Annotating Inner- and Inter- Post Argumentation in Change My View

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Informal Workshop on Argumentation/Argument Mining
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1. Background
2. Related Work
3. Annotation Scheme
4. The Progress of annotation
5. Analysis of annotated corpus
Background

Online discussion forum and Argument Mining
Argument Mining is…
- to aim at extracting **arguments** and their **relations**
- applied to a variety of textual corpora

In online discussion forum
- Detecting “a premise behind a claim” is important for productive discussion

Argument Mining is effectively applied to the online discussion forum
Background

Online persuasive discussion forum

• Changing someone’s opinion is important challenges of social interaction

How someone’s opinions are formed, how views shifted

Ex) Change My View

Users try to change the OP’s View on CMV (opinion, an attitude, etc...)

Help from the community: Good examples of the Socratic Method

From time to time, CMV gets asked to help out with research papers, news articles or other publications due to the unique and incredible community we have created. We are nearly always happy to participate, as we think that the core concept behind CMV is something that should be leveraged in many different venues.

To that end, we’ve had someone reach out to us who is looking to demonstrate the Socratic Method in action. For those of you who aren’t familiar with it, the Socratic Method is the process by which an individual asks another specific questions about a topic or line of thinking, not to actually get answers but rather to get the person to think critically on a topic and help them reach conclusions on their own. It is a very powerful form of argument that has been utilized for at least the last 2,500 years.

How is what we'd like your help with. Do you have any examples of CMV posts where the

27 Comments  Share  Save  ...
Change My View

Change My View (CMV): Online persuasion forum

A place to present views and understanding other perspectives.

• The view with reasoning is needed for the submission
• 500+ characters are required
• The user should be open to a view changing
• The user win a Delta, when OP’s view is changed

Analysis of persuasiveness [Tan+] is useful for social. However, the argument perspective analysis is still infancy.
[Tan+] analysis of persuasiveness

Analyzing the characteristics of the persuasive arguments in CMV.

Interaction dynamics
The number of comments, users, perspectives.

Language indicators of persuasive arguments
Vocabulary types, Style features.

“Resistance” to persuasion
Style and how formatted.
In our work

We propose the annotation scheme on online persuasion forum to capture what makes online arguments persuasive.

• We classify each component into 5 types (described later)
• Considering inner-/inter- post relations

Our annotation can capture the characteristics of successful arguments in online persuasions,

• because we consider the interaction of post-to-post argument
Related Work

Annotation scheme and analysis on CMV
[Hidey+] Analyzing the semantic type of arguments


Considering the semantic type of Claims and Premises

Claim

- Interpretation, Evaluation, Agree or Disagreement

Premise

- Ethos, Pathos, Logos
Annotation Scheme

Annotate inner- and inter- post argumentation in CMV
Annotation Methodology

Dataset
- Change My View (reddit.com/r/changemyview).
- Root post: OP
- Successful comment: Positive
- Non successful comment: Negative

Annotation Methodology
- 3 annotators for each task are assigned and merged for creating a gold standard corpus.

Scheme
- Argumentative Components
- Inner-Post Relation
- Inter-Post Relation
Our **annotation scheme** is as follows:

**Inner-post argumentation**

- Token-level approach
  
  Because there is a case that some claims and premises in same sentence.

- High granularity
  
  We classify each argumentative component into **5 types** *(not only claim and premise!)* such as rhetoric, testimony, etc.

- Support/Attack relation

**Inter-post interaction**

- Post-to-post interaction
Annotation Scheme

STEP 1
- Annotate the **component boundary** and **type**
  (Fact/Testimony/Value/Policy/Rhetorical Statement)

                             merge

STEP 2
- Annotate the inner-post relation (**Support/Attack**)  

                             merge

STEP 3
- Annotate the inter-post relation (**Pro/Con**)  

                             merge

Gold Standard

Inner-post

Inter-post
Component Boundary and Type

STEP1

Annotate the **component boundary and type** (Fact/Testimony/
Value/Policy/Rhetorical Statement)

merge

STEP2

Annotate the inner-post relation (**Support/Attack**)

merge

STEP3

Annotate the inter-post relation (**Pro/Con**)

merge

Gold Standard

Inner-post

Inter-post
Component Boundary and Type

Annotating component boundary
• We introduce the token-level (≠ sentence-level)

I’ll focus on the Mondrian painting, since I consider him to be the most important artist of the 20th century.

Component type
• Five elementary units based on Park’s work [Park+].
[Park+] Five elementary units

Park et al. defined the five types of elementary units that are prevalent in online comments and two types of relations between the units.

- Elementary Units
  - Fact, Testimony, Value, Policy, Reference

- Support Relations
  - Reason, Evidence
Component Type definition

In this study, we define following 5 component types.

**Fact**
Objective proposition “expressing or dealing with facts or conditions”. Fact has a truth value that can be verified with objective evidence.

**Testimony**
Objective proposition about the author’s personal state or experience.

**Value**
Proposition containing value judgement without describing what should be done.

**Policy**
Proposition proposing a specific course of action to be taken.

**Rhetorical Statement**
Describing value judgement not directly, intended to be effective and influence people.
Component Boundary and Type

Annotation example:

5 Interestingly enough, they did exactly this in the U.K. about thirty or so years ago.

6 It all seems logical and practical and like it should work. Then they decided that legally, ownership was satisfied if you could own something at all.

7 So handguns were turned in in huge numbers and you were allowed to keep rifles and shotguns.

8 Then it was shotguns only.

9 Then you could only keep them if you had a proven use for them like on a farm or similar.

11 Thirty years later and the inventors of most of our modern arms and the people who helped us the most in WWII are completely castrated. Firearms are essentially gone and crime is out of control.

13 So what was the critical difference?

14 As was pointed out, it's that your argument pre-supposes that firearms are a priviledge and not a right.

15 You go into the creation of the list with a view that logically will lead you down this path. But let's get into each statement/idea.

16 Because some are good, and some are not.

17 And this isn't really abot how you set up the argument so much as the individual points.

19 1 - This sounds great.
I do not love my parents. CMV

I have caring parents. They supported me for a long time. But when I look at them objectively, they are average human beings. I am 25, and at this stage in my life, they add little value to my life. Why should I keep up with them just because they invested in me? The past is a sunk cost. This extends beyond just parents. Why should I blindly love any of my relatives? Some of them are bad people. If we all blindly love and support other people just because we're related, I feel it leads to a lot of irrational decisions. Please change my view.
Inner-post relation

STEP 1
Annotate the **component boundary** and **type** (Fact/Testimony/Value/Policy/Rhetorical Statement)

merge

STEP 2
Annotate the inner-post relation (**Support/Attack**)

merge

STEP 3
Annotate the inter-post relation (**Pro/Con**)

merge

Gold Standard

Inner-post

Inter-post
Inner-post relation

Extract relations between components, and construct Argument for each post / comments.

Inner-post relation is defined as follows.

**Support**
A component X has a **Support** relation for a component Y

**Attack**
A component X has a **Attack** relation for a component Y
I do not love my parents. CMV

I have caring parents. They supported me for a long time. But when I look at them objectively, they are average human beings. I am 25, and at this stage in my life, they add little value to my life. Why should I keep up with them just because they invested in me? The past is a sunk cost. This extends beyond just parents. Why should I blindly love any of my relatives? Some of them are bad people. If we all blindly love and support other people just because we're related, I feel it leads to a lot of irrational decisions. Please change my view.
I do not love my parents. CMV

Why should I keep up with them just because they invested in me?

when I look at them objectively, they are average human beings

They supported me for a long time

I am 25

they add little value to my life

Why should I blindly love any of my relatives?

The past is a sunk cost

This extends beyond just parents

If we all blindly love and support other people just because we're related, I feel it leads to a lot of irrational decisions

Some of them are bad people
Inter-post relation

**STEP 1**
Annotate the **component boundary** and type (Fact/Testimony/Value/Policy/Rhetorical Statement)

**STEP 2**
Annotate the inner-post relation (Support/Attack)

**STEP 3**
Annotate the inter-post relation (Pro/Con)

Gold Standard
Inter-post relation

Extract post-to-post interaction of OP-Pos/Neg.

Inner-post relation is defined as follows.

Pro
A component X in Pos/Neg has support relation for a component Y in OP

Con
A component X in Pos/Neg has attack relation for a component Y in OP
there may come a point, were your life will get fucked up
Maybe it's an accident, maybe something else. Maybe financial problems, or a psychosis, everything is possible.

Why should I keep up with them just because they invested in me?
when I look at them objectively, they are average human beings
They supported me for a long time

I do not love my parents. CMV

Why should I blindly love any of my relatives?

They add little value to my life

The past is a sunk cost
If we all blindly love and support other people just because we're related, I feel it leads to a lot of irrational decisions

This extends beyond just parents

Some of them are bad people

I am 25

If you are not able to love them for what they have already done for you, love them for what they might do
you will always can rely on them

You are simply the most important thing for them
You are what will stay from them when they die
They put up with all your shit in your childhood
You said they did care for you

Your parents will stay

this kind of bond is not strong enough

I was a healthy relationship between you and them

Maybe it's an accident, maybe something else. Maybe financial problems, or a psychosis, everything is possible.
Who will stay with you, support you, when they get nothing in return? Friends?
The Progress

Progress and plan of annotation
The Progress

Component Boundary and Type
• Just finished 30 threads annotation.
• 100 threads ~Jan, 2019

Inner-post relation
• 100 threads ~Feb, 2019

Inter-post relation
• 100 threads ~Feb, 2019
Analysis

Plan of future analysis of the annotated corpus
To capture what makes online arguments persuasive,

Positive vs Negative

- Vocabulary: tendency
- Component: type, position, size
- Inner-post relation: type, size, depth
- Inter-post relation: type, size, depth

OP vs Positive/Negative

- Component: type, position, size
- Inner-post relation: type, size, depth
At this time, we analyzed 30 annotated threads.
Analysis

We found from the figure that...

Compared to Negatives, OPs and Positives are more Value-based.
We found from the figure that…

Interestingly, rhetorical statements are not effective for successful argument
We found from the figure that…

Interestingly, testimonies and facts are not effective for successful arguments!
Conclusion

We propose the annotation scheme on online persuasion forum

• Our annotation scheme for component boundary and types
  ➢ classified into 5 types
    Fact, Testimony, Value, Policy, Rhetorical Statement

• Our annotation scheme considers inner-/inter- post relations
  ➢ extract relations between components(Support/Attack)

At this time, we partially get the characteristics of successful arguments in persuasion

• Positive vs Negative
• OP vs Positive/Negative
Thank you for listening.

any question?