



# **DECENTRALISED MODERATION: BRINGING DEMOCRACY TO INTERNET**

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# MODERATION: AN INTERNET CHALLENGE

Current virtual communities: intensive human labour to deal with moderation

Policies to regulate contents:

- To decide if a content is unacceptable

Users:

- Are not aware of such regulations
- Have not been involved in their definition

**BUT...**



# WHAT IF PARTICIPANTS DECIDE THEIR POLICIES?

- Ostrom: “societies” that involve individuals in the definition of their rules perform better (vs. externally imposed).
- Democracy also considers people's opinion.
- Our view:

**Participants will be more prone to behave correctly if involved in the decision.**



# HOW CAN WE AGGREGATE OPINIONS?

Norm example : “Flatmates take fixed turns for dishwashing at 10 p.m.”

- **Voting:**
  - Select from different options:
    - Yes
    - No
- Simple
- Unjustified

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  - Provide arguments in favour/against:
    - $a_1$  = “10 p.m. is too late”
    - $a_2$  = “Schedule is too rigid”
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  - Complex
  - Justified

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Collective intelligence

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- **Our focus:**
  - Argumentation theory
  - Information fusion

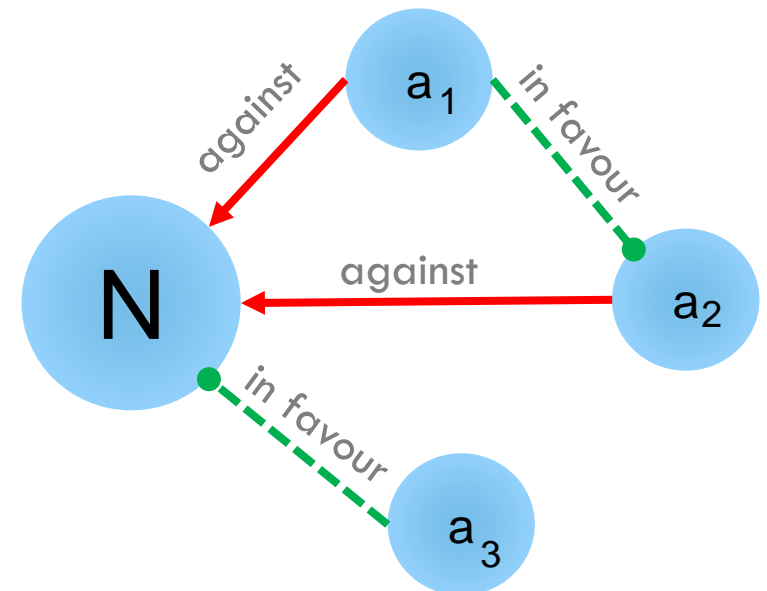


# OPINION AGGREGATION (ARGUMENTATION LOGIC)

Norm ex. **N**: “Flatmates take fixed turns for dishwashing at 10 p.m.”

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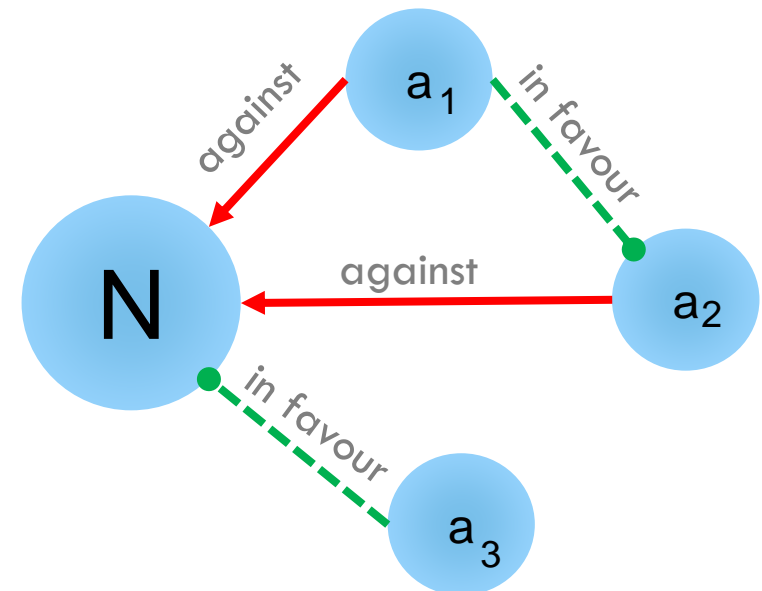
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**Should flatmates adopt this norm?**



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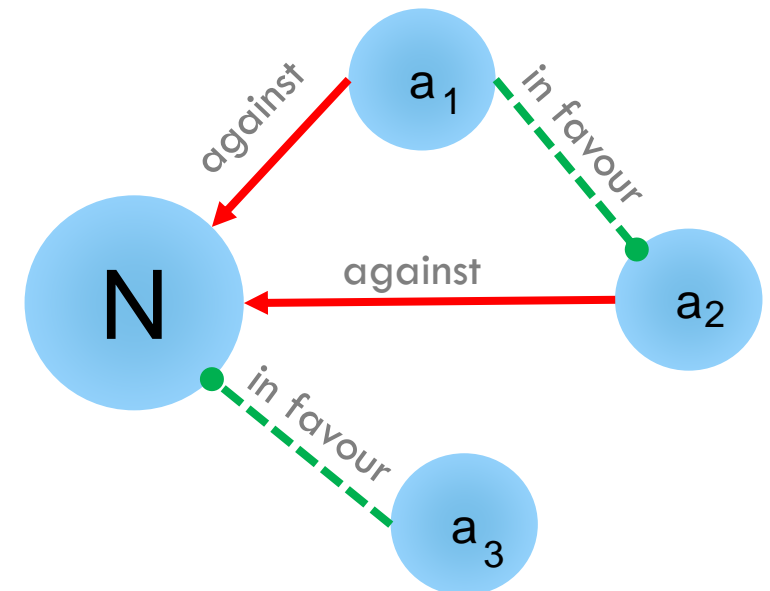
**Should flatmates adopt this norm?**

Alan gets up early 4 days/week

Barbara has spare time at night

Charles is keen to have a routine

	N	$a_1$	$a_2$	$a_3$
Alan gets up early 4 days/week	✗	✓	✓	✓
Barbara has spare time at night	✓	✗	✗	✓
Charles is keen to have a routine	✓	✓	✗	✓



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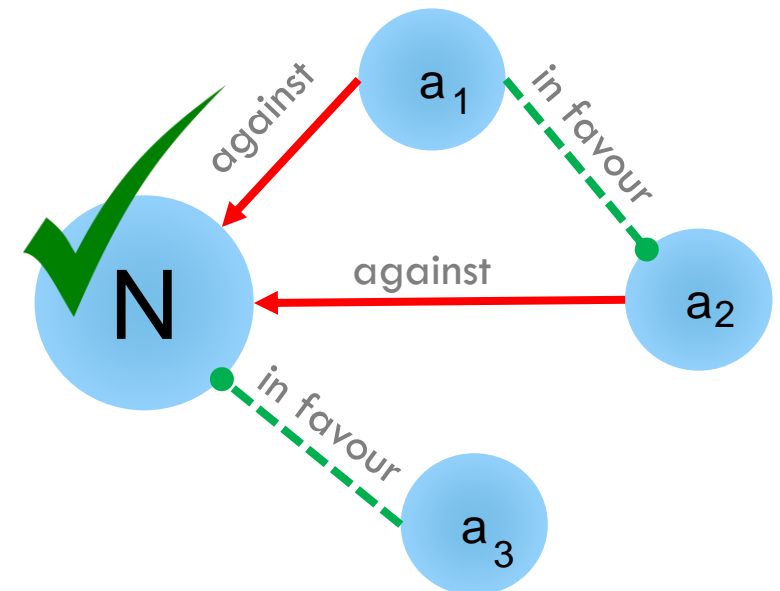
Should flatmates adopt this norm? **Yes**

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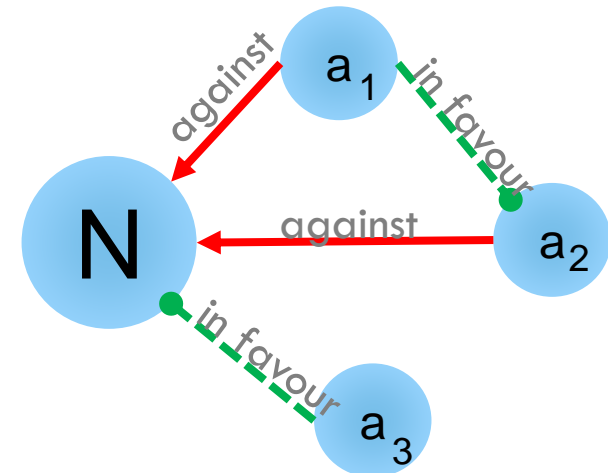


# OPINION AGGREGATION (ARGUMENTATION LOGIC)

## Our contribution:

- Method based on argumentation logic to compute aggregated decisions

N	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>
✗	✓	✓	✓
✓	✗	✗	✓
✓	✓	✗	✓



# OPINION AGGREGATION (ARGUMENTATION LOGIC)

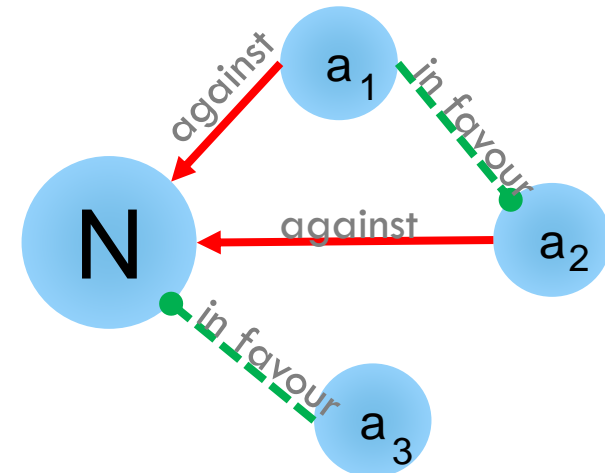
Our contribution:

- Method based on argumentation logic to compute aggregated decisions

## Challenges:

- Easy way to gather information from all participants
- Intuitive way to show individual/collective information

N	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>
✗	✓	✓	✓
✓	✗	✗	✓
✓	✓	✗	✓



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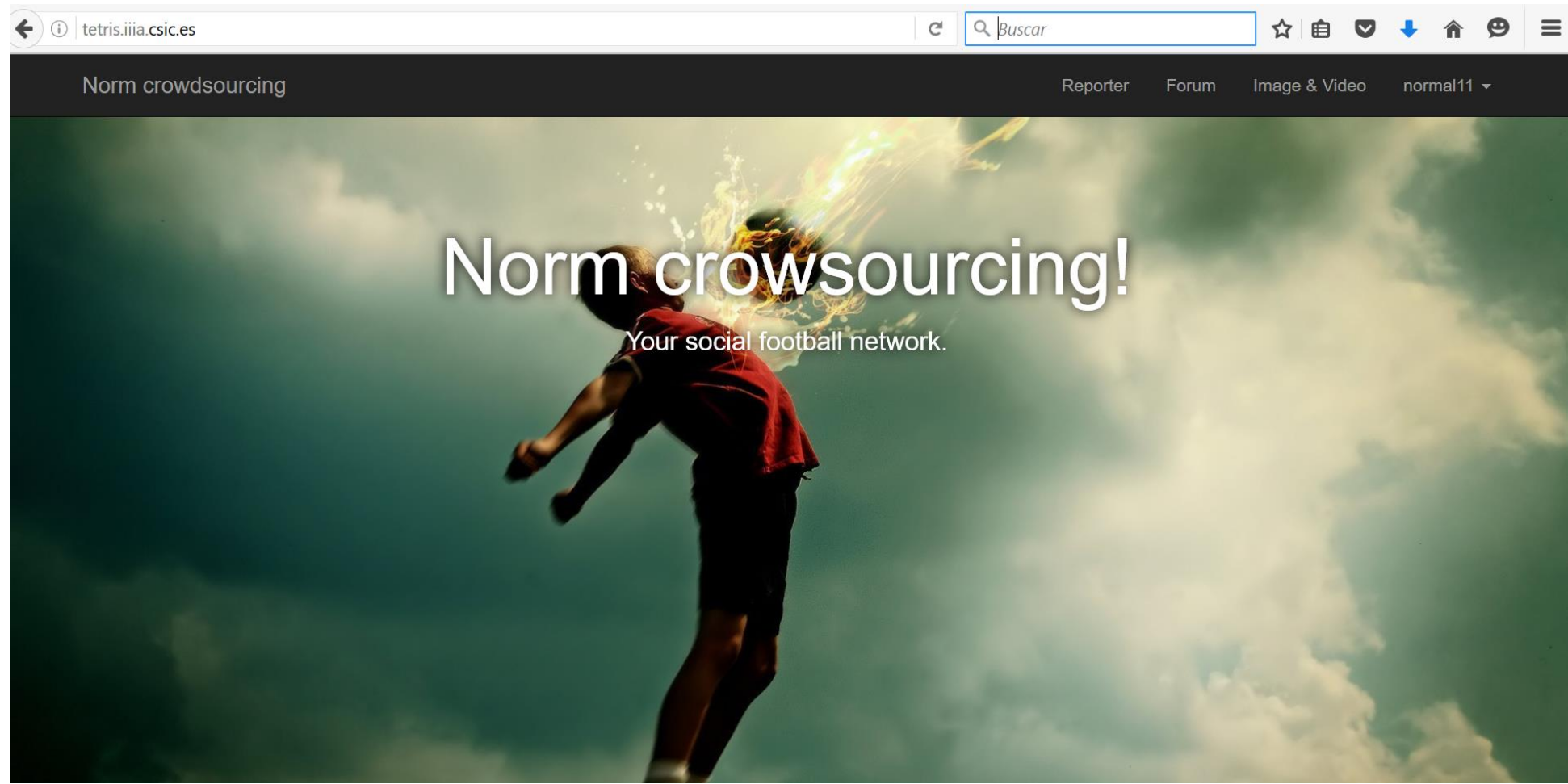
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- **Our focus:**
  - Argumentation theory
  - **Information fusion**



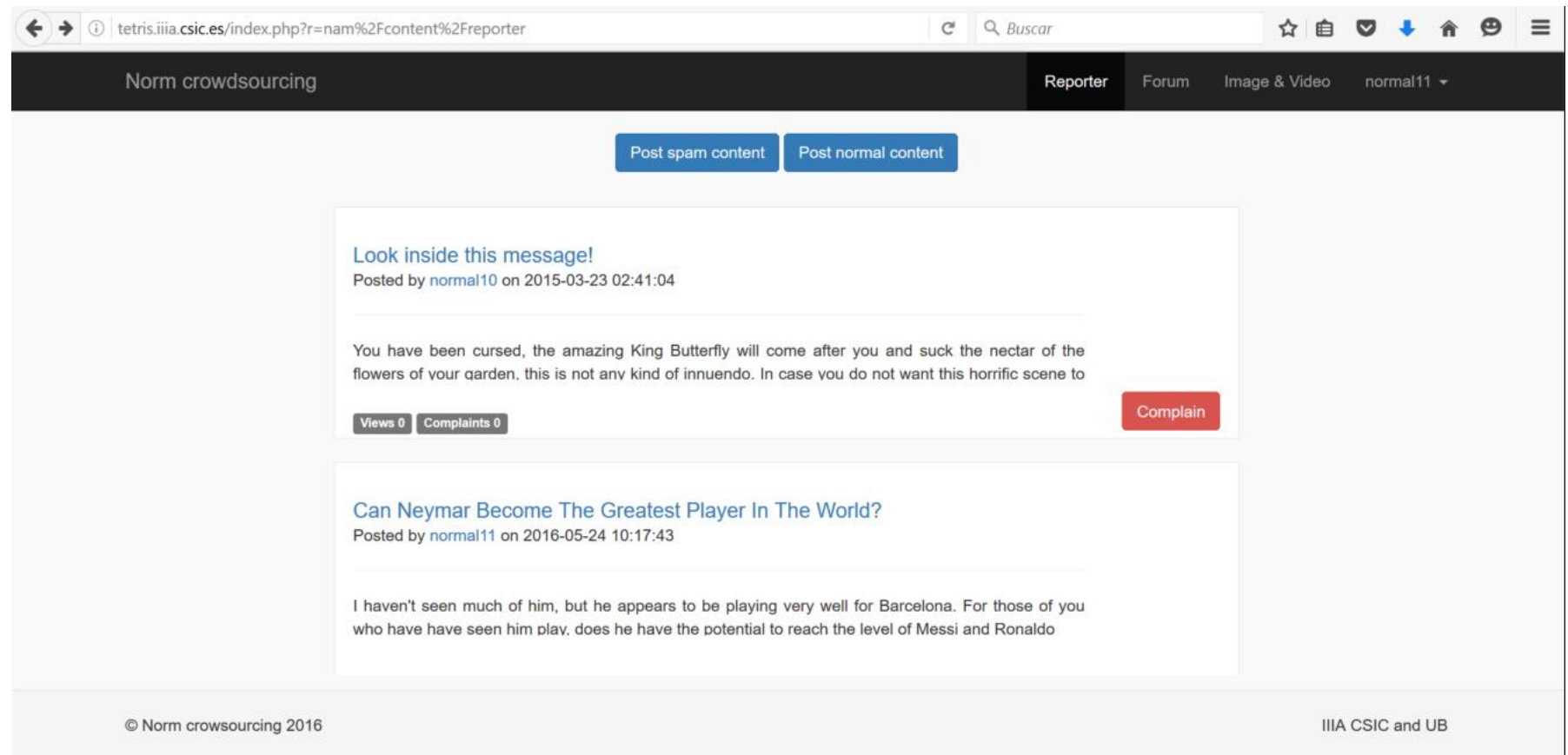
# ON-LINE COMMUNITY PROTOTYPE

• <http://tetris.iii.csic.es>



# ON-LINE COMMUNITY PROTOTYPE

- <http://tetr.is.iiia.csic.es>



The screenshot displays a web browser window with the URL `tetr.is.iiia.csic.es/index.php?r=nam%2Fcontent%2Freporter`. The page title is "Norm crowdsourcing". The navigation bar includes "Reporter", "Forum", "Image & Video", and a user profile "normal11". Two buttons, "Post spam content" and "Post normal content", are visible. The main content area shows two forum posts. The first post, titled "Look inside this message!", is by user "normal10" and dated 2015-03-23 02:41:04. Its content reads: "You have been cursed, the amazing King Butterfly will come after you and suck the nectar of the flowers of your garden, this is not any kind of innuendo. In case you do not want this horrific scene to". It has 0 views and 0 complaints, and a "Complain" button. The second post, titled "Can Neymar Become The Greatest Player In The World?", is by user "normal11" and dated 2016-05-24 10:17:43. Its content reads: "I haven't seen much of him, but he appears to be playing very well for Barcelona. For those of you who have have seen him play, does he have the potential to reach the level of Messi and Ronaldo". The footer contains "© Norm crowdsourcing 2016" and "IIIA CSIC and UB".



# ON-LINE COMMUNITY PROTOTYPE

- Norm Example discussion

Participants can add arguments in favour and against a proposed norm

Forbidden to upload Spam at Reporter section

**Positive arguments** Add

- Content such as [Aberdeen Season Tickets up 35%](#) should not be published to upload this content
- WHY ARE YOU RUINING THIS PAGE PLSSSS I U SO MEEEEEEEEEEEEEEEEEEAN
- I only want to see opinions which are similar to my own
- there is no such free tickets for next Realmadird match
- In the night, Ronaldo is hating your soul very hard
- Stop spamming you fools! D:
- We have enough problems with Siria, why do you have to spam?

**Negative arguments** Add

- Really nice T-shirts. I recommend this, mis diez
- I BUY WAT I WANT, SPAM OR NOT SPAM. NO MORE FILTERS!!!
- Please ship 10 t-shirts to UB, Aula S-1 asap.

# HOW DO WE DECIDE IF A NORM SHOULD BE ESTABLISHED?

- Arguments in favour  $>$  arguments against
  - Number of arguments? No: not all arguments should count equally



# HOW DO WE DECIDE IF A NORM SHOULD BE ESTABLISHED?

- Arguments in favour  $>$  arguments against
- Ask opinions about arguments (values)
  - How we do combine “like” with dislikes values?
  - What does a neutral value mean?



# HOW DO WE DECIDE IF A NORM SHOULD BE ESTABLISHED?

- Arguments in favour  $>$  arguments against
- Ask opinions about arguments (values)
- We should just consider the ones that people think are worth
  - How many people should like it?
  - How much should they like it?



# ON-LINE COMMUNITY PROTOTYPE

- Our proposal

Each participant awards stars to arguments:

- 5 totally in favour
- 3 neutral
- 1 totally against

Forbidden to upload **Spam** at **Reporter** section ★★★★★

**Positive arguments** ★★★★★ **Add**

Content such as [Aberdeen Season Tickets up 35%](#) should not be published to upload this content ★★★★★ (3) Rate argument: ★1★2★3★4★5

WHY ARE YOU RUINING THIS PAGE PLSSSS I U SO MEEEEEEEEEEEEEEEEEEAN ★★★★★ (4) Rate argument: ★1★2★3★4★5

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We have enough problems with Siria, why do you have to spam? ★★★★★ (2) Rate argument: ★1★2★3★4★5

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Aggregation operators

Argument rating: the farther a rating is from neutrality, the stronger its importance when computing its collective support

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Argument rating: the farther a rating is from neutrality, the stronger its importance when computing its collective support

Argument set rating: aggregate relevant arguments

# ON-LINE COMMUNITY PROTOTYPE (INFORMATION FUSION)

- Our proposal

Aggregated norm rating to decide about the norm

Forbidden to upload **Spam** at **Reporter** section ★★★★★

**Positive arguments** ★★★★★

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# OPINION AGGREGATION (INFORMATION FUSION)

Our contribution:

- Information fusion and aggregation operators to combine (numerical) opinions

**Challenges:**

- Usability

Forbidden to upload Spam at Reporter section ★★★★★

**Positive arguments** ★★★★★ **Add**

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Problem: Collective decision making about norm adoption

Contributions:

1. Argumentation theory to handle arguments in favour or against a norm
2. Information fusion and aggregation operators that combine (numerical) individual opinions

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Challenges:

- Social intelligence requires to deal with complexity
- Usability when dealing with social interactions, individual/collective/aggregated opinions

THANK YOU

