Author or Argumentation: Exploring the Effect of Prior Beliefs And Personality Traits On Persuasiveness

Nikolay Kolyada
Outline

• Background / Motivation
• Research Questions
• Dataset
• Modelling Authors
  • Modelling Interests
  • Modelling Beliefs
  • Modelling Personality traits
• Evaluation
• Conclusion
Persuasion

Motivation
Advertising, Marketing

Motivation

Online forums

Motivation

Research Questions

- How to represent person's interests, beliefs, and personality traits?
- How to model the author similarity?
- How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?
Reddit

Constructing Dataset
CMV: Cars should be equipped with both angry and apologetic horns

Short of waving my hand vaguely out the window, or holding it appreciatively under my mirror to signify thanks, there’s no way to communicate apology or gratitude on the road. I think that since people can only effectively communicate unhappiness, this contributes to road rage.

If someone cuts me off, it certainly would help at least a little bit if I got an apologetic beep in response to my angry WTF beep.

I don’t think noise pollution will be much worse. In fact, if I’m startled at home by an angry horn at a stop sign for someone not going, my stress will be lowered if I hear that belated apology horn. It’s like seeing a conflict avoided.

I understand the utility of this will be limited once self-driving cars get out there.

What are your thoughts? Log in or Sign up

Sort by: Q&A (SUGGESTED)

Dewa11aw 66.3k

OP has awarded 4 delta(s) in this post.

All comments that earned deltas (from OP or other users) are listed here. In r/Delta.log.

Please note that a change of view doesn’t necessarily mean a reversal, or that the conversation has ended.

Dewa11aw 66.3k

I see your point, and I had the same thought before, but I think the overall utility of the extra horn wouldn’t be worth all the extra noise. We shouldn’t really be encouraging drivers to “communicate” with their horns beyond what it takes to alert an accident.

Share Report Save

myhornstory 215 points

my honest take on my witnessed horn usage is that perhaps 1 out of every 10 or 12 uses is in order to prevent an accident: someone merging into an occupied lane, or someone backing out of a driveway into oncoming traffic. the rest are “move your ass” or “you just cut me off” – the latter of which is not accident prevention, since the person has typically already taken preventative measures. in instances where I have to slam on the brakes, I certainly am not thinking about using the horn, I’m thinking about not getting in a wreck.
ChangeMyView
ChangeMyView

USERS 174k

DISCUSSIONS 60k

Constructing Dataset
Original Post

Title: Cars should be equipped with both angry and apologetic horns

Reply #1

... 
A standard and widely used method of conveying thanks and apology already exists: blinking your hazards a few times.
... 
Ah, really? Didn't know that! △

Reply #2

... 
You jump a big step here, because you don't explain why the traditional light wave/hand under mirror gesture isn't effective. I see it pretty much every time.
...
Pairs Dataset
Constructing Dataset
## Pairs dataset

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<th>OP</th>
<th>subreddit_id</th>
<th>author</th>
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### Constructing Dataset
Pairs dataset

TIMESPAN
01.2013 - 09.2017

8025 PERSUASIVE PAIRS

8025 NON-PERSUASIVE PAIRS

Constructing Dataset
Argumentation features

- **Linguistic features**
  - BOW, articles, pronouns, links, positive/negative words, question marks, quotations

- **Interplay features**
Argumentation features

- Linguistic features
- Interplay features
Modelling Author Interests
Modelling Interests

Modelling Author Interests
Modelling Interests

Discussion  Hobbies  News and Politics  Entertainment  Science

r/AskReddit  r/politics  r/whatisthisthething  r/personalfinance
r/technology  r/news  r/StrangerThings  r/changemyview
r/todayilearned  r/space  r/science  r/soccer
Modelling Interests

POST FREQUENCIES
TF-IDF
PCA
Modelling Author Beliefs
Modelling Author Beliefs
<table>
<thead>
<tr>
<th>category</th>
<th>tag</th>
<th>post text</th>
<th>context sentiment</th>
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<tbody>
<tr>
<td>News And Politics -&gt; Republican</td>
<td>Hillary Clinton</td>
<td>... Besides, Hillary Clinton also has some weaknesses. ...</td>
<td>-0.362</td>
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Modelling Author Beliefs
Modelling Author Beliefs

- Discussion
- Hobbies
- News and Politics
- Entertainment
- Science

- r/AskReddit
- r/politics
- r/whatisthisthing
- r/personalfinance
- r/technology
- r/news
- r/StrangerThings
- r/changemyview
- r/todayilearned
- r/space
- r/science
- r/soccer
Modelling Author Beliefs

- Donald Trump: -0.6
- Hillary Clinton: -0.2
- BREXIT: 0.6
- Second Amendment: 0.2

MEDIAN SENTIMENT SCORE WITHIN TOPICS
Modelling Personality Traits
Big Five

Modelling Personality Traits

PERSONALITY

Openness
Neuroticism
Conscientiousness
Agreeableness
Extraversion

OCEAN, CANOE
Modelling Personality Traits
## Modelling Personality Traits

<table>
<thead>
<tr>
<th>BIG FIVE</th>
<th>neuroticism</th>
<th>extraversion</th>
<th>openness</th>
<th>agreeableness</th>
<th>conscientiousness</th>
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<tr>
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<td>other, drinks, restaurant, dancing, cats, grandfather, countless, shots, computer, glorious</td>
<td>folk, humans, poet, art, universe, narrative, giveaway, century, sexual, films</td>
<td>wonderful, together, visiting, morning, spring, walked, beautiful, staying, felt, cost</td>
<td>completed, adventure, stupid, boring, adventures, desperate, enjoying, saying, utter, extreme</td>
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Modelling Personality Traits

**BIG FIVE**

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**Word Categories**

<table>
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Author Similarity
Author Similarity

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<th>HOBBIES</th>
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<td>12 91 ... 32 0</td>
<td>12 91 ... 32 0</td>
<td>12 91 ... 32 0</td>
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</table>

ORIGINAL POST

PERSUASIVE COMMENT
Author Similarity

POLITICS

12
91
...
32
0

POLITICS

12
91
...
32
0

POLITICS

-0.6
-0.2
...
0.6
0.2
Author Similarity

$\text{cosine( "haudpe", "TheWildThing" )}$
Features overview

Feature groups:

- interests
- beliefs
- personality traits
- argumentation features
○ How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?
Predicting the Persuasive Argument

Opinion Malleability Prediction
Predicting the Persuasive Argument

Evaluation
Predicting the Persuasive Argument

Evaluation
How easy is to persuade OP?
Opinion Malleability
Opinion Malleability

personality traits

BOW

ORIGINAL POST

RESISTANT OR MALLEABLE

Evaluation
Opinion Malleability

Evaluation

- Posts: 8,121
- Malleable: 3,186
- Unique Authors: 4,641
Opinion Malleability

![Bar chart showing AUC for BOW, traits, and all categories.](chart.png)
Opinion Malleability

![Bar chart showing the delta values for different personality traits: agreeableness, conscientiousness, extraversion, neuroticism, and openness. The chart indicates that agreeableness has the highest delta value, followed by openness, conscientiousness, neuroticism, and extraversion.]
Future work

• structure of arguments, quality of arguments
• correlation between author traits and argumentation used
• model the experience: deltas earned
• different discussion platforms
Summary

- Research questions
  - How to represent person's interests, beliefs, and personality traits?
  - How to model the author similarity?
  - How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?

- Pairs dataset

- Author features: Interests, Beliefs, Personality Traits

- Experiments: Prediction of persuasive argument, Opinion malleability

- Explore the impact of author similarity on persuasion