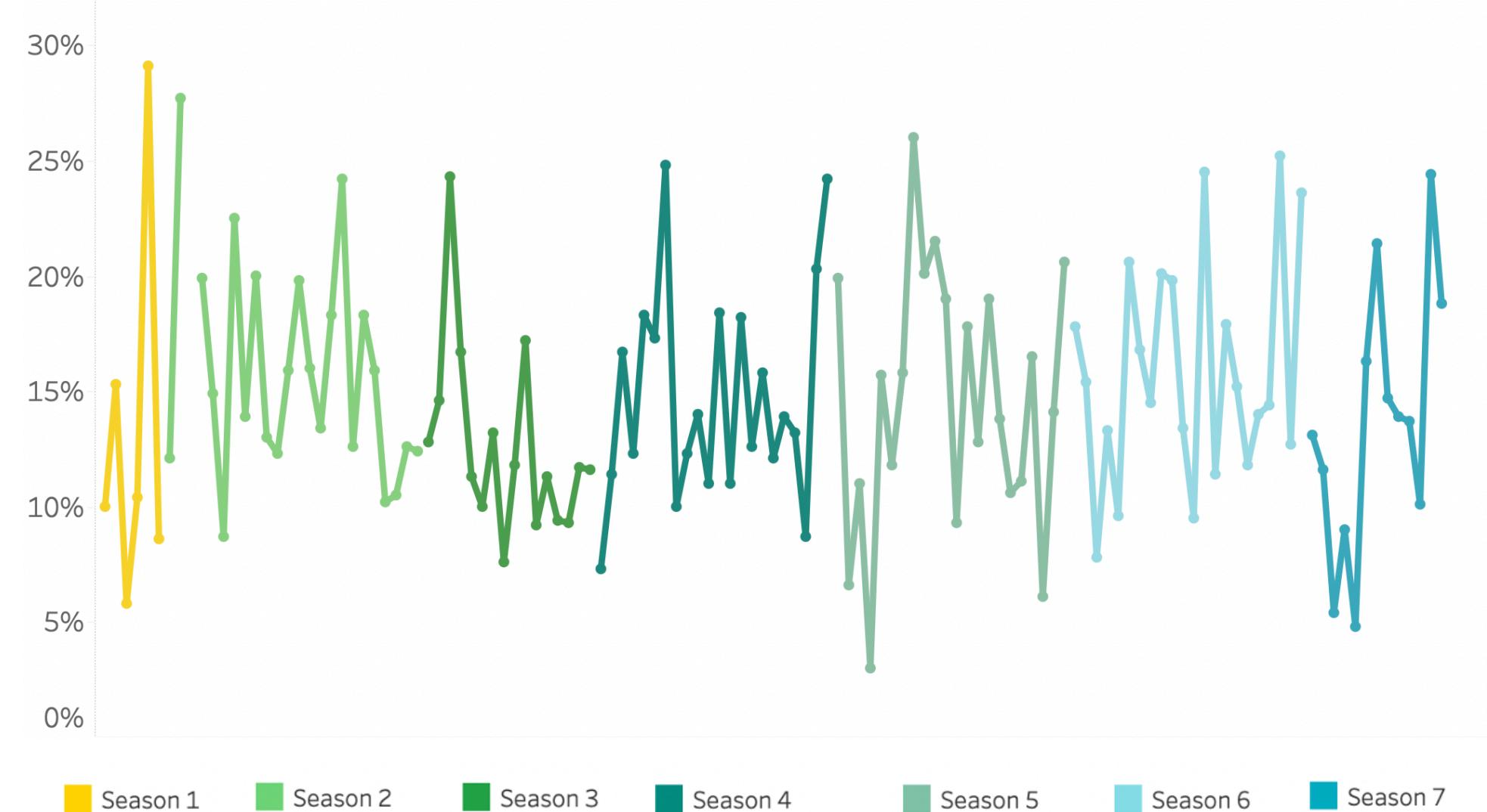
office
taxpayer
meet
large
crap
stand
dollar
hired
wasting



Positive Sentiment Over Time (% of Total)



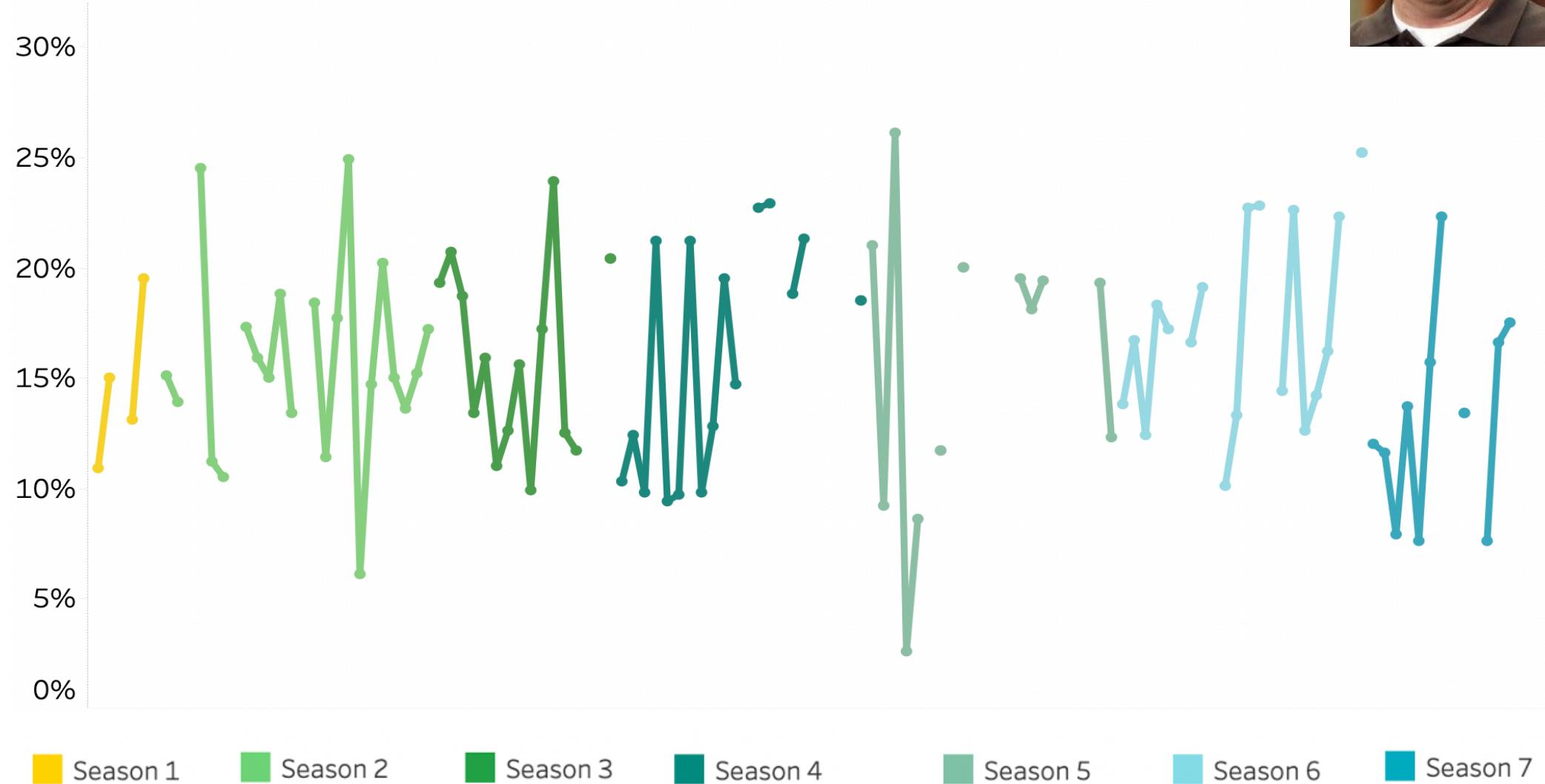
Positive Sentiment Over Time (% of Total)





Positive Sentiment Over Time

(% of Total)



“This is ridiculous. You're punishing yourself more than anybody else is gonna punish you.”

- Ron to Leslie (Season 1, Episode 4)

Positive: 0% , Neutral: 53.7%, Negative: 46.3%

“No, they were rude, arrogant, narrow minded, class A jerks!”

- Leslie to Ron (Season 2, Episode 5)

Positive: 0% , Neutral: 44.9%, Negative: 55.1%

CONCLUSIONS

- Topic modeling and sentiment analysis gave mixed results
- Capturing conversations in dialogue without scene indicators is a challenge
- Sentiment of conversations between two characters don't necessarily reflect their feelings toward each other

NEXT STEPS

- Do a more in depth analysis of Leslie and Ron's conversations
- Revisit episode topic modeling
- Try clustering different episodes

Questions?