

Winning Arguments: Interaction Dynamics and Persuasion Strategies in Good-faith Online Discussions

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ARE YOU COMING TO BED?

I CAN'T. THIS IS IMPORTANT.

WHAT?

Grader #2 must be stopped



We are always trying to change someone else's opinion



**It is difficult to
change someone
else's mind**

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YOU CAN NEVER CHANGE A
MAN'S MIND BY ARGUMENT.



ONLY BY BEER.

Original opinion ↔ Argument

- Certainty of the holder [Pomerantz et al. 1995, Tormala and Petty 2002]
- Importance of the belief [Petty et al. 1997, Zuwerink and Devine 1996]
- Properties such as intensity, valence, framing [Althoff et al. 2014, Bailey et al. 2014, Bryan et al. 2013, etc]
- Social aspects such as authority [Chaiken 1987, Cialdini et al. 1999, etc]

What can data science offer?



/r/changemyview


CMV: the Tontine should be legalized and made a common retirement strategy.

[Reference URL omitted] Basically, today we have a huge problem with retirement [...+73 words]
A tontine for retirement looks like [...+56 words] The yearly sum is divided evenly for all the surviving participants [...+25 words].
The key advantages as I see it are:
*We don't need actuaries [...+29 words...]
*Management fees can be quite low [...+22 words]
* [Another reason]
* [Another reason]
But CMV. Are there major risks I am not forseeing? [+2 more questions]

A tontine is a pretty crappy retirement vehicle for most people. It pays out the least when you need the most, and the most when you need the least.

People's income needs in retirement generally fall as they age. [...+35 words]
[\[URL\]](#)



Very interesting. I'll give a  because I didn't have any idea that was true and changes my idea of how the tontine should work. That said, I don't think it's unsolvable [...+44 words]

The Social Security system is basically one giant Tontine [...+17 words]

10 more comments

CMV: I think I would be better off without a smartphone.

white_crust_delivery

I'm starting to think that it does more harm than good. Here are my reasons:

1. I MtDewCodeRed

ce that had no internet I was pretty excited for a while. I assumed that being forcibly cut off from the internet would mean I would have to spend my time much more productively.

2. I I didnt, I just found new ways to waste it. Naps in the afternoon, TV

You don't want less stimulation, you want a *better quality of stimu* need something else to replace the habit. When I'm caught up in

3. It white_crust_delivery

I agree. The problem is that I'm having trouble replacing it whe

permalink save parent report give gold reply

Typogre

ours ago
one I'll reply to you here:

Paul Miller from the Verge actually spent a year completely for that matter), I just thought you might find it an interesting [after-a-year-without-the-internet](#) (this is his post after the of

permalink save parent report give gold reply

white_crust_delivery

Thank you for this. Reading this article was what fully sold me on the idea that the basic principles of my behavior wouldn't change in a lasting way just by getting rid of my smartphone unless I found a way to change my habits in a fundamental way (which can be done with or without owning a smartphone).

permalink save parent report give gold reply

[-] DeltaBot

Commented. Delta awarded to /u/Typogre. [History]
[Wiki][Code][tr/DeltaBot]

permalink save parent report give gold reply

load more comments (1 reply)

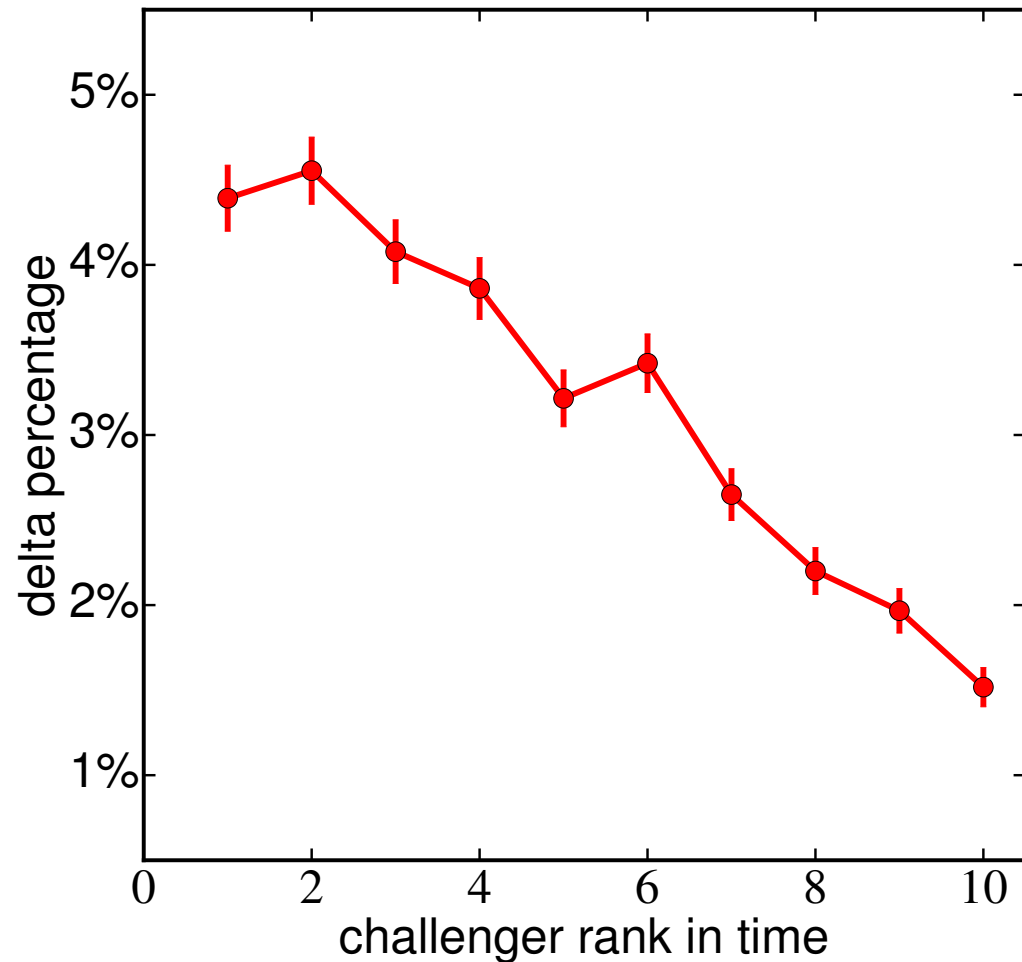
This is an ideal situation, where it is relatively easier to change someone's mind

Original opinion  **Argument**

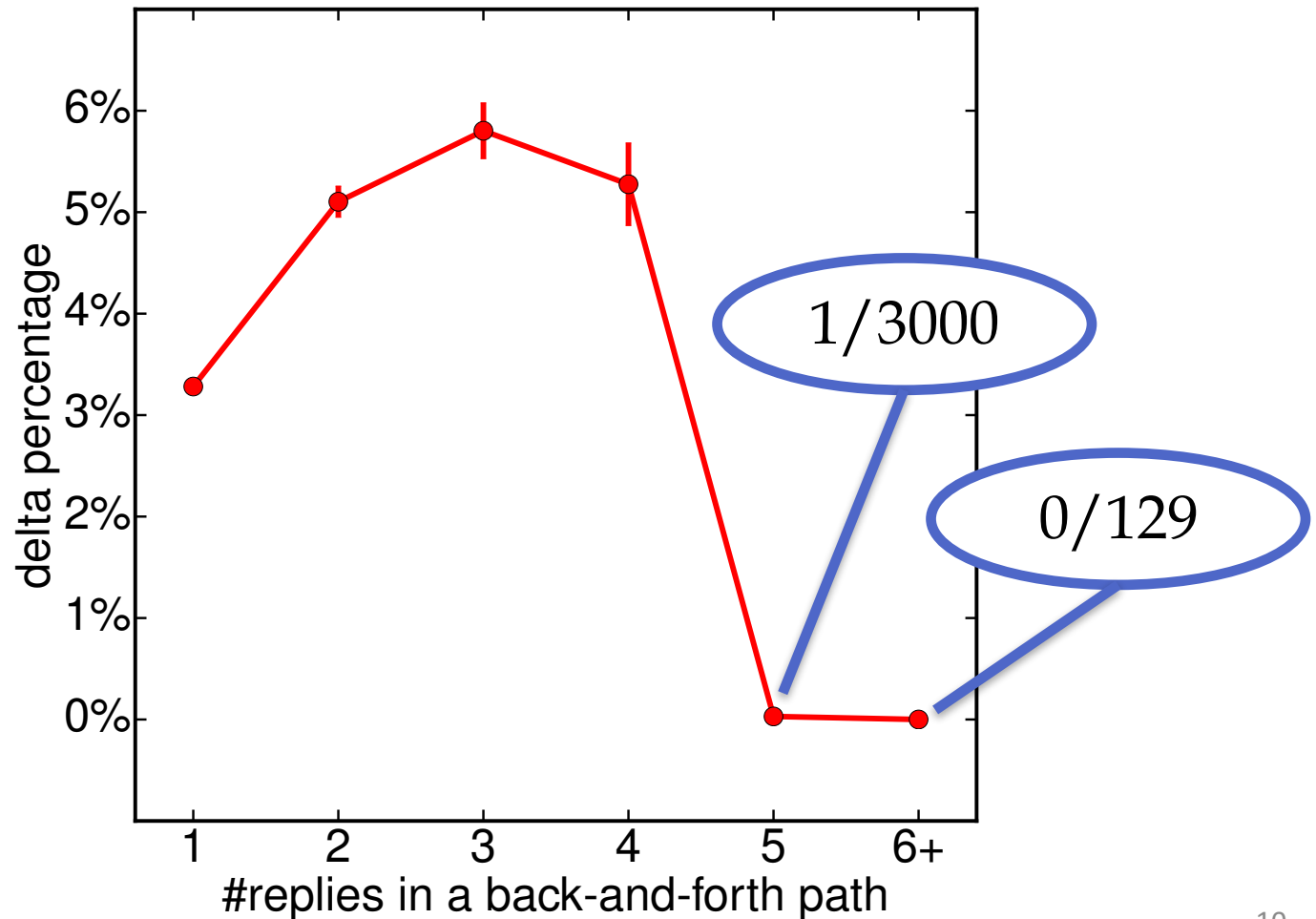
But first: interaction dynamics

- The entry time of the challenger
 - The number of back-and-forth exchanges
 - The number of challengers
- and possibly more ...

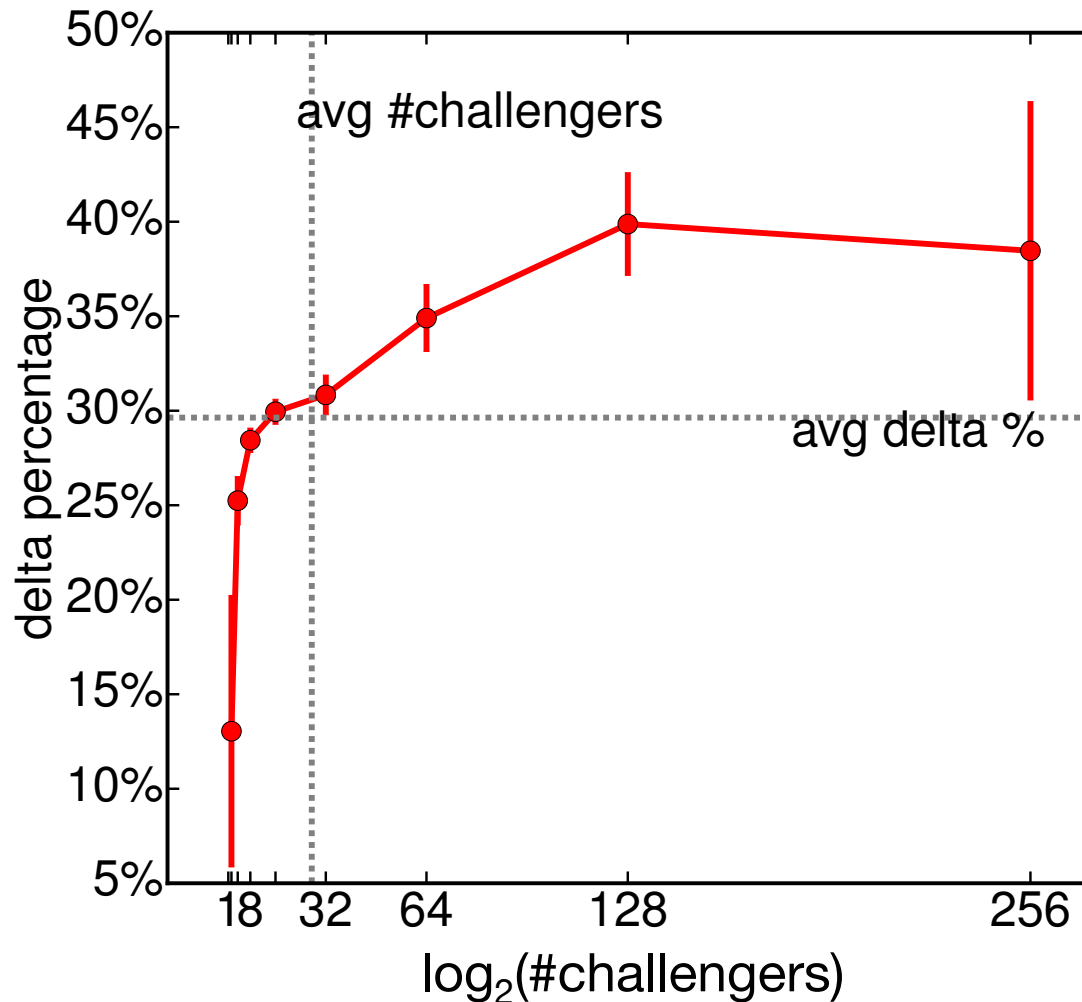
Success of a comment vs. the challenger's entry time

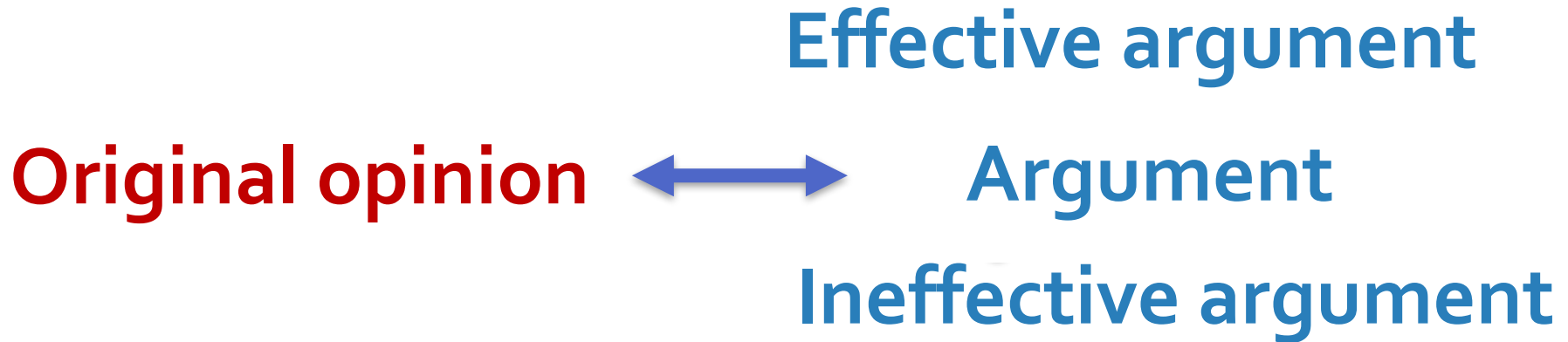


Success of a comment vs. the number of back-and-forth exchanges



Probability that opinion was changed vs. the number of challengers





Stylistic choices in arguments

- Variations of setup
 - Root reply
 - Full path
 - Truncated

Original opinion



Argument

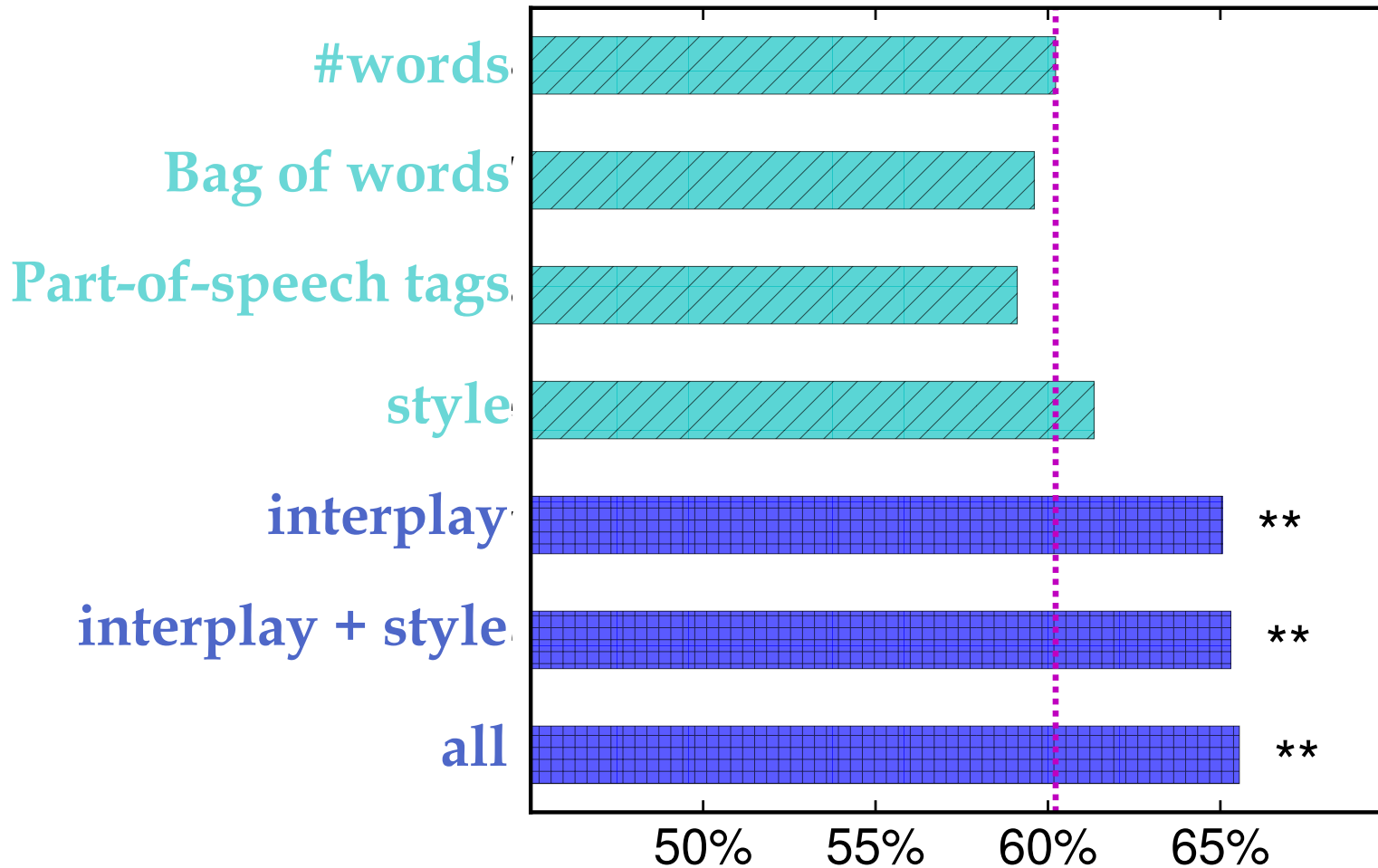
Interplay with original opinion:

- similarity in different vocabularies

Argument-only features:

- Stylistic features
- Bag-of-words
- Part-of-speech tags



Performance overview



Interplay with the original opinion

Original opinion ↔ **Argument**

similarity in different
vocabularies






	Effective?
Jaccard similarity in content words	 (p < 0.0001)
Jaccard similarity in stopwords	 (p < 0.0001)

There is some complexity regarding length, talk to me offline or see the paper.





Argument-only: stylistic features

- Word category-based features (first person pronouns, positive, negative, etc)
- Word score-based features (arousal, concreteness, dominance, valence) [Warriner et al. 2013]
- Characteristics of the entire argument (#sentences, #paragraphs, type token ratio, etc)
- Formatting (Markdown related, e.g., bold, italic, etc)

Word category-based features

	Effective?
#definite articles	 (p < 0.0001)
fraction of definite articles	 (p < 0.05)
#positive words	 (p < 0.0001)
fraction of positive words	 (p < 0.05)
#quotations	

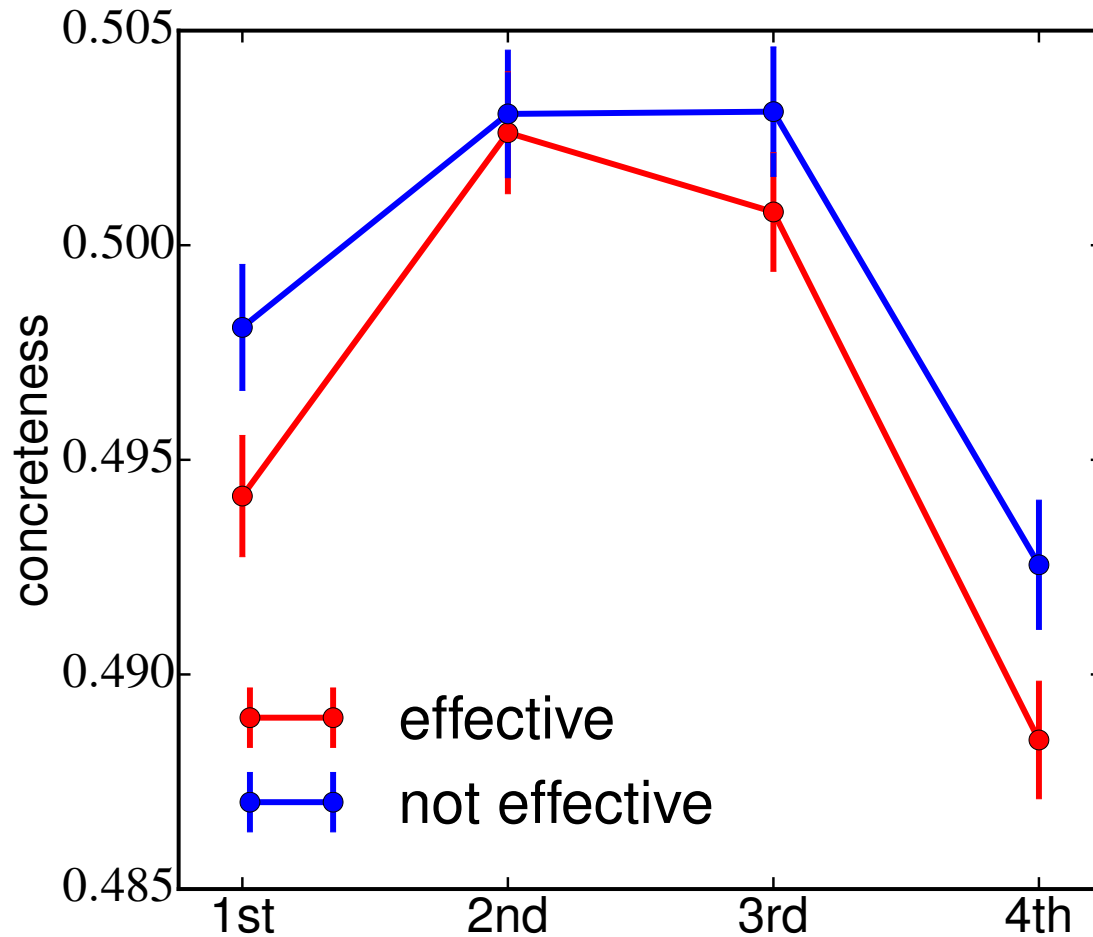
Word score-based features

	Effective?
arousal (dull vs. terrorism)	 (p < 0.05)
concreteness (hamburger vs. justice)	
dominance (dementia vs. completion)	
valence (murder vs. sunshine)	 (p < 0.05)

[Warriner et al. 2013]

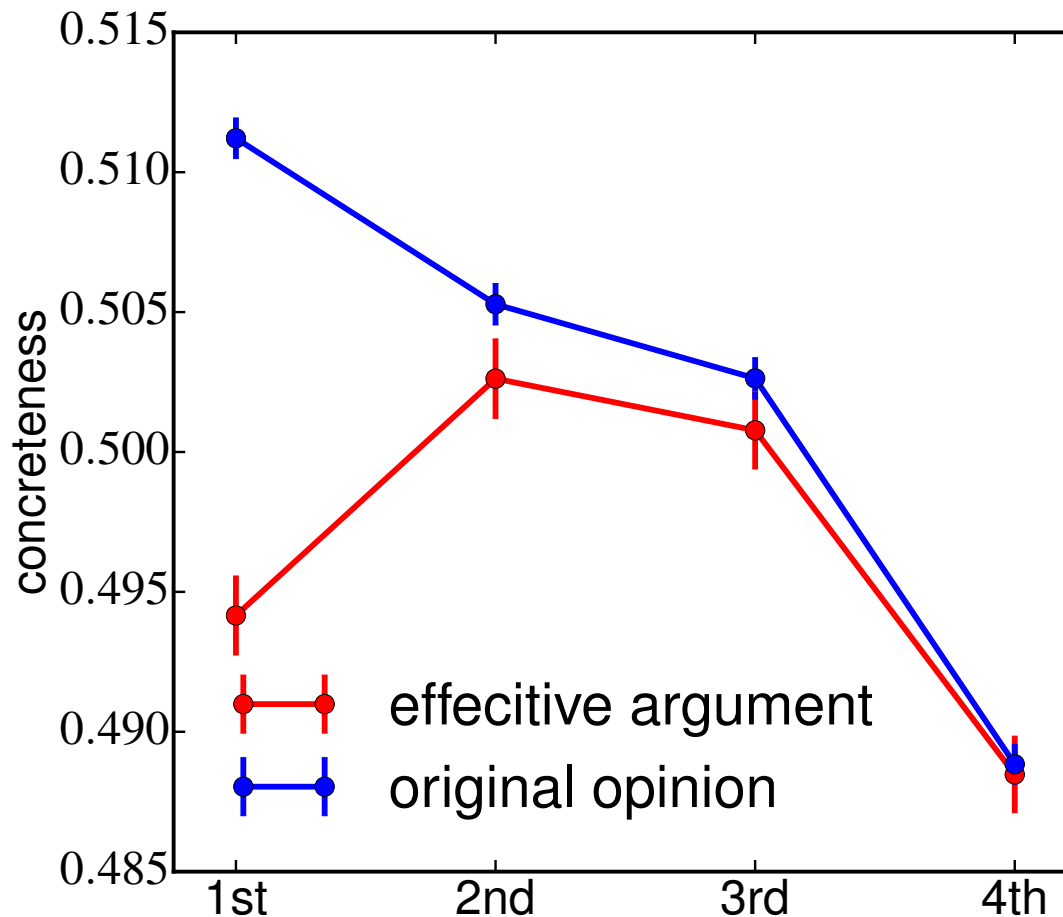
Structure of an argument

concreteness (hamburger vs. justice)



Structural differences between original opinions and arguments

concreteness (hamburger vs. justice)



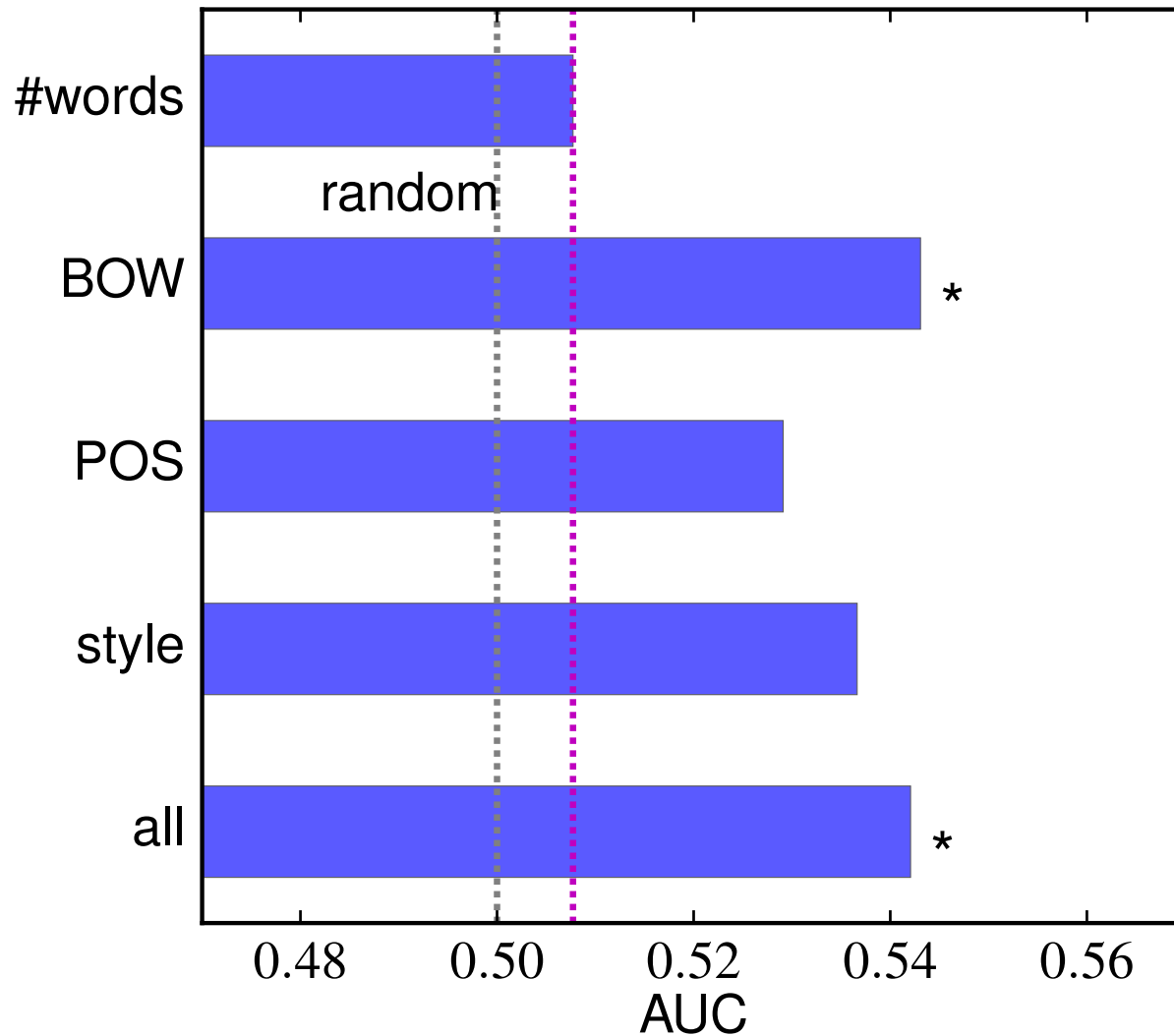
Malleability of the original opinion

Original opinion ↔ **Argument**

Original opinion features:

- Stylistic features
- Bag-of-words
- Part-of-speech tags



A much harder task



First person singular pronoun vs. first person plural pronoun

I think that there should not be speed limit

We think that there should not be speed limit

	Malleable?
First person singular pronoun	 (p < 0.0001)
First person plural pronoun	 (p < 0.01)

Other things that we have thought about/tried but not reported in the paper

- Experience level of challengers
- Topics of original opinions and arguments from topic models
- Word embedding based approach
- Structure of arguments based on conjunction words

Interaction
dynamics

Stylistic choices
in arguments

Malleability
of opinions

I hope that I have changed your
view and convinced you that

**/r/changemyview is an
interesting dataset to look into
the problem of persuasion!**

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Data available at

<https://chenhaot.com/pages/changemyview.html>