

**“Change My  
View!”**

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# Introduction to Problem

- Change My View (located at [reddit.com/r/changemyview](https://reddit.com/r/changemyview)) is an internet forum where users can post their opinions, and other users can comment with rebuttals or opposing viewpoints to try to change their minds.
- If a reply successfully changes someone's view, then they can award “deltas” to that comment to indicate this.
- We built multiple classifiers to predict which comments would receive “deltas” using a variety of features about the text of the posts and their context in the comment tree, and compared these classifiers on several different metrics.

CMV: Terminally ill patients who are sound of mind should always be able to opt for physician assisted suicide.

With the exception of a few states like Oregon and Washington, physician assisted suicide is illegal. I believe this is morally wrong and infringes on the patient's fundamental human rights.

The Supreme Court has disagreed with me more than once (most recently in 1997), saying that physician assisted suicide is not a protected liberty under the constitution. Of course this didn't change my view, I firmly believe they made a morally wrong decision. Every person should have the right to decide when to end their life, especially in the case of a terminal illness.

Near their death many terminally ill patients suffer through intense pain and discomfort. No amount of painkillers can make them feel normal again. Many times the only relief from this pain will come with death. Denying our sick and elderly a humane way to end their suffering is immoral and unnecessarily cruel.

Again, as many life-ending illnesses take their final forms, a large portion of these patients will begin to lose control of their bodily functions, deteriorate both physically and mentally, or even completely lose their sense of self. If a patient doesn't want to be beaten by disease and wishes to go out on their own terms to preserve their dignity, why should the government be allowed to deny them that opportunity? I firmly believe it is unjust to deny terminally ill patients the opportunity to go out on their own terms.

I wasn't really agreeing with you, I was pointing out that your argument extended to a lot more people than you were saying.

I will say that you seem to be a little cavalier in assuming that a person who wants to kill themselves is of sound mind. In the law and by common sense, a suicidal person is at least presumptively, if not definitively, mentally ill, inasmuch as a mental state is causing them to want to harm themselves.

Especially in the case of people who aren't likely to die very soon, it seems like I would have a pretty strong presumption that they are not of sound mind if they say they want to kill themselves.

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Ahh i see your point. Making it a fundamental human right would open up the option for everyone, not just the terminally ill. You changed my view on the supreme court rulings Δ in tandem with my belief that the majority of people should have access to physician assisted suicide Δ. Thank you.

I do, however, still believe that the terminally ill should have access to physician assisted suicide regardless of whether or not it is protected as a human right.

Confirmed: 1 delta awarded to [/u/huadpe](#). [\[History\]](#)  
[\[Wiki\]](#)[\[Code\]](#)[\[r/DeltaBot\]](#)

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# Procedure

- We wrote our own scraper to collect a corpus of about 500 threads from /r/changemyview, spanning about 200000 individual user comments
- We tested various models, such as maximum entropy, a neural net, and ensemble
- Our baseline was a maxent classifier with two features:
  - Length of the comment's text
  - Depth of the comment in the comment tree
- The model that performed the best was also a maxent classifier

# High-performing Features

- Determined via a chi-squared test for correlation with tags
  - All features are normalized to be between 0 and 1
  - Top 5 features, best first:
    - Length of the text (included in baseline)
    - Number of times the comment quotes another comment
    - The parity of the depth
    - Whether the comment includes one of the words 'source', 'sources', 'study', 'studies', 'paper', 'papers'
    - How many times the author has been awarded a delta previously

# Evaluation Techniques Used

- Attempt to classify every single comment
  - This turned out to be the harder task by far
  - Number of non-delta comments is much greater than number of delta comments, so even a low false negative rate causes precision to be poor
  - Other complications included sarcastically awarded deltas and thread-starter bias
  - Numerical score is F1 score
- Given a collection of N comments, of which one has been awarded a delta, identify which one it is
  - We used  $N=10$  for this project
  - Informal survey suggested humans were also better at this task than at the other one
  - Numerical score is rate of correct identifications

# Results

## Tag-all-comments metric

- Baseline:
  - F1 score = 0.118467
- Our model:
  - F1 score = 0.147651

## 1-in-10 metric

- Baseline:
  - 0.320 rate of correct identifications
- Our model:
  - 0.387 rate of correct identifications

# Conclusions

- This problem is challenging in general for both humans and machines
  - Deltas are often awarded somewhat subjectively or whimsically
    - We made an informal survey in which we asked friends to pick out the comment that received a delta; in general, humans performed better but still had trouble
  - It's very difficult to quantify how much a comment “addresses the issue” without named-entity recognition and fact-checking
- Despite this, it's possible to do at least 30% better than baseline by extracting features from both the comment itself and structural data from the entire comment tree