

The background features a complex network of thin grey lines connecting various points, forming a web-like structure. Scattered throughout are numerous triangles of different sizes and orientations, some with solid grey dots at their vertices. The overall aesthetic is minimalist and technical, suggesting a network or data visualization.

# Understanding r/Depression and r/SuicideWatch

---

Are these communities viable support  
resources for at-risk individuals?

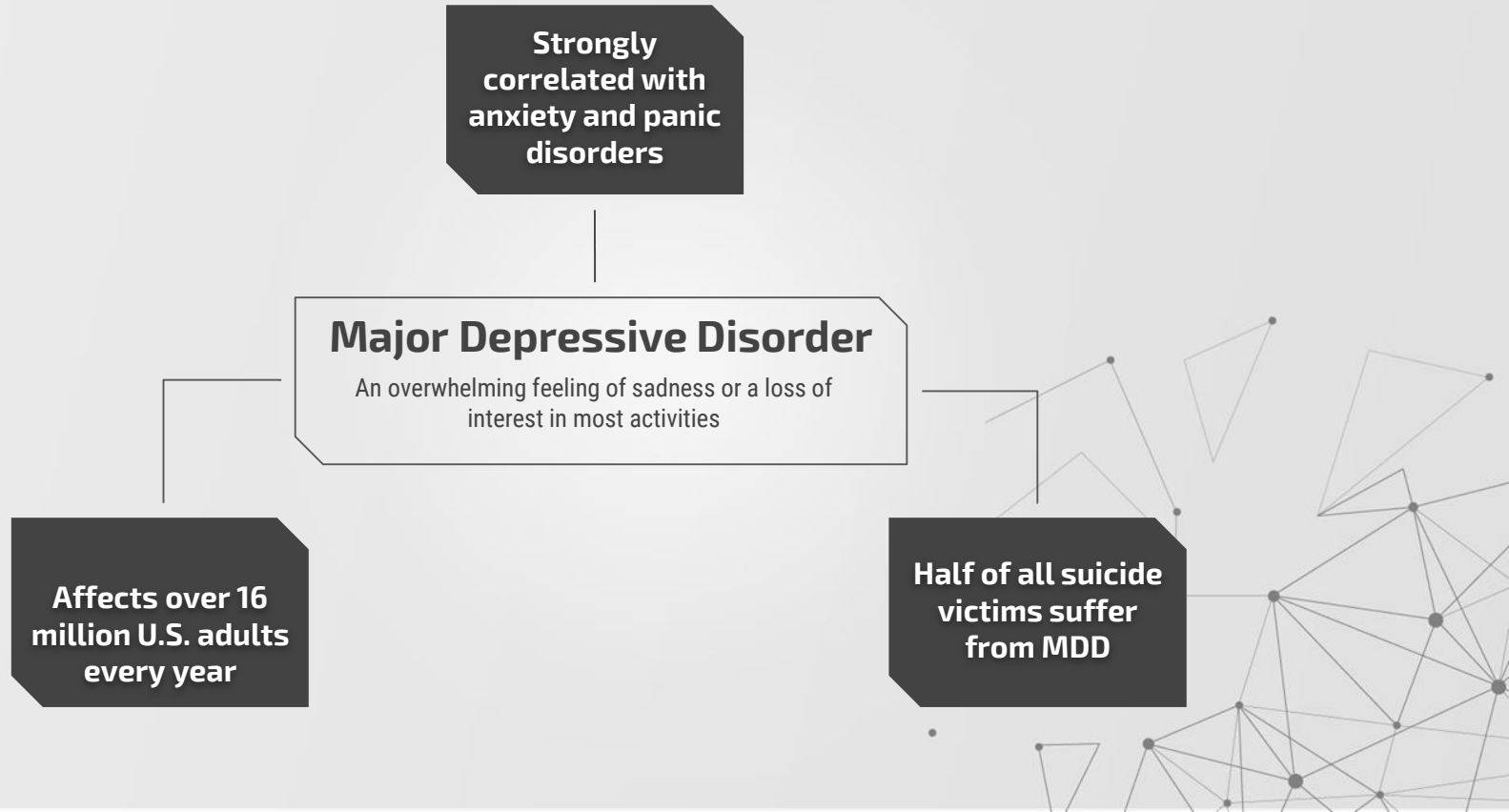


# 01

## Depression and Suicide

---

# A Leading Cause of Disability in U.S. Adults



# How Suicide Impacts Us

**1.3%**

Of U.S. deaths are suicide-related

---

**2<sup>nd</sup>**

Leading cause of death, ages 15 - 34

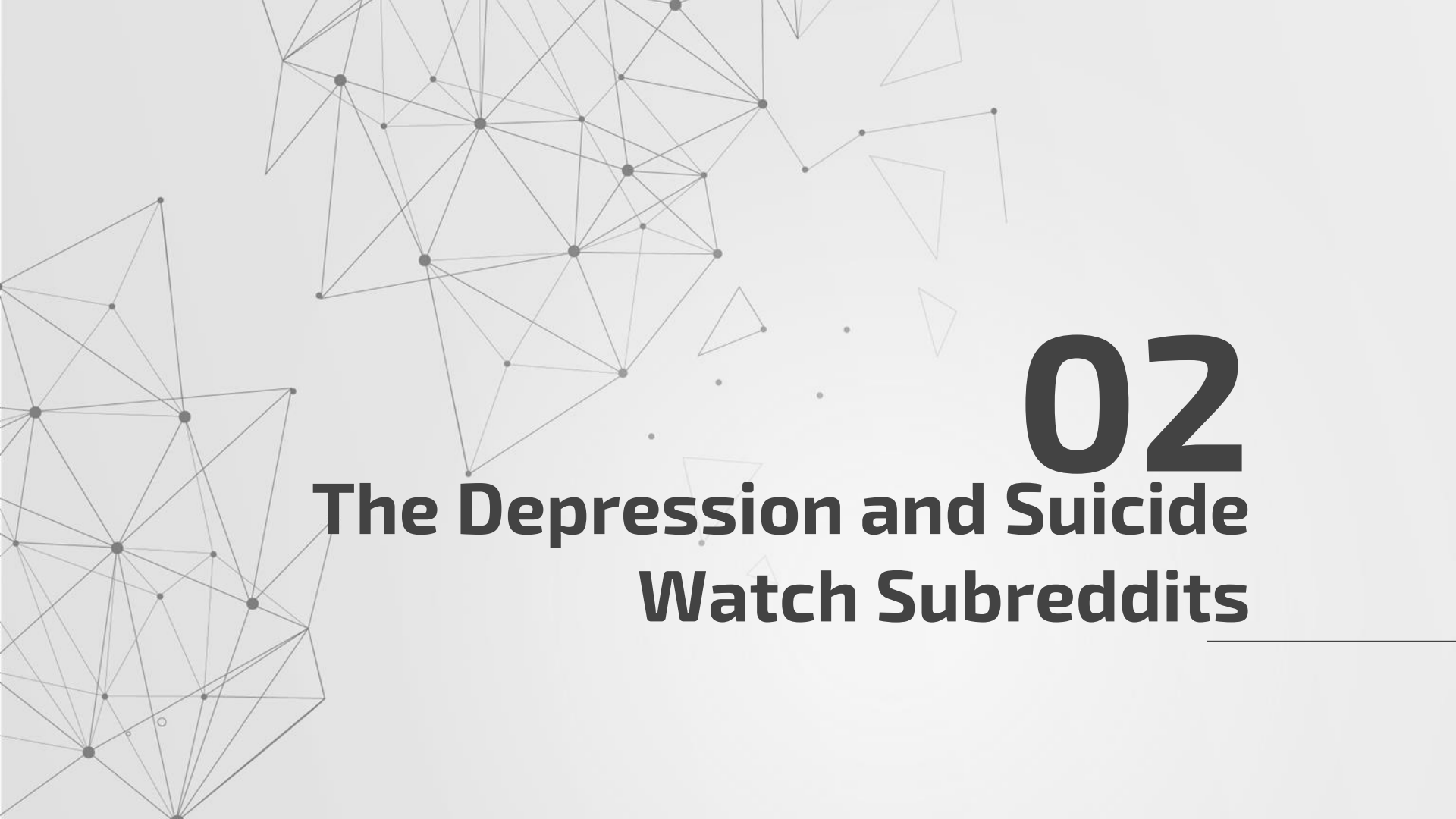
---

**123**

Suicides per day

---





**02**

# **The Depression and Suicide Watch Subreddits**

---



# The r/Depression Subreddit

"Peer support for anyone struggling with depression, the mental illness"

"We are not a crisis service. We can't guarantee an immediate response."

"It's usually more helpful to post anything that specifically involves suicidal intent in r/SuicideWatch"

579,000 members

Created Jan 1, 2009

Text posts only

No diagnoses allowed

Nothing explicit about self-harm

Support, rather than advice



# The r/SuicideWatch Subreddit

"This is a place of support"

"If you're here to help, please respond publicly to our OPs in need"

Talking Tips and Risk Assessment guides provided for community

172,000 members

Created Dec 16, 2008

Direct, personal, supportive

No diagnoses allowed

Non-judgmental comments only

No pro-suicide posts allowed

# 03

## Goals, Methodology, and Data





# Goals and Objectives:

## Quantify the environments of these communities



### Sentiment

How supportive are commenters towards posters?



### Word Usage

Do posters and commenters employ particular strategies when engaging in the r/Depression and r/SuicideWatch communities?

# Goals and Objectives:

## Identify fundamental differences between the subreddits



### Thread Metadata

In what ways do r/Depression Threads differ from r/SuicideWatch Threads?



### Classification

Can we distinguish posts involving depression from posts involving suicide?

# Dataset Overview

r/Depression	r/SuicideWatch
934 threads	980 threads
4,035 comments	4,447 comments



Threads and  
comments pulled  
from Reddit using  
PRAW

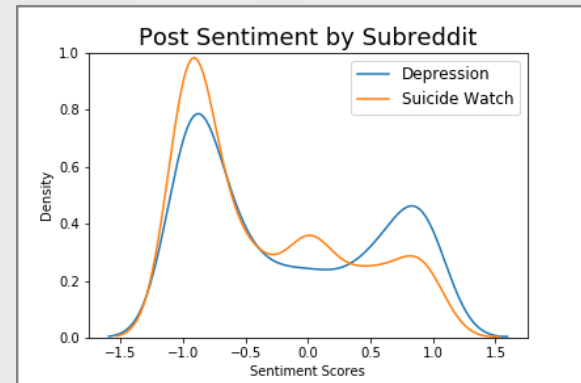
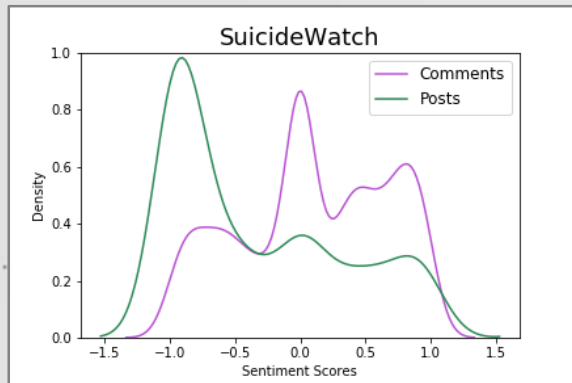
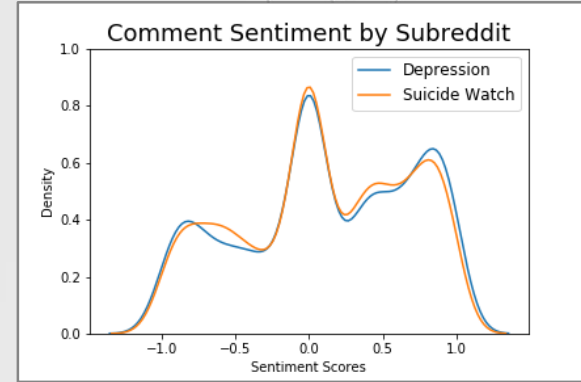
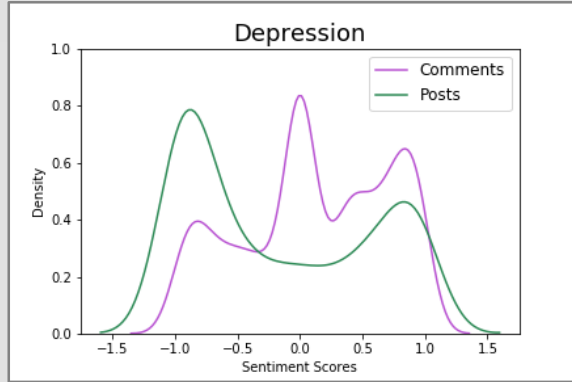


# 04

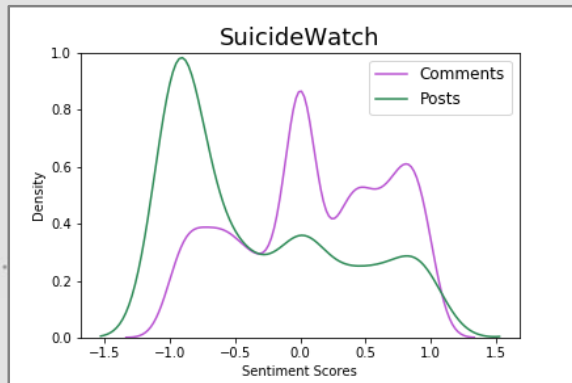
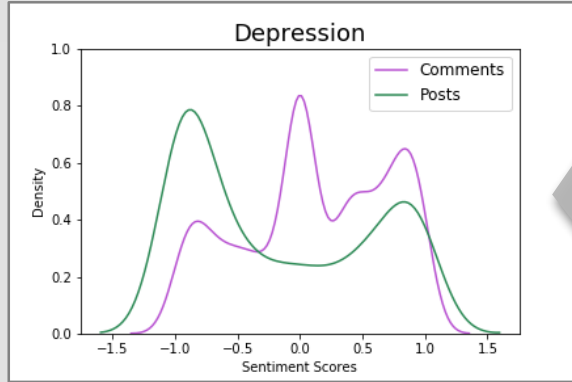
## Quantifying the Subreddits

---

# Sentiment Analysis



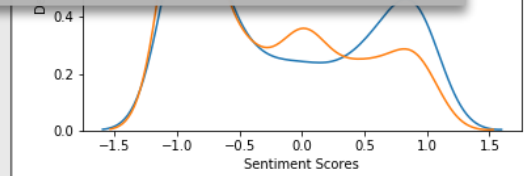
# Sentiment Analysis



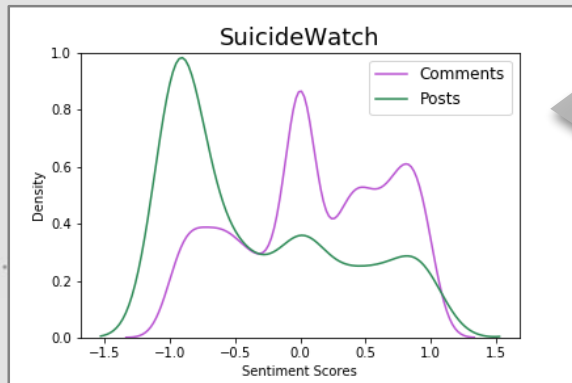
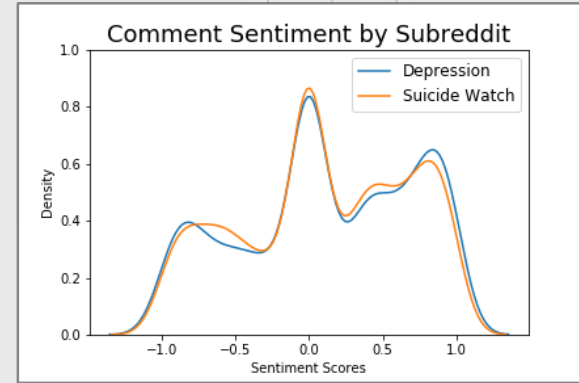
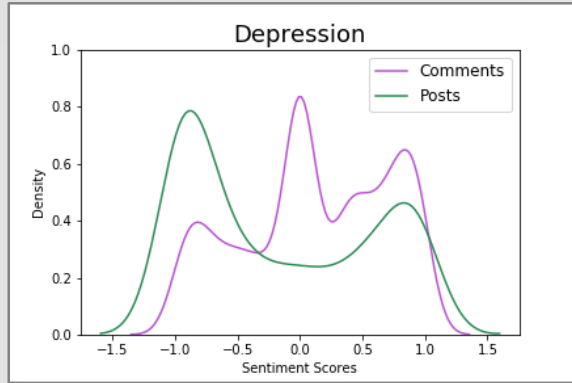
r/Depression posts are usually either very negative or very positive, though most posts are negative.

The comments are much more positive than the posts, which indicates that commenters tend to foster more positive environments.

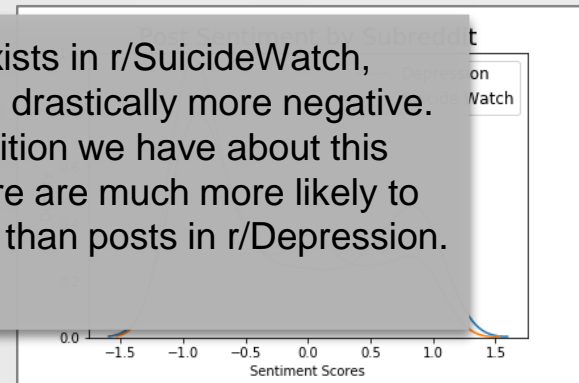
Additionally, some comments are very negative. This is not necessarily a bad thing; many of these negative comments could be validating the original poster's feelings.



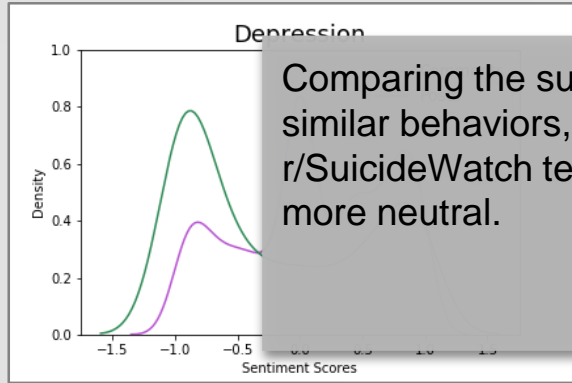
# Sentiment Analysis



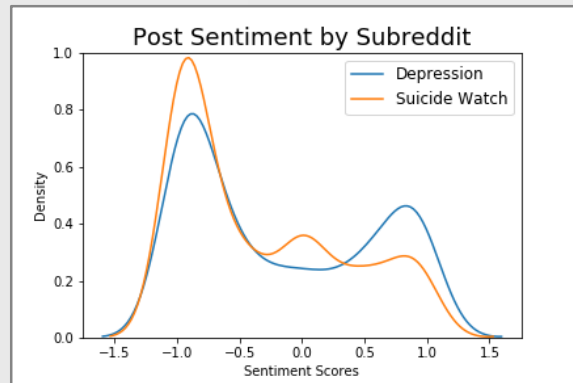
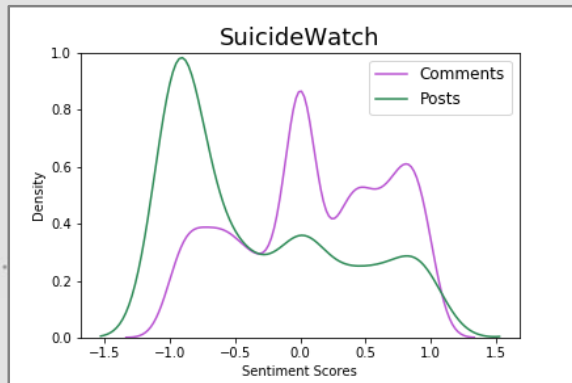
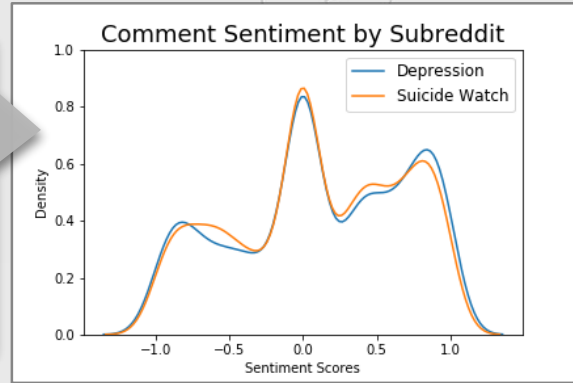
A similar dynamic exists in r/SuicideWatch, though the posts are drastically more negative. This fits with the intuition we have about this subreddit. Posts here are much more likely to be strongly negative than posts in r/Depression.



# Sentiment Analysis

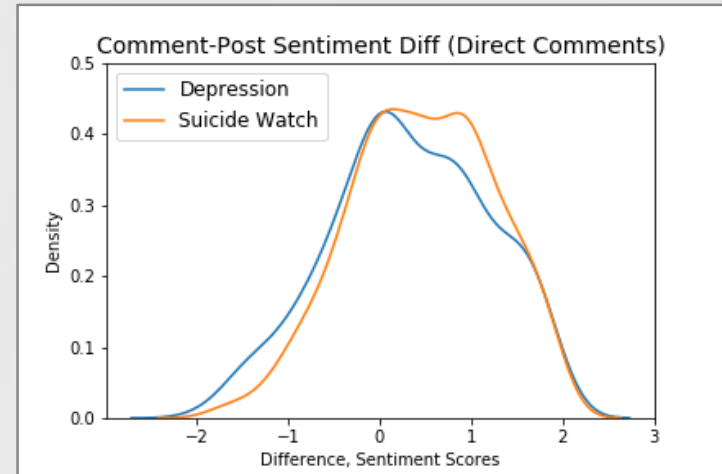
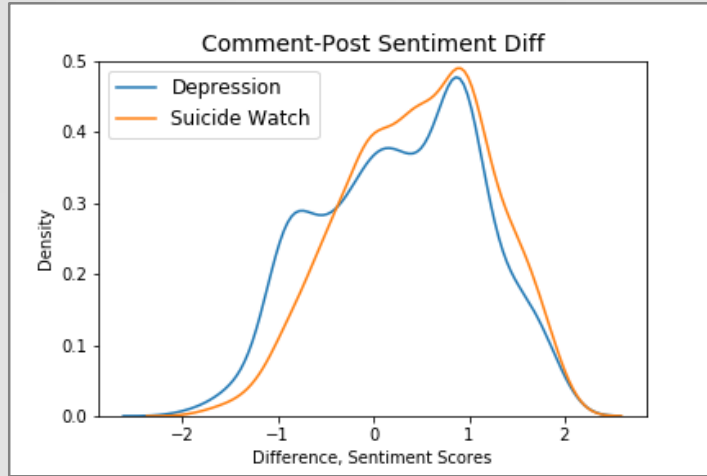


Comparing the subreddits, we see very similar behaviors, though comments in r/SuicideWatch tend to be somewhat more neutral.

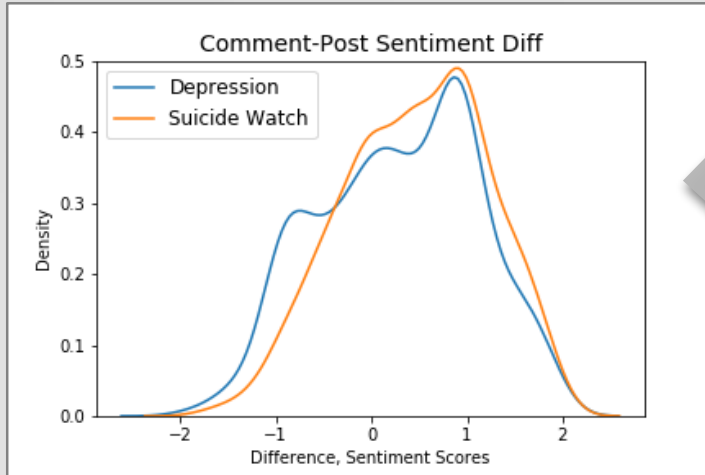




# Sentiment Analysis – Posters and Commenters

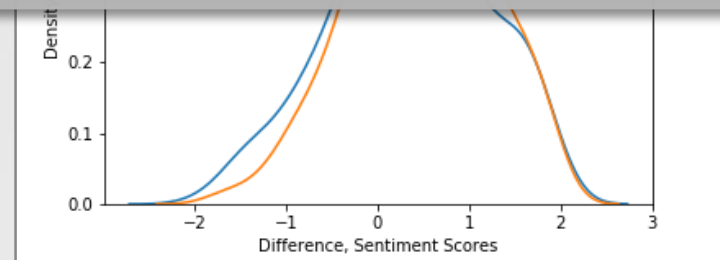


# Sentiment Analysis – Posters and Commenters

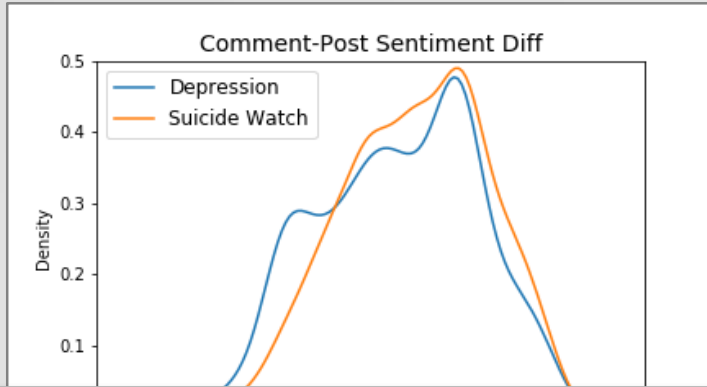


This density plot shows the distribution of the difference between the median comment sentiment and the post sentiment. (A positive value means the median comment sentiment was more positive than the post.)

In general, in both subreddits, the average comment has a higher sentiment score than the post that comment responded to.

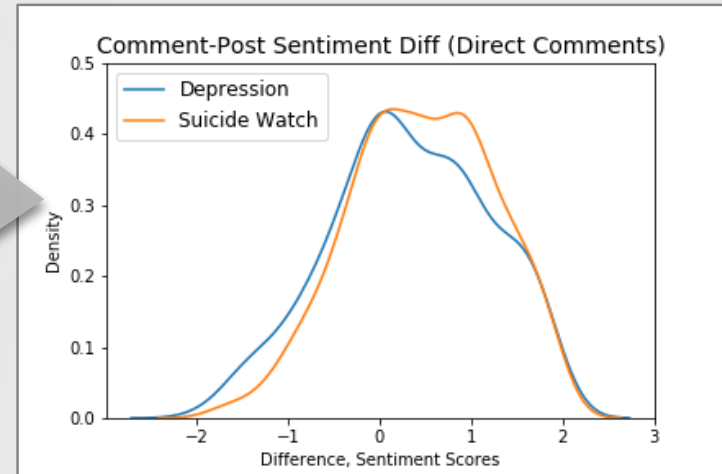


# Sentiment Analysis – Posters and Commenters

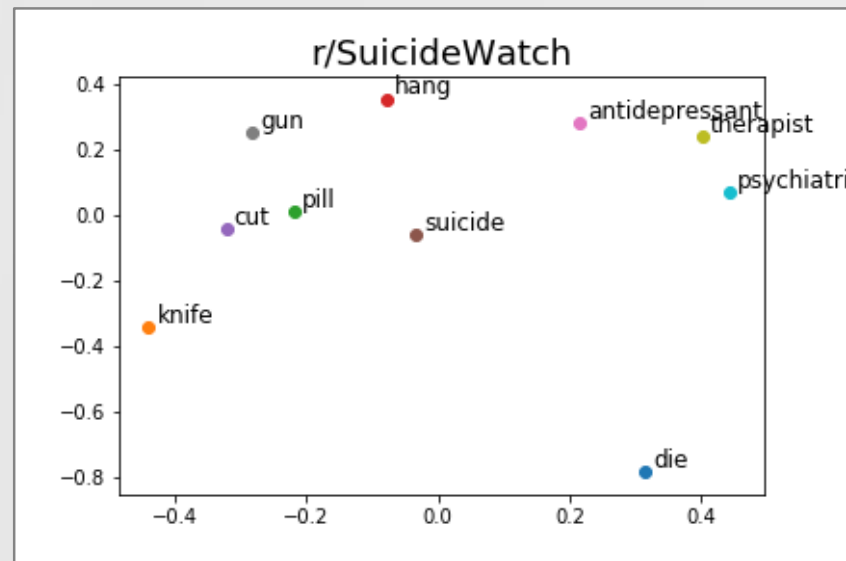
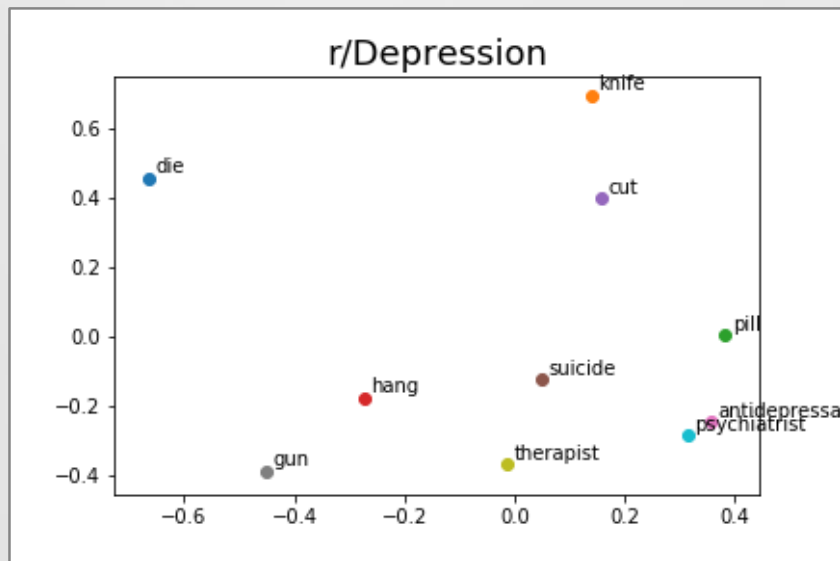


This plot excludes comments that were not direct responses to the original post.

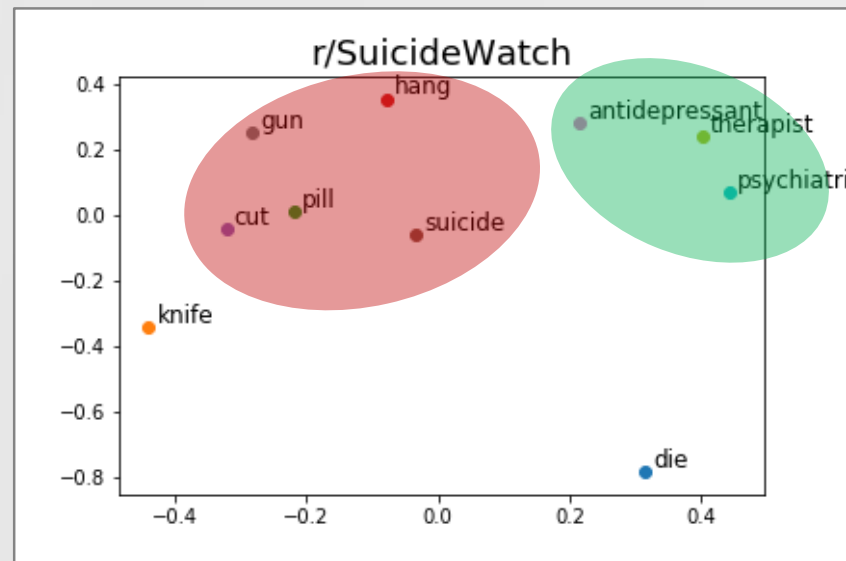
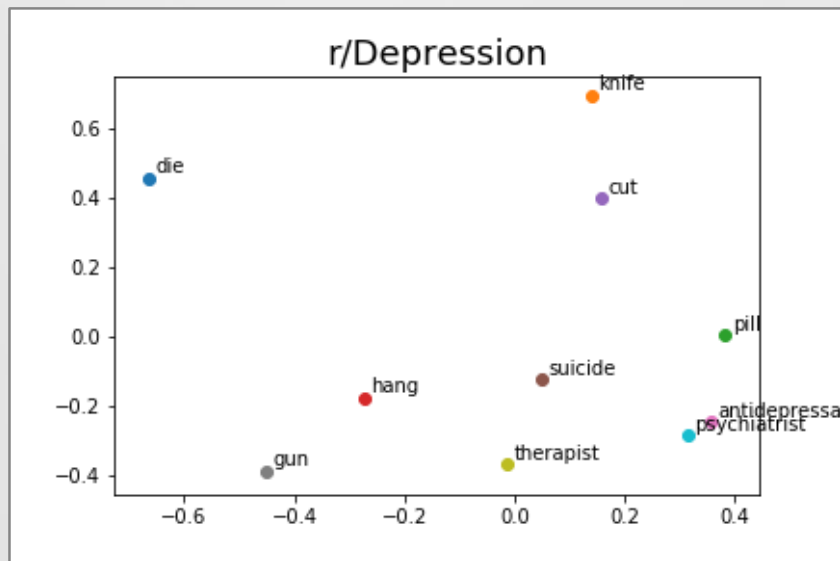
There is a greater difference in sentiments in this plot than in the plot on the left, which means that direct responders are much more likely to respond in very positive and constructive ways.



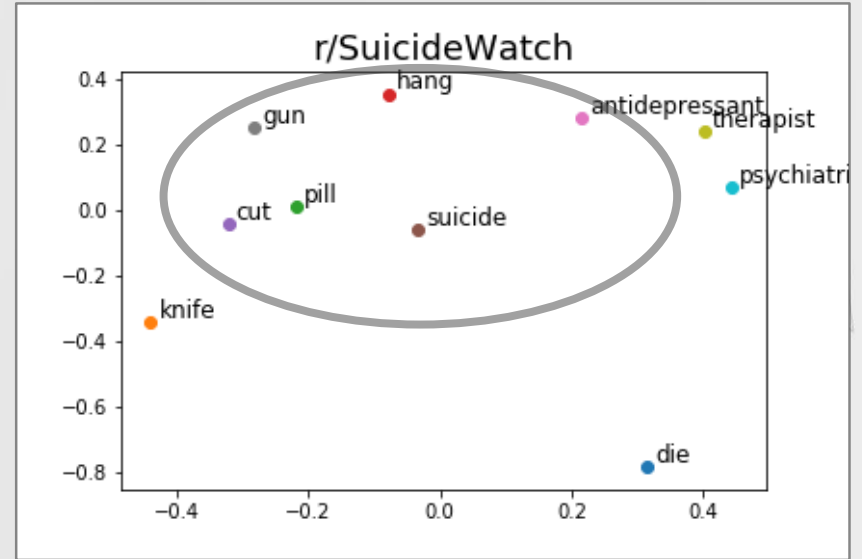
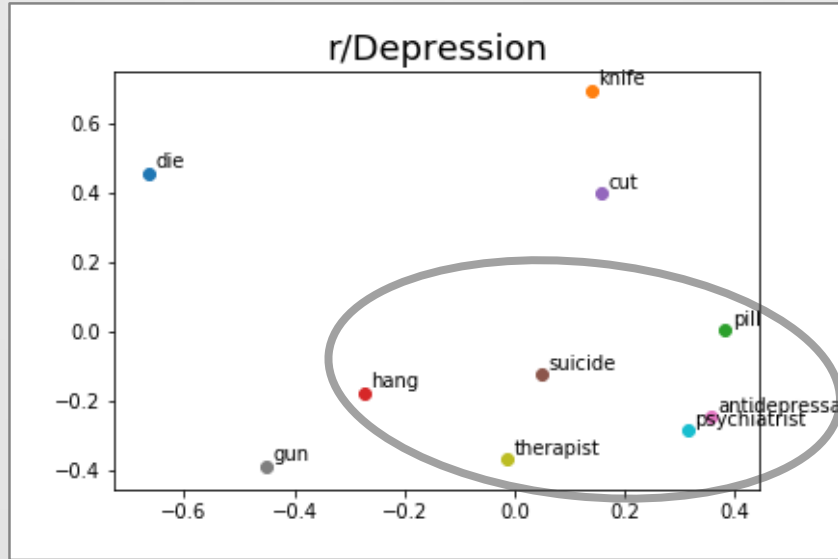
# Identifying Commenting Strategies



# Identifying Commenting Strategies



# Identifying Commenting Strategies



# 05

## Classifying Threads

---



# Classifying Threads

---

## Logistic Regression

**Accuracy: 70.1%**

**False Pos Rate: 33%**

**False Neg Rate: 23%**

## Gradient Boosting

**Accuracy: 64%**

**False Pos Rate: 29%**

**False Neg Rate: 52%**

## Feature Importance

**Median Direct Reply Time**

**Min Reply Time**

**Post Sentiment Score**

**Median Comment Length**

**Frequency of Suicide-related Words**

**Frequency of Goal-oriented Words**





# 06

## Conclusions

# What we can conclude about these subreddits

1. There is evidence that commenters generally create more positive environments for posters
2. Commenters on r/SuicideWatch tend to either discuss medical intervention solutions or express their urges regarding suicide
3. There is evidence that a distinguishing factor between r/Depression and r/SuicideWatch commenters is ideation of suicide
4. The communities are most different in post sentiment scores and time to comment on a post