

AN ONTOLOGY FOR

ARGUMENTATION ON THE SOCIAL WEB:

RHETORICAL EXTENSIONS TO THE AIF

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INTRODUCTION

- Descriptive vs Normative
- Logos, ethos and pathos
- Social - and anti-social - argumentation
- Model and expert review

LOGOS, ETHOS AND PATHOS

- **Logos** - Claims, data, evidence, logical reasoning
- **Ethos** - Character, trust, authority
- **Pathos** - Feelings, emotions

SOCIAL MEDIA

- Social media is a rich opportunity for analysing "Big" argument structures
- Allows us to see how massive communities form and conduct discussions

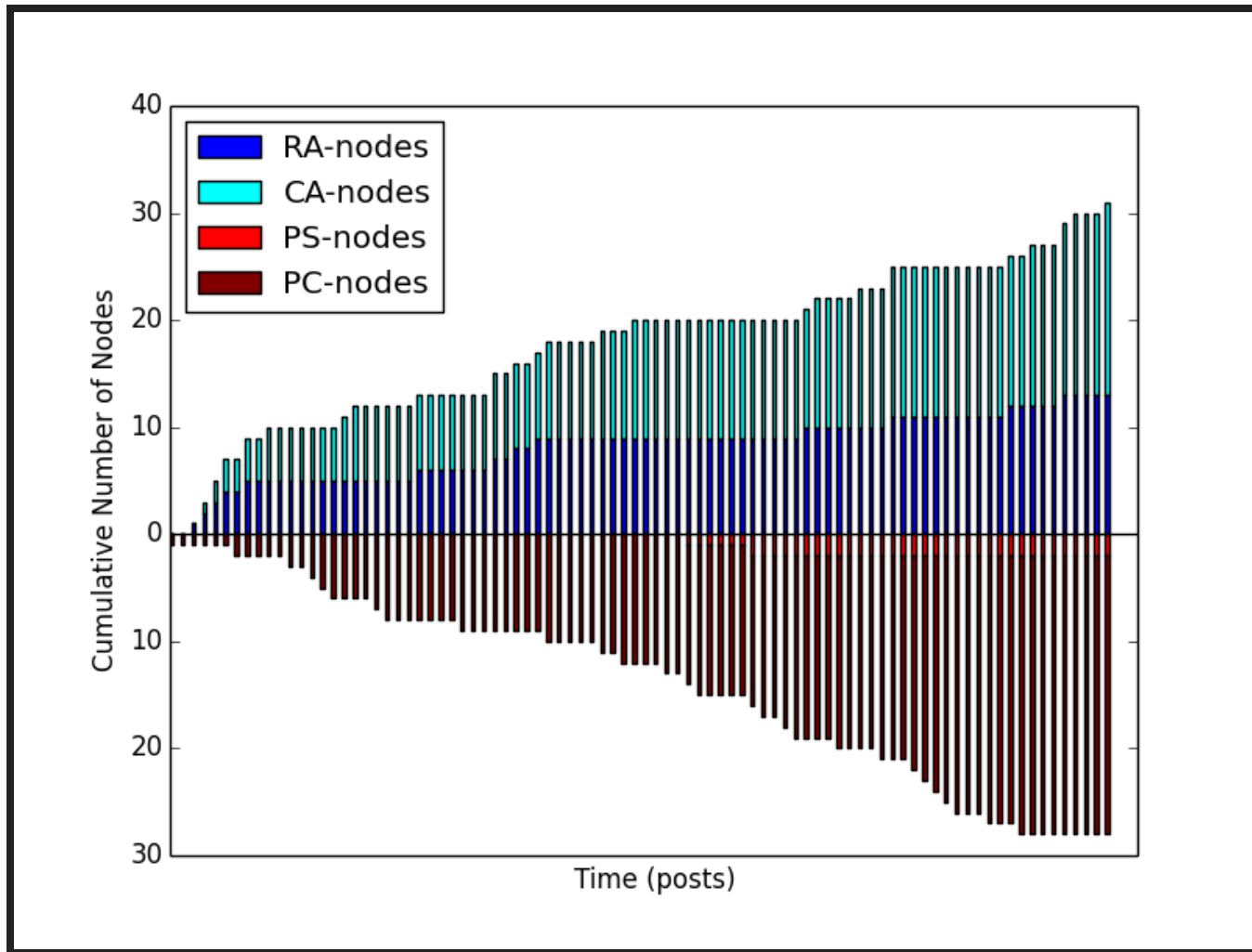
ANTI-SOCIAL MEDIA

- Design of social spaces causing debate to stagnate (e.g. echo-chambers/filter bubbles)
- Widespread controversy and abuse (e.g. #GamerGate)

Gilbert et al. (2009). Blogs are echo chambers: Blogs are echo chambers. *42nd Hawaii International Conference on System Sciences, HICSS'09*

Jane (2014). "Your a Ugly, Whorish, Slut" Understanding E-bile. *Feminist Media Studies*

LOGOS, ETHOS AND PATHOS



Blount et al. (2015). An Investigation into the Use of Logical and Rhetorical Tactics within Eristic Argumentation on the Social Web *Hypertext and Social Media 2015*

EXISTING MODELS

- Argument Interchange Format
- Inference Anchoring Theory (AIF+)
- Semantically Interlinked Online Communities

Chesñevar et al. (2006) Towards an argument interchange format. *Knowledge Engineering Review*

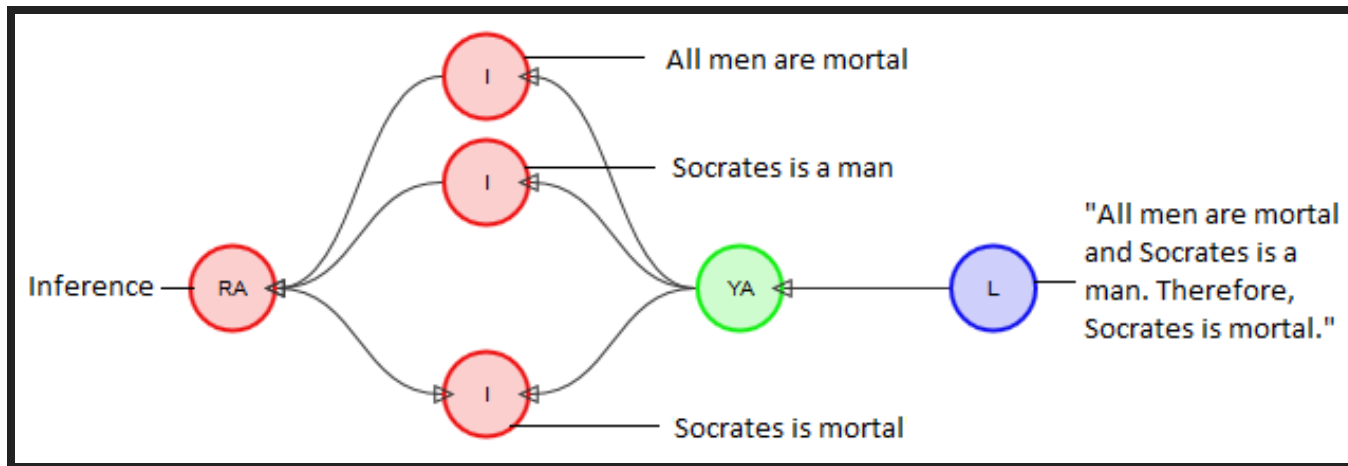
Reed et al. (2008) AIF+: Dialogue in the Argument Interchange Format. *FRONTIERS IN ARTIFICIAL INTELLIGENCE AND APPLICATIONS* 172

Breslin et al. (2006). SIOC: an approach to connect web-based communities. *International Journal of Web Based Communities*

AIF+/SIOC

- Information
- Inference/Conflict/Preference
- Locution/Anchor

EXAMPLE: SYLLOGISM



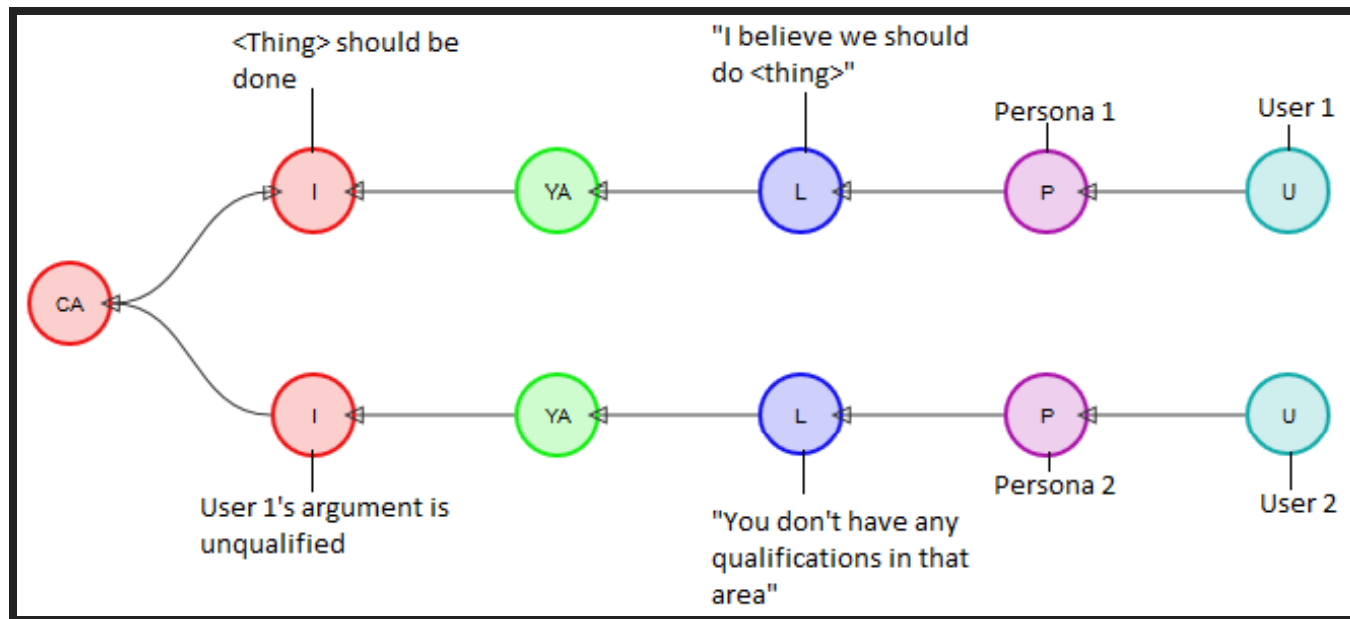
ASWO

- Argumentation on the Social Web
- Ties together the AIF and SIOC frameworks
- Includes additional nodes focused on social argumentation

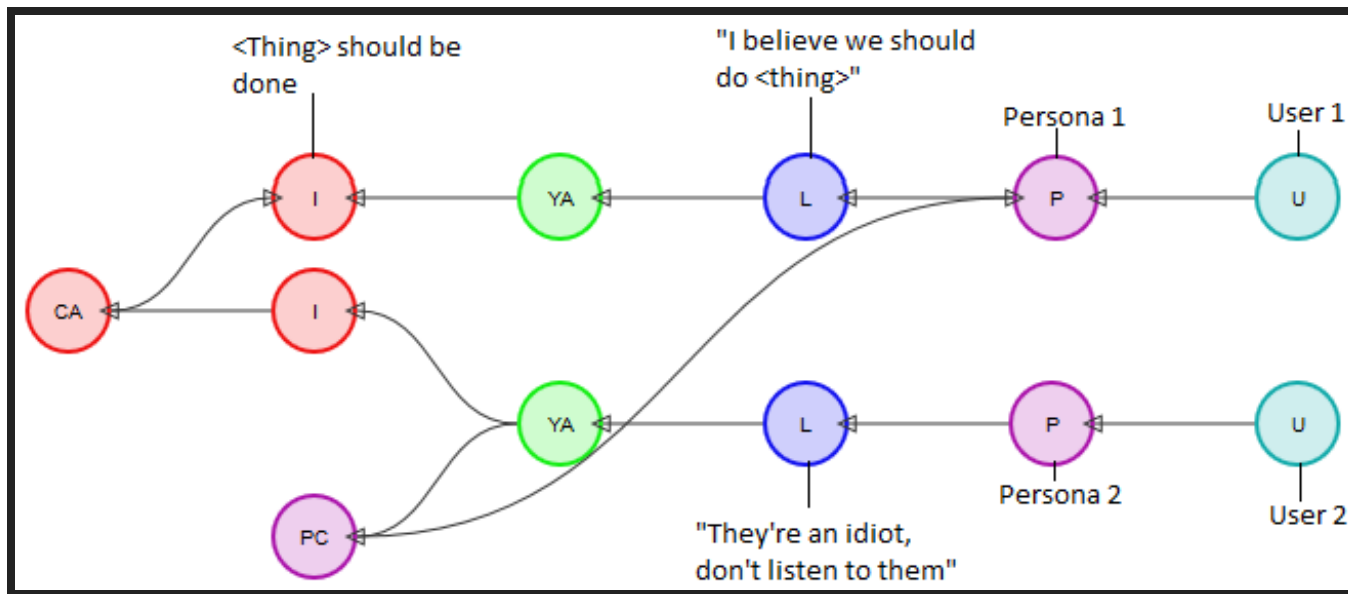
ASWO: ADDITIONAL NODES

- Persona
 - "Factions", Audience
- "Personal Support"
- "Personal Conflict"
- Implication

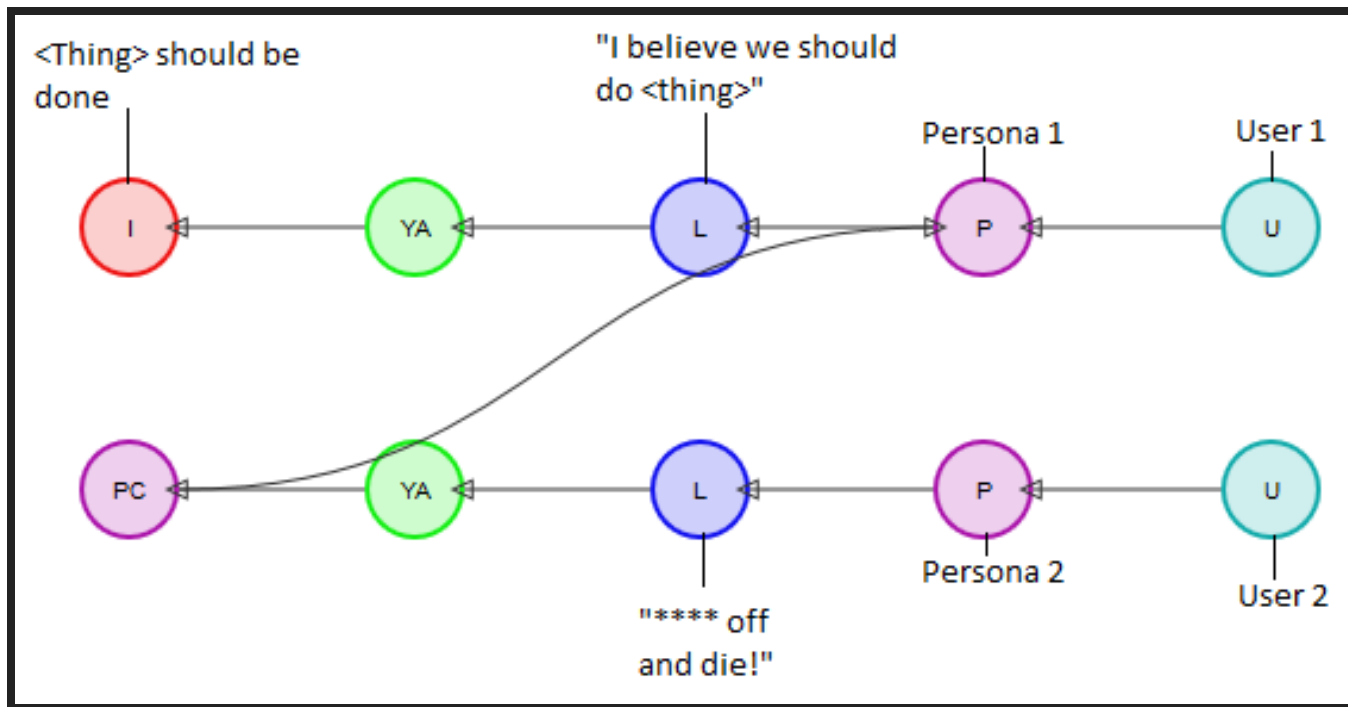
ASWO: CHARACTER ATTACK



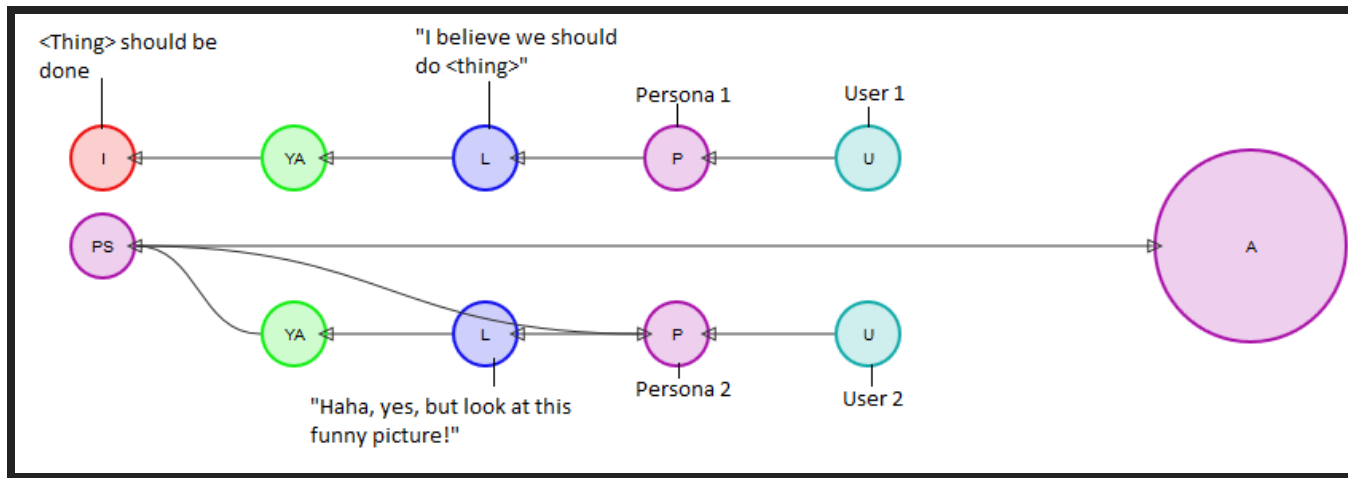
ASWO: CHARACTER ATTACK



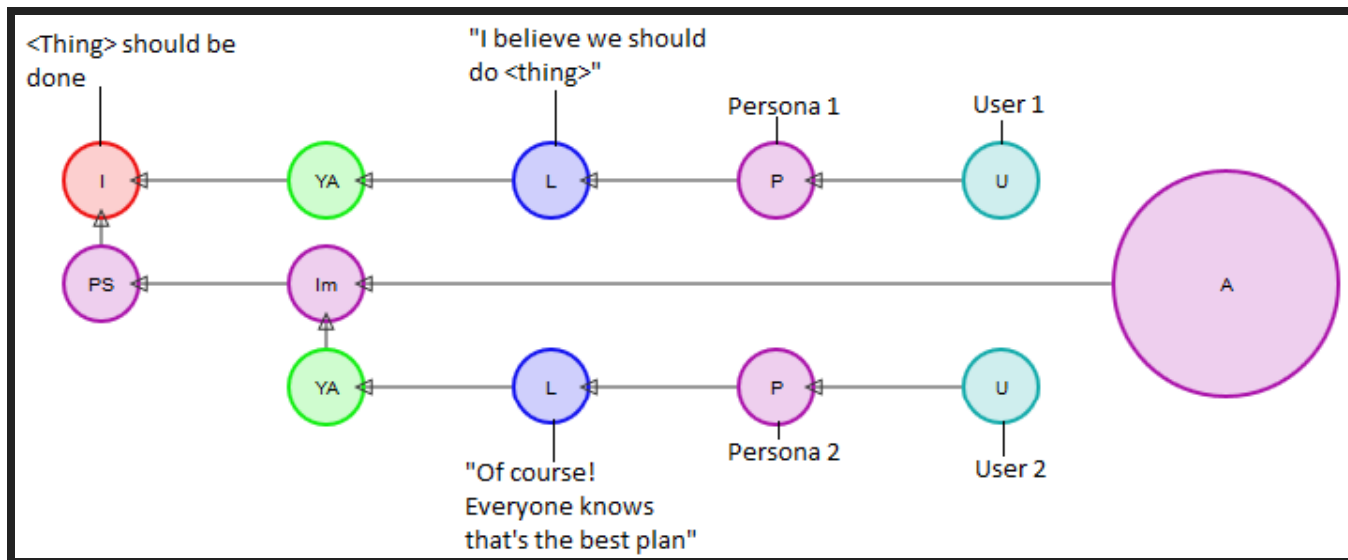
ASWO: CHARACTER ATTACK



ASWO: HUMOUR



ASWO: CONSENSUS



EXPERT REVIEW

- 6 experts
- Fields of argumentation, agents, web science, psychology, philosophy, open-/linked-data
- PhD Candidates, research fellows, technical specialists and lecturers

EXPERT REVIEW

- Asked to model three argument fragments
 - First with only the original set of nodes
 - Then with the expanded set
- Then interviewed about the experience

EXPERT REVIEW: ARGUMENT FRAGMENT 1

- **User 1:** Guns killed 33,000 people last year, they need to be banned
- **User 2:** @User1 And a lot of those were minors
- **User 3:** @User2 According to who?

EXPERT REVIEW: ARGUMENT FRAGMENT 2

- **User 1:** What does Barack Obama call illegal aliens?
Undocumented democrats!
- **User 2:** @User1 You're so stupid you probably went to the library to find Facebook

EXPERT REVIEW: ARGUMENT FRAGMENT 3

- **User 1:** The tech industry is often biased against women
- **User 2:** @User1 You would say that, you're a woman
- **User 3:** @User1 **** off and die you ****ing **** before I come and **** you up

EXPERT REVIEW: QUESTIONS

- Participants were asked a set of semi-structured questions
- Questions prompted participants to consider social-media, completeness, clarity, consistency
- Participants were allowed/encouraged to talk "around" the subject

EXPERT REVIEW: QUESTIONS

1. Why do you feel social argumentation is, or is not, important to model?
2. What, in your opinion, are the challenges of modelling social argument?
3. Are threatening and/or abusive comments something that should be considered social argumentation? If not, where should the line be drawn?
4. If yes, how do you feel these threatening and/or abusive comments should be included?
5. To what extent did the ASWO capture different elements of argumentation? What do you feel is missing?

EXPERT REVIEW: QUESTIONS

6. Were there parts of the ASWO you felt were unclear? In what way?
7. Do you feel the ASWO is consistent with the AIF?
8. Do you feel the ASWO is internally consistent?
9. If two people were to separately model the same argument using the ASWO, do you think they would achieve the same result? Do you feel this is important?
10. Do you have any other comments about the implementation of this model?

SOCIAL MEDIA: VALUE

"...if we're going to have a realistic model of how people argue, we've got to look at how people really argue rather than how our 'ideal reasoner' would argue"

"I think modelling social argumentation is very important...I want to say it's useful in trying to help people argue 'better'."

SOCIAL MEDIA: CHALLENGES

"Even in quite a simple back-and-forth argument, there's quite a lot going on...scale is a challenge"

"...enthymemes, humour, there's lots of missing information, there's lots of playing to particular audiences...there are lots of things that are current events or would only make sense to a particular group"

SOCIAL MEDIA: ABUSE AND THREATS

"I, personally, tend to ignore all of those because I'm...focusing on the informal proof structures"

"..it's hard to exclude them...if you think about what you're going to do with the model...do you want to retrieve threatening and abusive comments? Well you might want to exclude them from being retrieved, which also makes it relevant to model that"

COMPLETENESS: IMPLICIT/EXPLICIT PREMISES

"I think when people model arguments it's pretty common to infer the reading, and what's interesting is that there can be multiple readings. So it wouldn't be wrong to...put in some interpretation, as long as it's clear it's an interpretation and there can be others"

COMPLETENESS: SOCIAL META-DATA

"One other thing... is other people's opinions of statements. A lot of systems have thumbs up and thumbs down...what you need is, I think, an audience response"

CLARITY: GENERALISATION

"If anything I think maybe your default conflict is a superclass - everything is a conflict, and one of the subclasses is a...rational argument. But then you've also got personal attack, ad hominem...these are all alternatives to rational argument, but at the default it might be worth allowing modelling of a conflict. Not a conflict as it is in the original model, but as a superclass of interaction."

CLARITY: AMBIGUITY AND CONTEXT

CONSISTENCY: INTERNAL

"whenever you try to model anything in a formalised system...if you give two people the same thing...unless it's something really simple, they will always find two different ways of modelling it"

"...rather than having the minimal number of nodes and encouraging people to just misuse them, I would rather say 'Here's a definite type of argumentation we want to capture and share...'"

CONSISTENCY: EXTERNAL

*"Consistent with [the AIF], maybe not, but building on?
Definitely"*

ONGOING AND FUTURE WORK

- Build on experts suggestions; refine by review
- Examine how different tactics alter a user's perception of individual comments
- Examine how the presence (or absence) of different tactics alter a user's perception of the argument as a whole
- Investigate crowdsourced annotations by non-experts

CONCLUSION

- A successful argument is not necessarily a good argument
- Experts had varied (and sometimes conflicting) opinions
- Additional social nodes appeared to aid the modelling process

QUESTIONS?

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