

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

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Argumentation/Argument Mining
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Agenda

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

Background

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

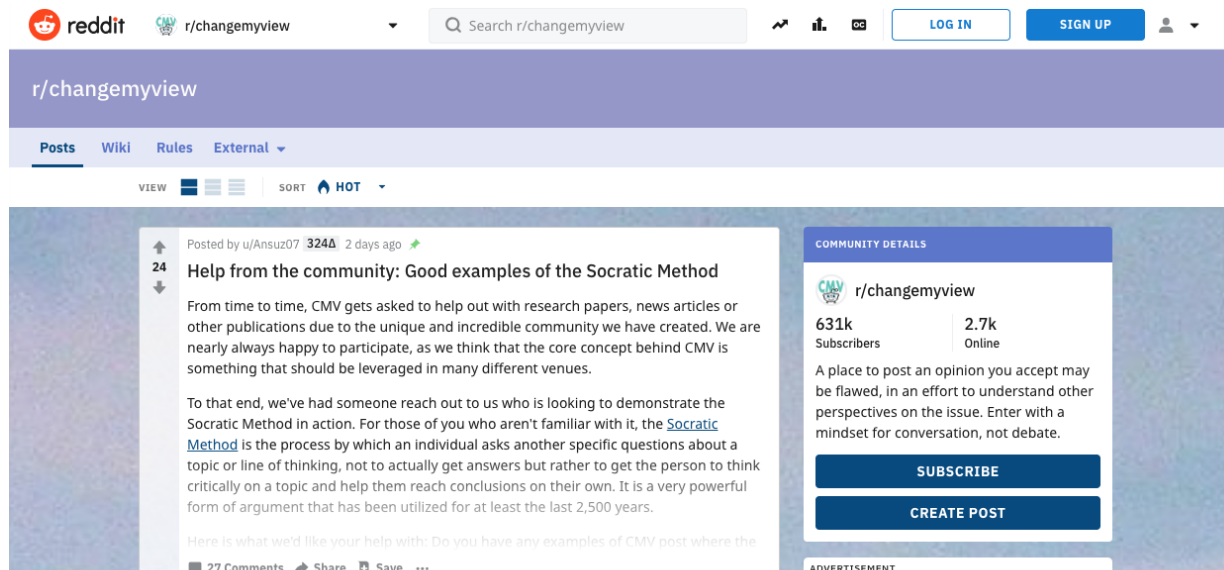
Online persuasive discussion forum

- 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...)



The screenshot shows the Reddit interface for the r/changemyview subreddit. At the top, there's a search bar and navigation buttons for 'LOG IN' and 'SIGN UP'. Below the subreddit name, there are tabs for 'Posts', 'Wiki', 'Rules', and 'External'. The main content area features a post by user u/Ansuz07, titled 'Help from the community: Good examples of the Socratic Method'. The post text discusses the Socratic Method and asks for examples. To the right, a 'COMMUNITY DETAILS' box shows 631k subscribers and 2.7k online users, along with a 'SUBSCRIBE' button and a 'CREATE POST' button. At the bottom, there's an 'ADVERTISEMENT' placeholder.

reddit r/changemyview Search r/changemyview LOG IN SIGN UP

r/changemyview

Posts Wiki Rules External

VIEW SORT HOT

Posted by u/Ansuz07 3244 2 days ago

24 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.

Here is what we'd like your help with: Do you have any examples of CMV post where the

27 Comments Share Save

COMMUNITY DETAILS

r/changemyview

631k Subscribers 2.7k Online

A place to post an opinion you accept may be flawed, in an effort to understand other perspectives on the issue. Enter with a mindset for conversation, not debate.

SUBSCRIBE

CREATE POST

ADVERTISEMENT

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

Chenhao Tan, Vlad Niculae, Cristian Danescu-Niculescu-Mizil, Lillian Lee. Winning Arguments: Interaction Dynamics and Persuasion Strategies in Good-faith Online Discussions. in Proceedings of WWW 2016.

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

Christopher Hidey, Elena Musi, Alyssa Hwang, Smaranda Muresan and Kathy McKeown. Analyzing the Semantic Types of Claims and Premises in an Online Persuasive Forum. Proceedings of the 4th Workshop on Argument Mining.

Considering the semantic type of Claims and Premises

Claim

- Interpretation, Evaluation, Agree or Disagreement

Premise

- Ethos, Pathos, Logos

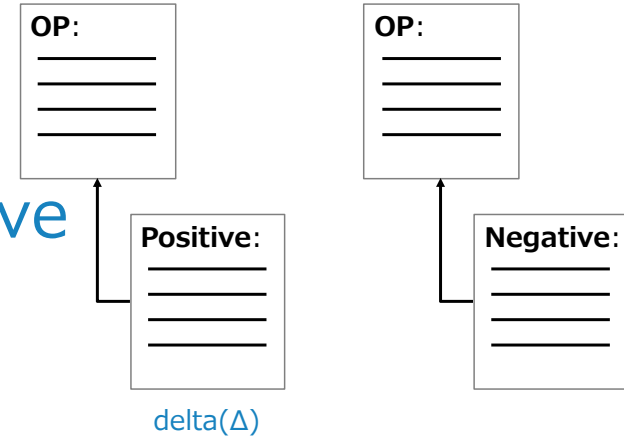
Annotation Scheme

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

Annotation Scheme

Our **annotation scheme** is as follows:

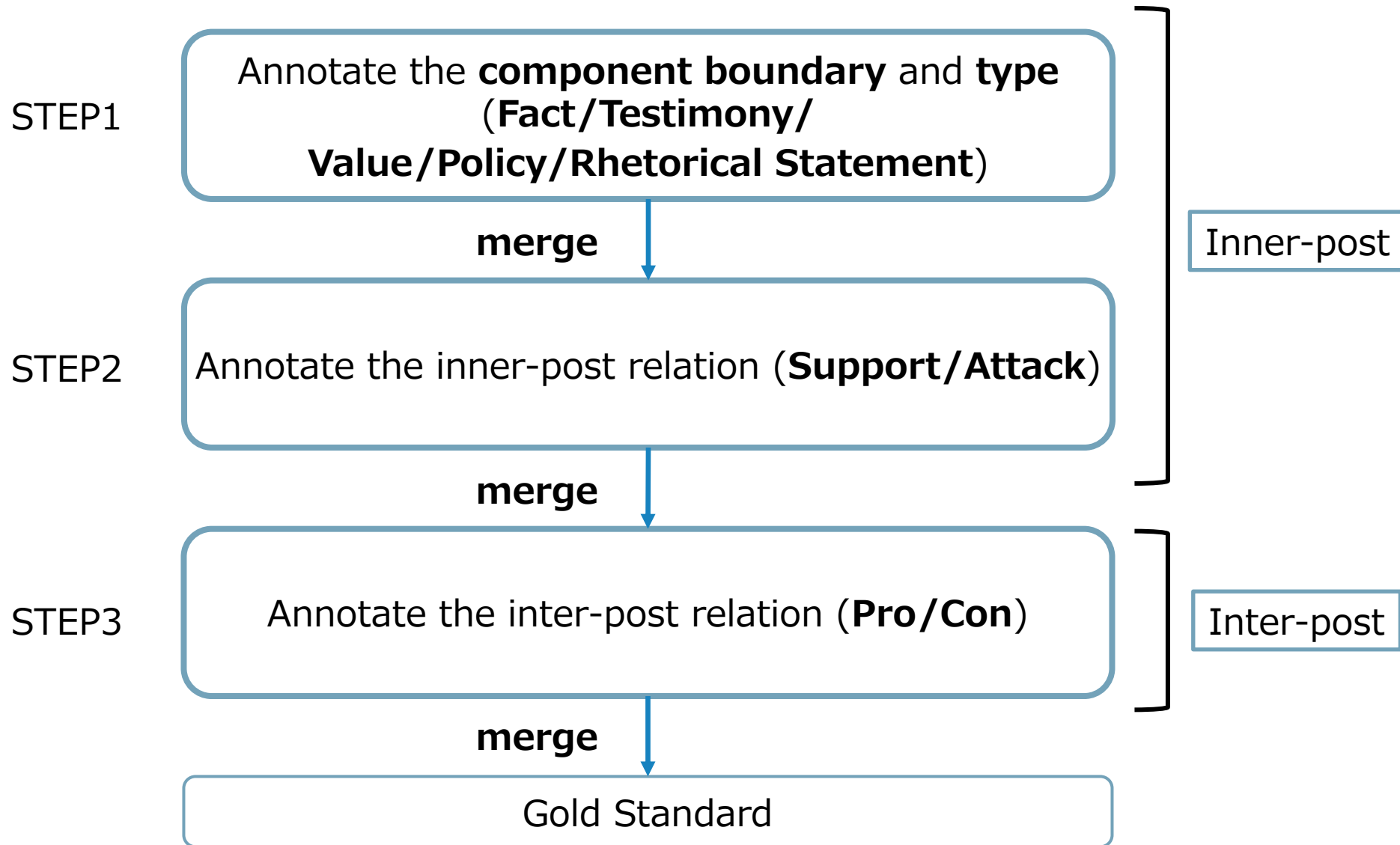
Inner-post argumentation

- 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

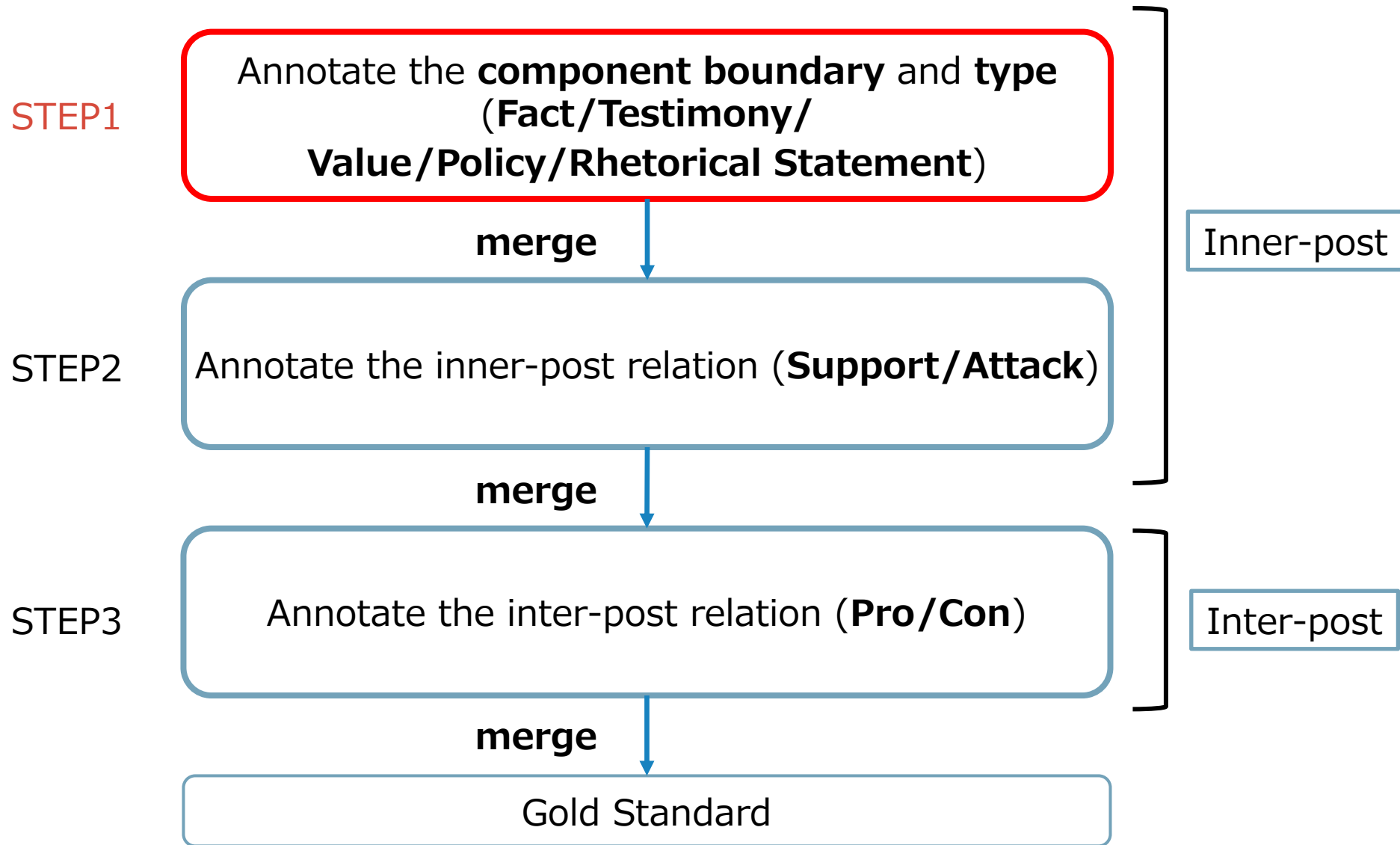
Inter-post interaction

- Post-to-post interaction

Annotation Scheme



Component Boundary and Type



Component Boundary and Type

Annotating component boundary

- We introduce the token-level (\neq 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 +]**.

Component Boundary and Type

[Park+] Five elementary units

Joonsuk Park and Claire Cardie. A Corpus of eRulemaking User Comments for Measuring Evaluability of Arguments. In the Proceedings of the 11th Language Resources and Evaluation Conference (LREC). 2018.

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. **Fact**

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

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

8 Then it was shotguns only. **Fact**

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

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. **Fact** Firearms are essentially gone and crime is out of control. **Fact**

13 So what was the critical difference? **Rhetorical_Statement**

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

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

16 Because some are good, and some are not. **Value**

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

19 1 - This sounds great. **Value**

Component Boundary and Type

Annotation example:

op_title : I do not love my parents. CMV

Note:

-Policy

-Value

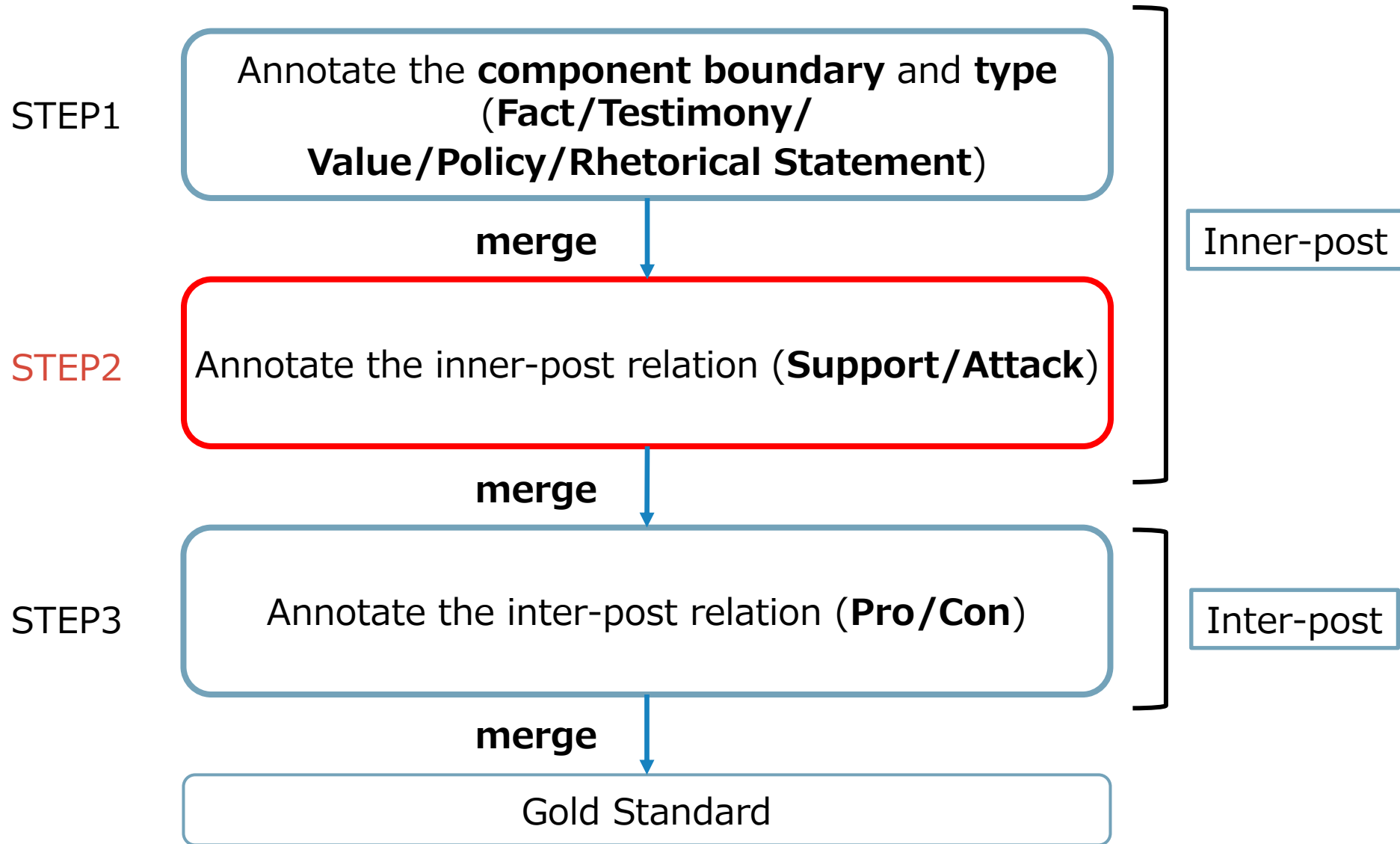
-Rhetorical Statement

-Fact

-Testimony

(OP) 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



Inner-post relation

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

Inner-post relation is defined as follows.

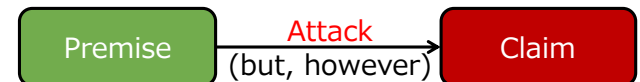
Support

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



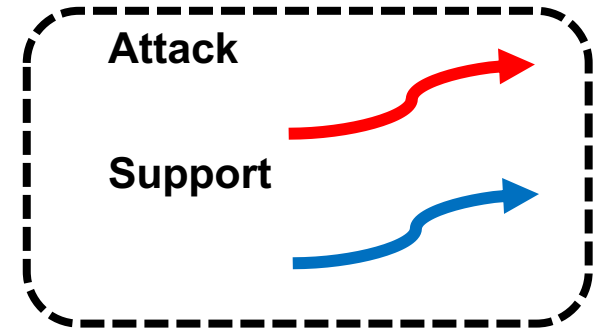
Attack

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



Inner-post relation

Annotation example:



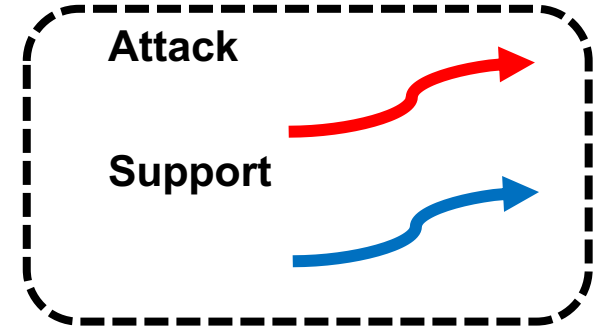
op_title : I do not love my parents. CMV

(OP) 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.

The text is annotated with colored highlights and arrows. Red highlights indicate 'Attack' relationships, blue highlights indicate 'Support' relationships, and purple highlights indicate 'Support' relationships. Arrows point from the highlighted text to the corresponding relationship type in the legend.

Inner-post relation

Annotation example (Argument):



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

Why should I blindly love any of my relatives?

They supported me for a long time

they add little value to my life

The past is a sunk cost

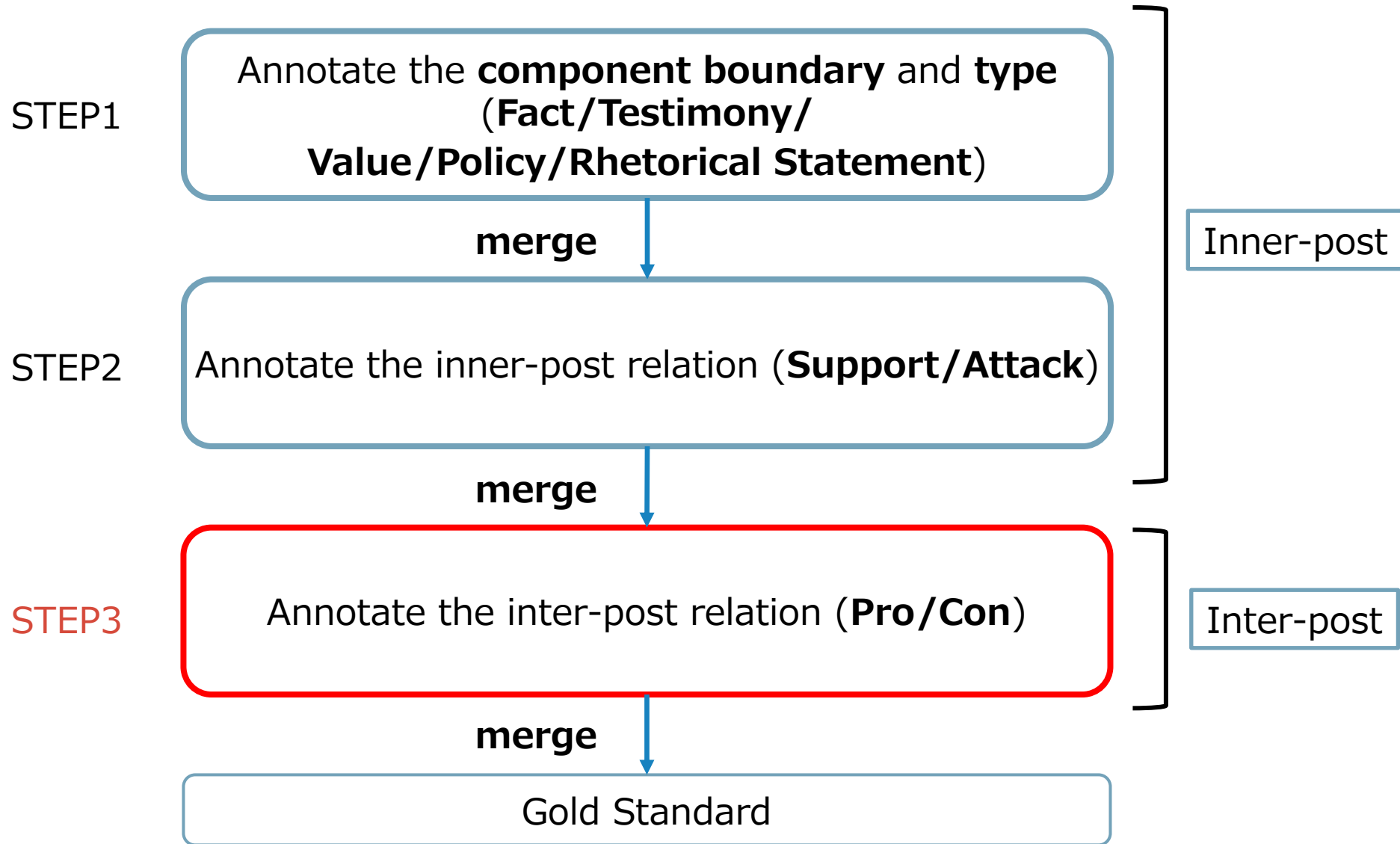
This extends beyond just parents

I am 25

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



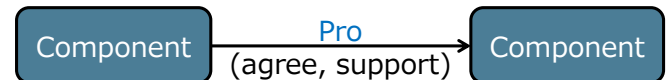
Inter-post relation

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

Inner-post relation is defined as follows.

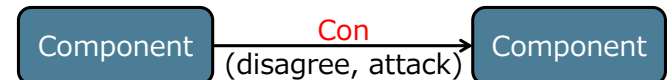
Pro

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



Con

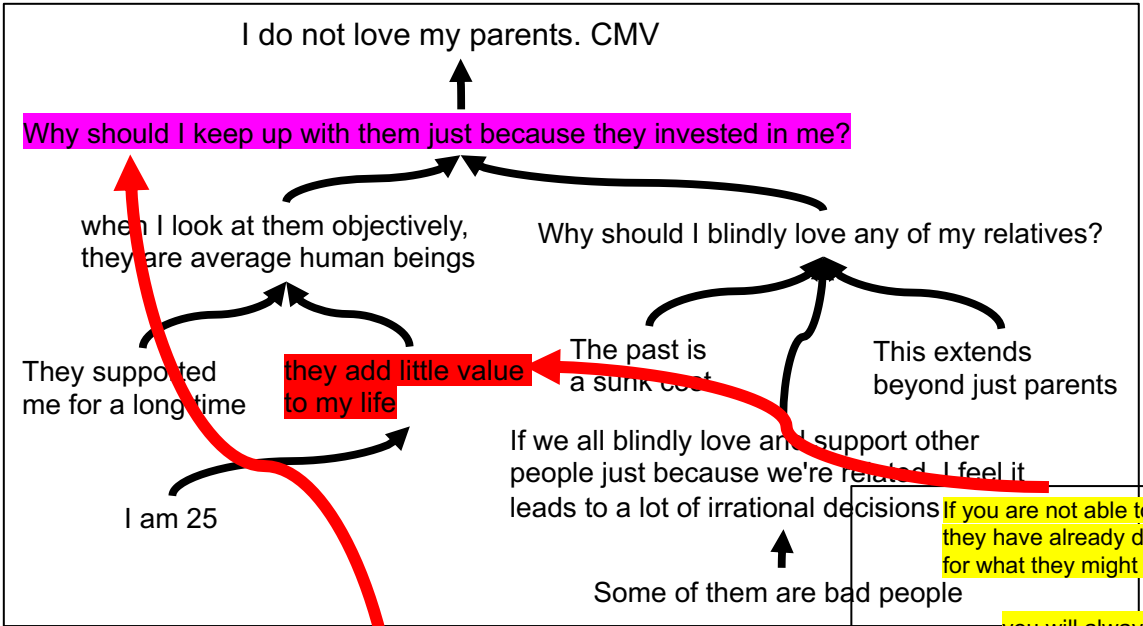
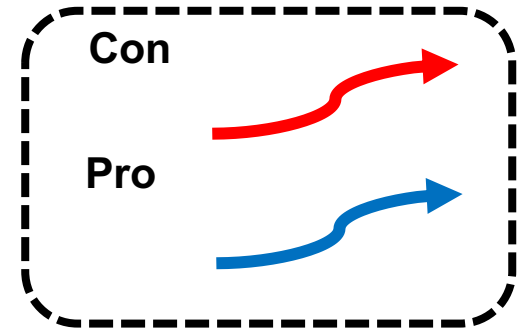
A component X in Pos/Neg has attack relation for a component Y in OP



Inter-post relation

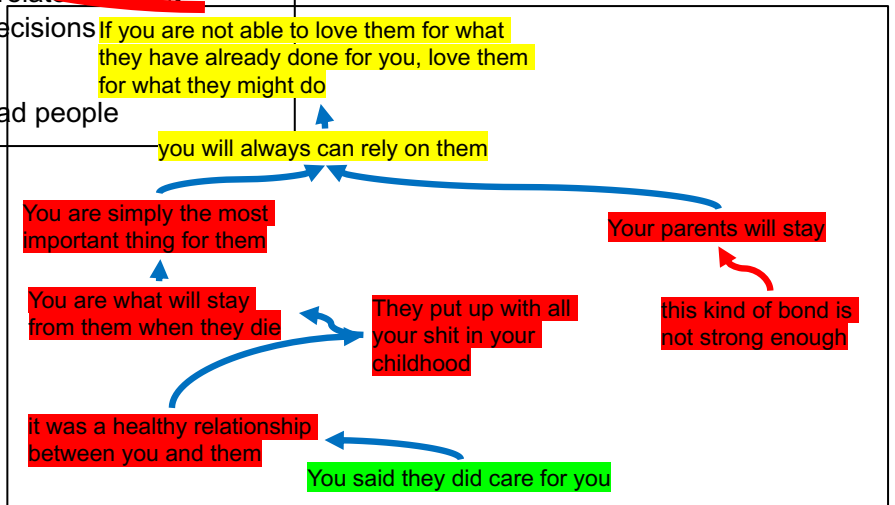
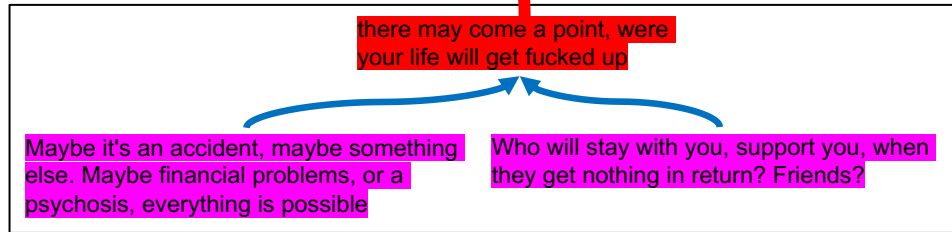
Annotation example:

OP



Pos-A②

Pos-A①



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

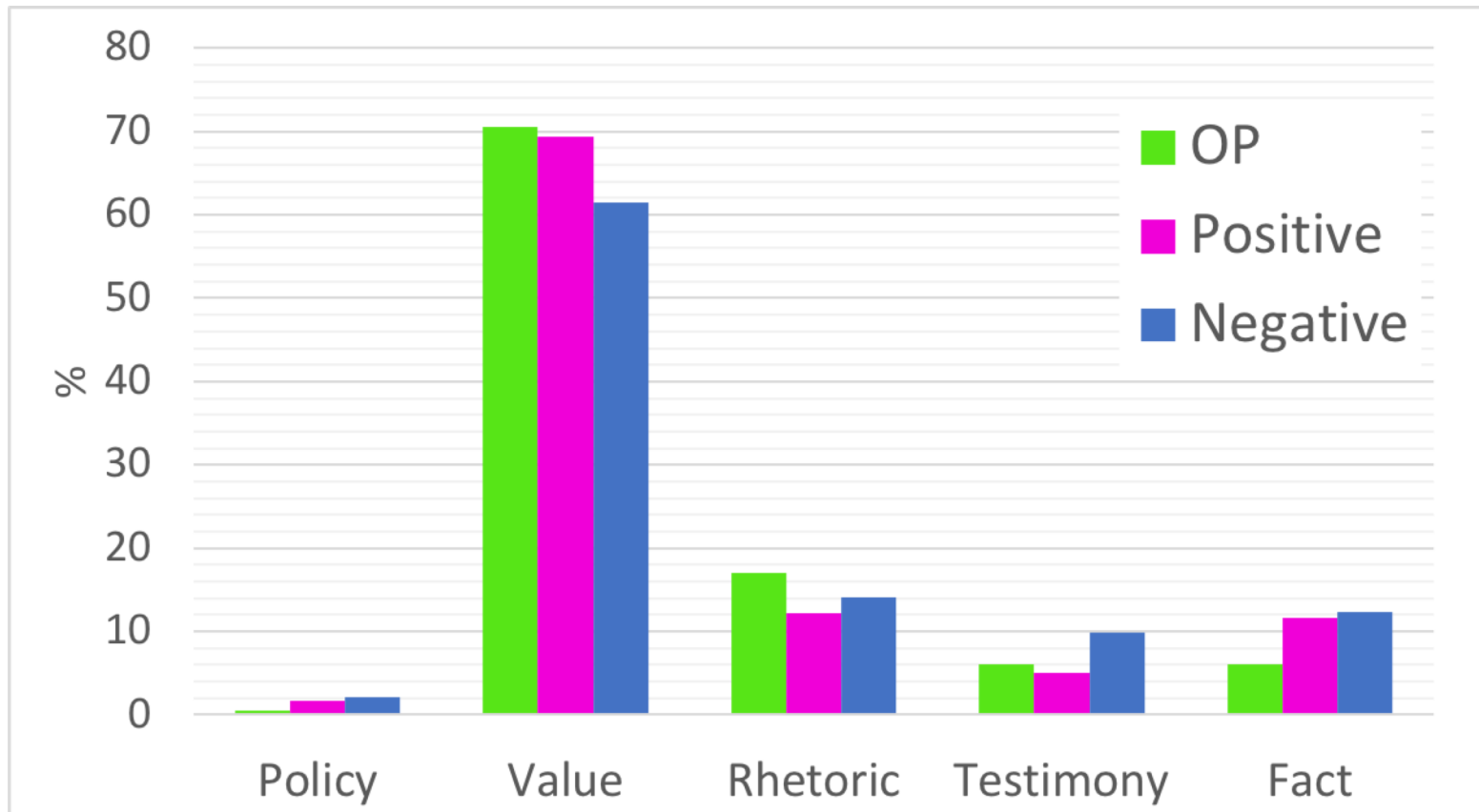
- Vocabulary: tendency
- Component: type, position, size
- Inner-post relation: type, size, depth
- Inter-post relation: type, size, depth

OP vs Positive/Negative

- Component: type, position, size
- Inner-post relation: type, size, depth

Analysis

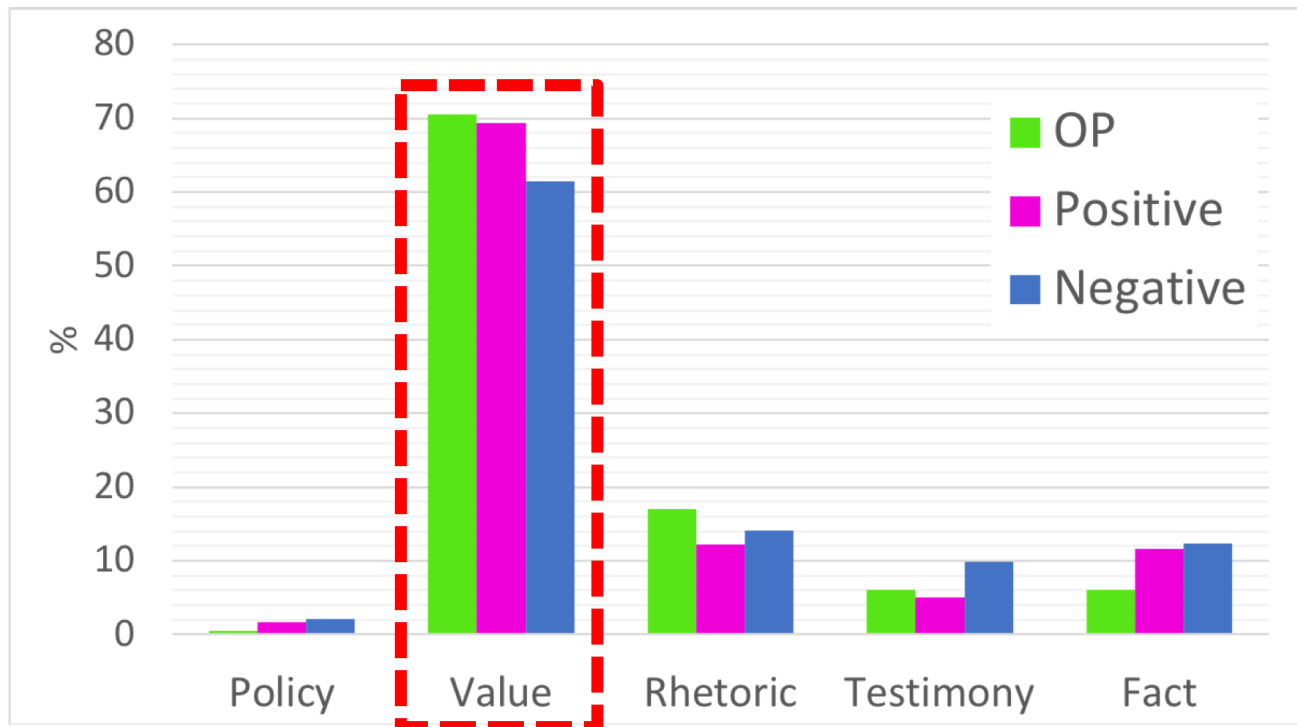
At this time, we analyzed 30 annotated threads.



Analysis

We found from the figure that...

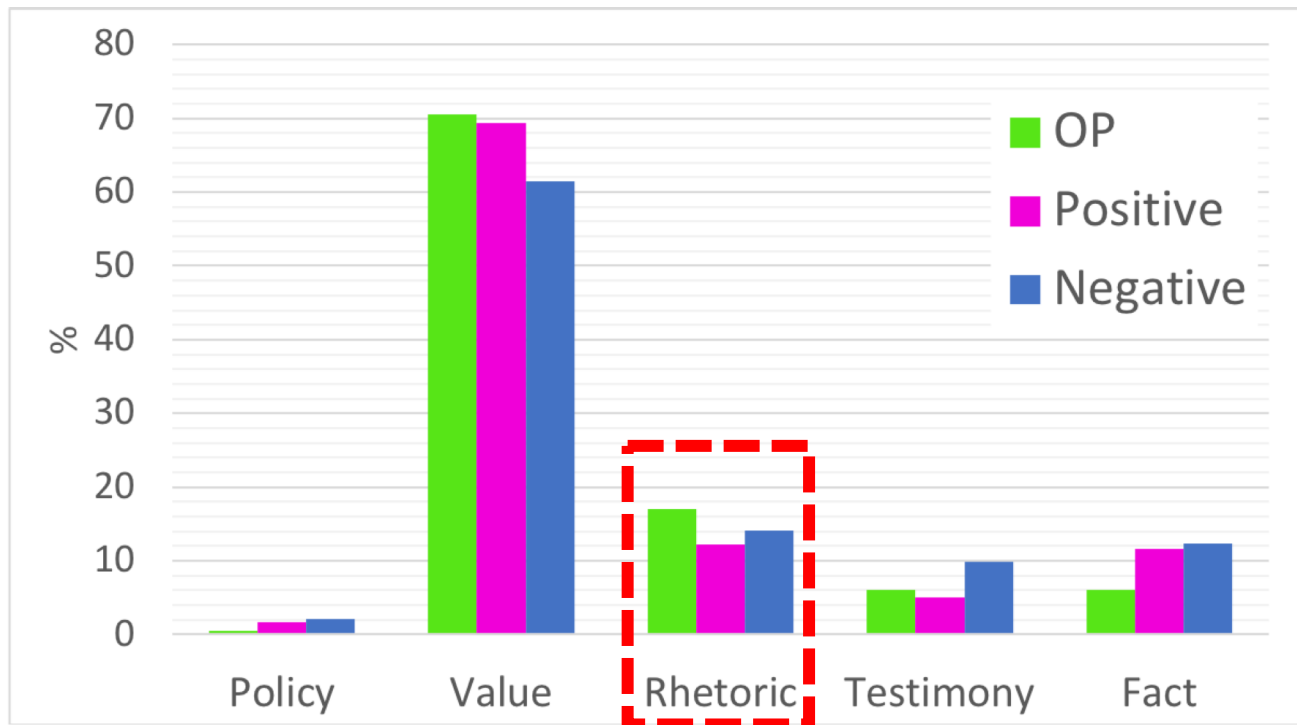
Compared to Negatives,
OPs and Positives are more Value-based.



Analysis

We found from the figure that...

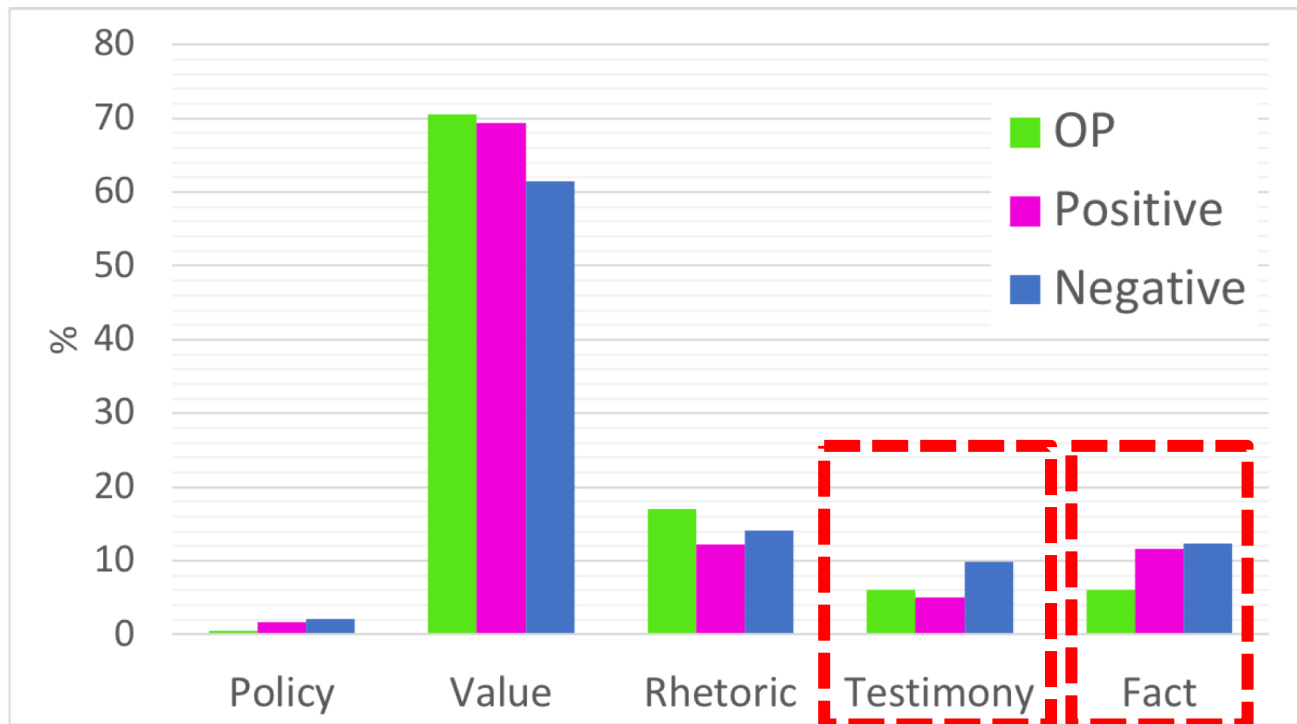
Interestingly, rhetorical statements are not effective for successful argument



Analysis

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?