Emotional Links between Structure and Content in Online Communications

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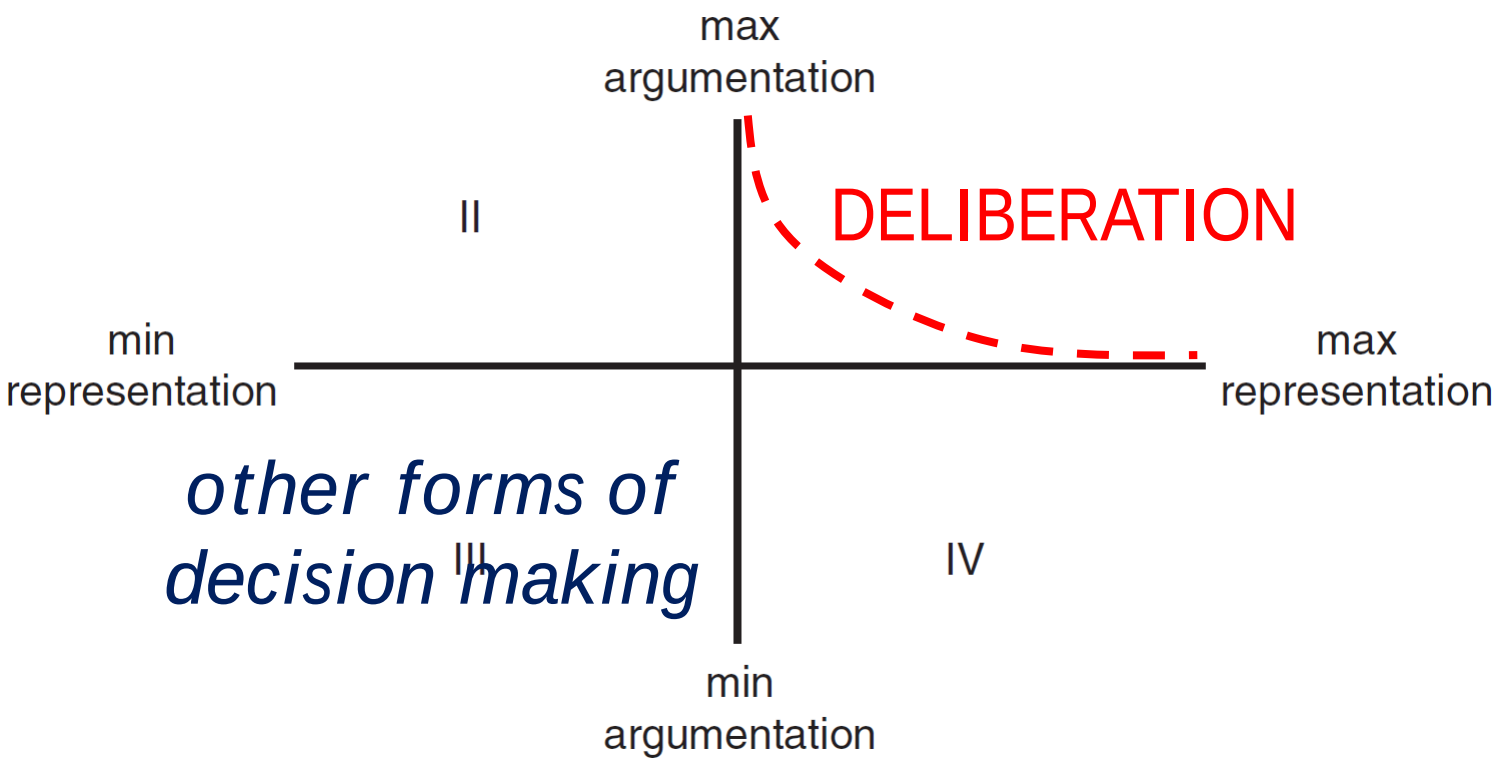
Motivation and Objectives

- Width and depth in online discussion trees strongly depends on topic (Gonzalez-Bailon et al., 2010)
- Deliberation theory (Habermas, 1984) can be used to explain structure for online discussion phenomena

Is there any relation to content?

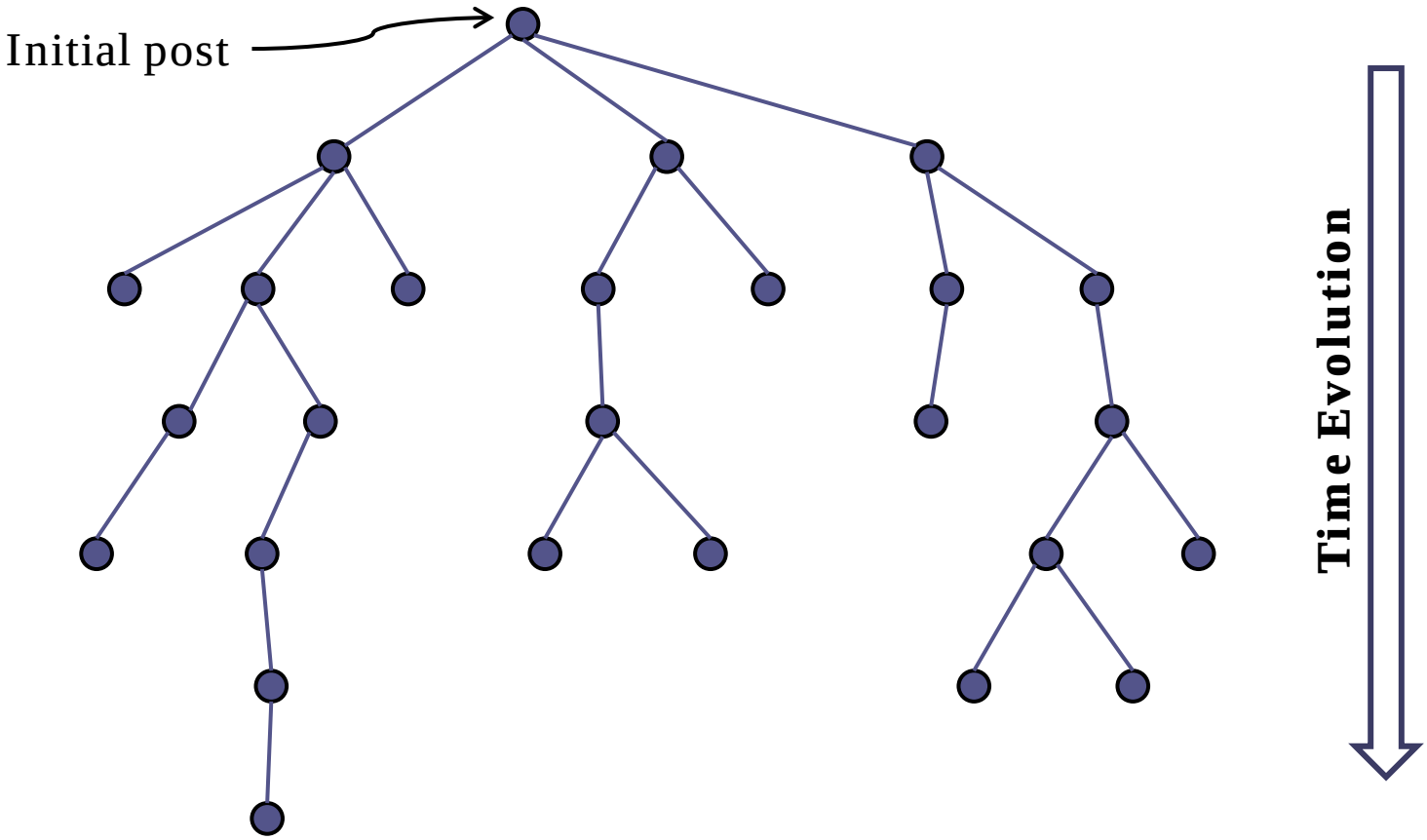
Preliminary Work

- Prerequisites of deliberation (Ackerman and Fishkin, 2002)



Preliminary Work

- ***WIDTH*** and ***DEPTH*** in online discussion trees



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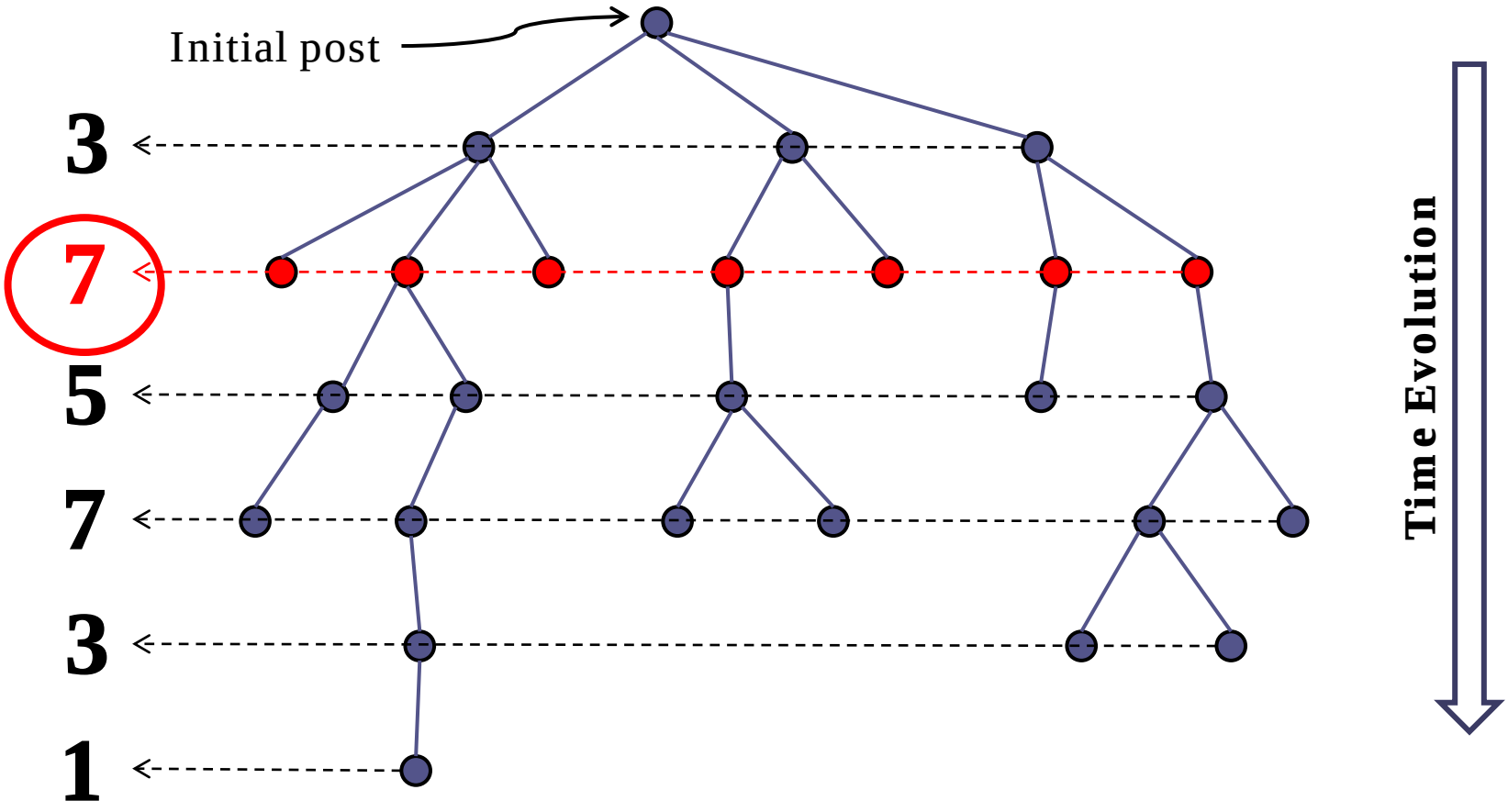

Preliminary Work

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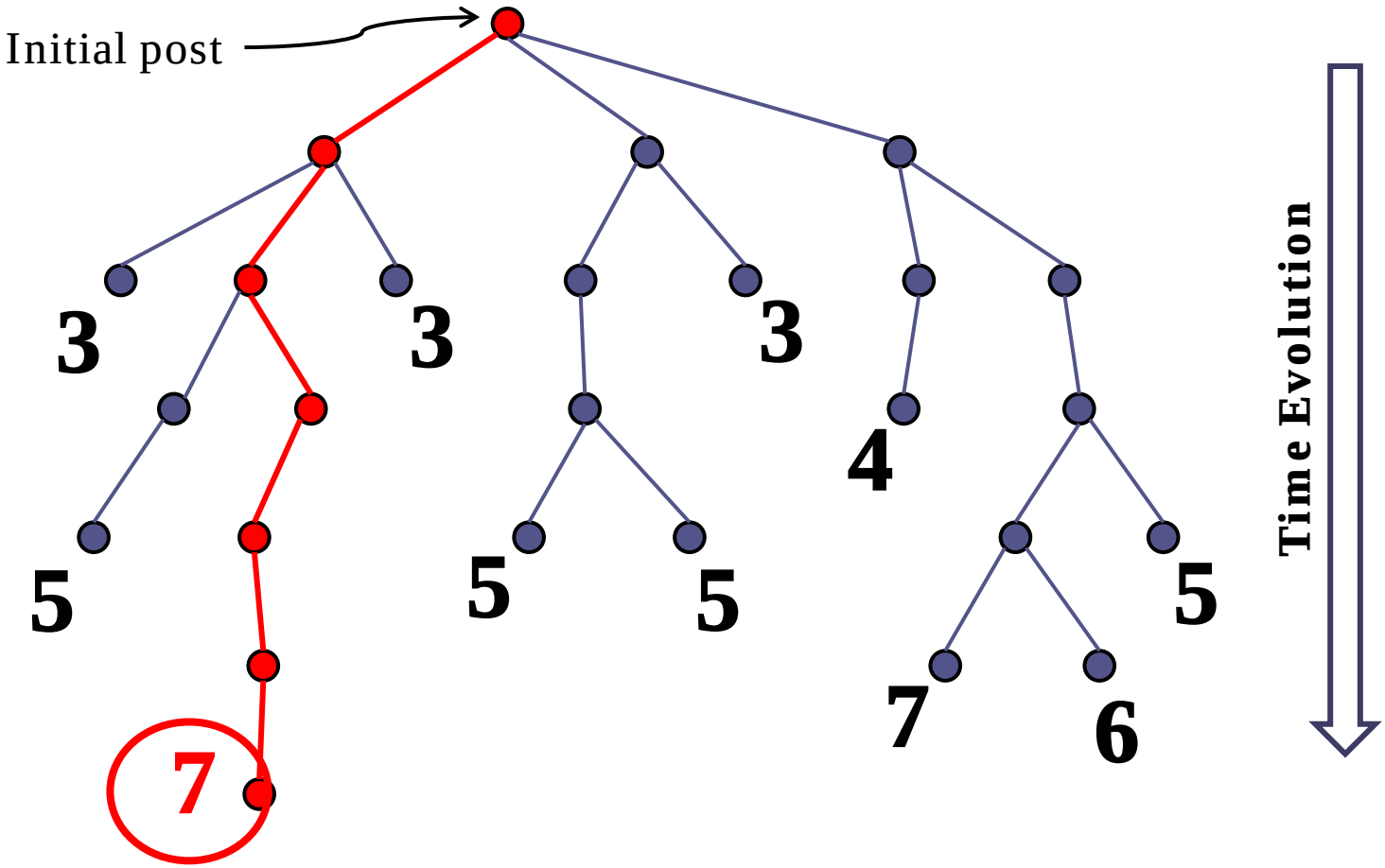
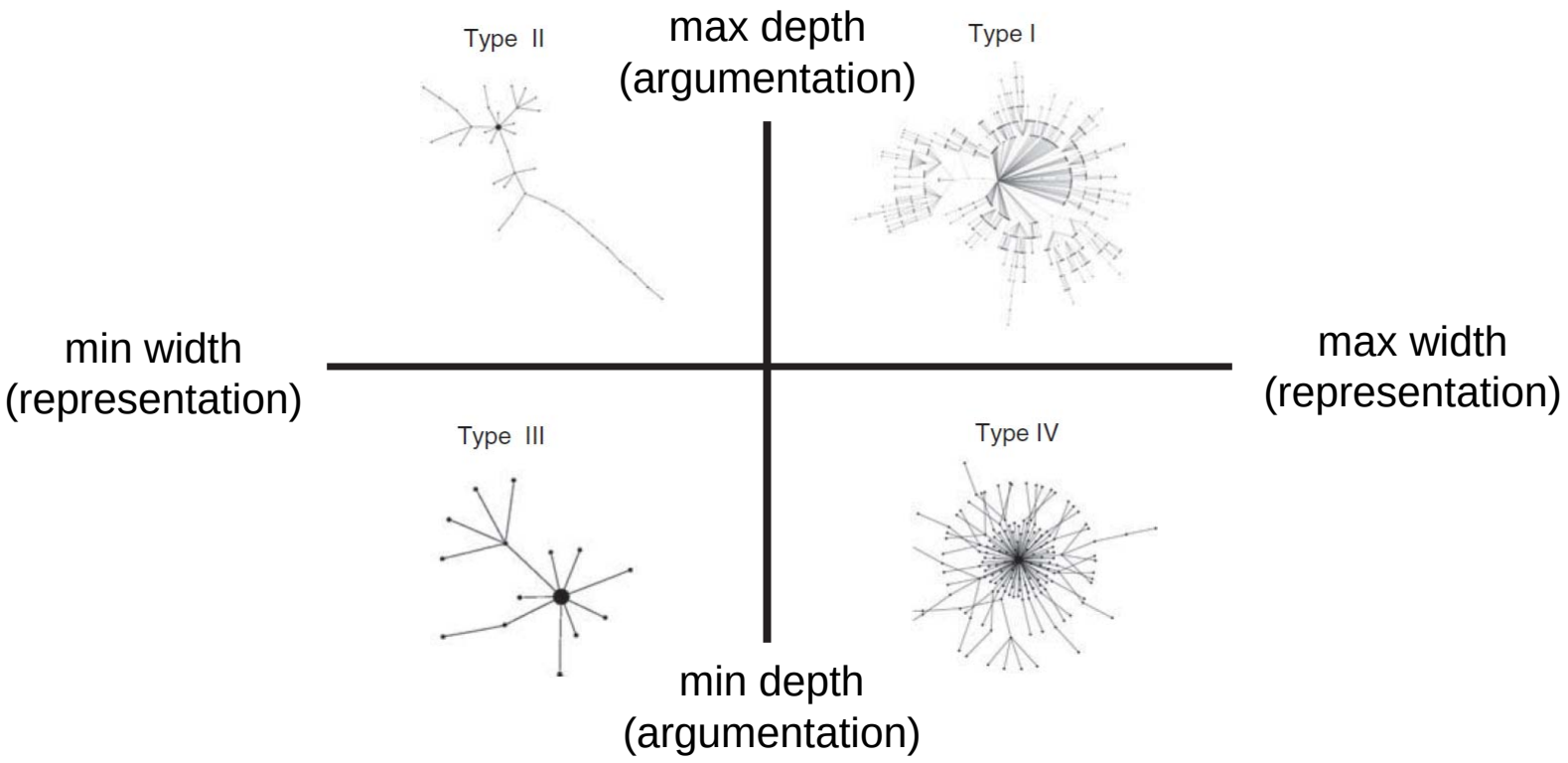


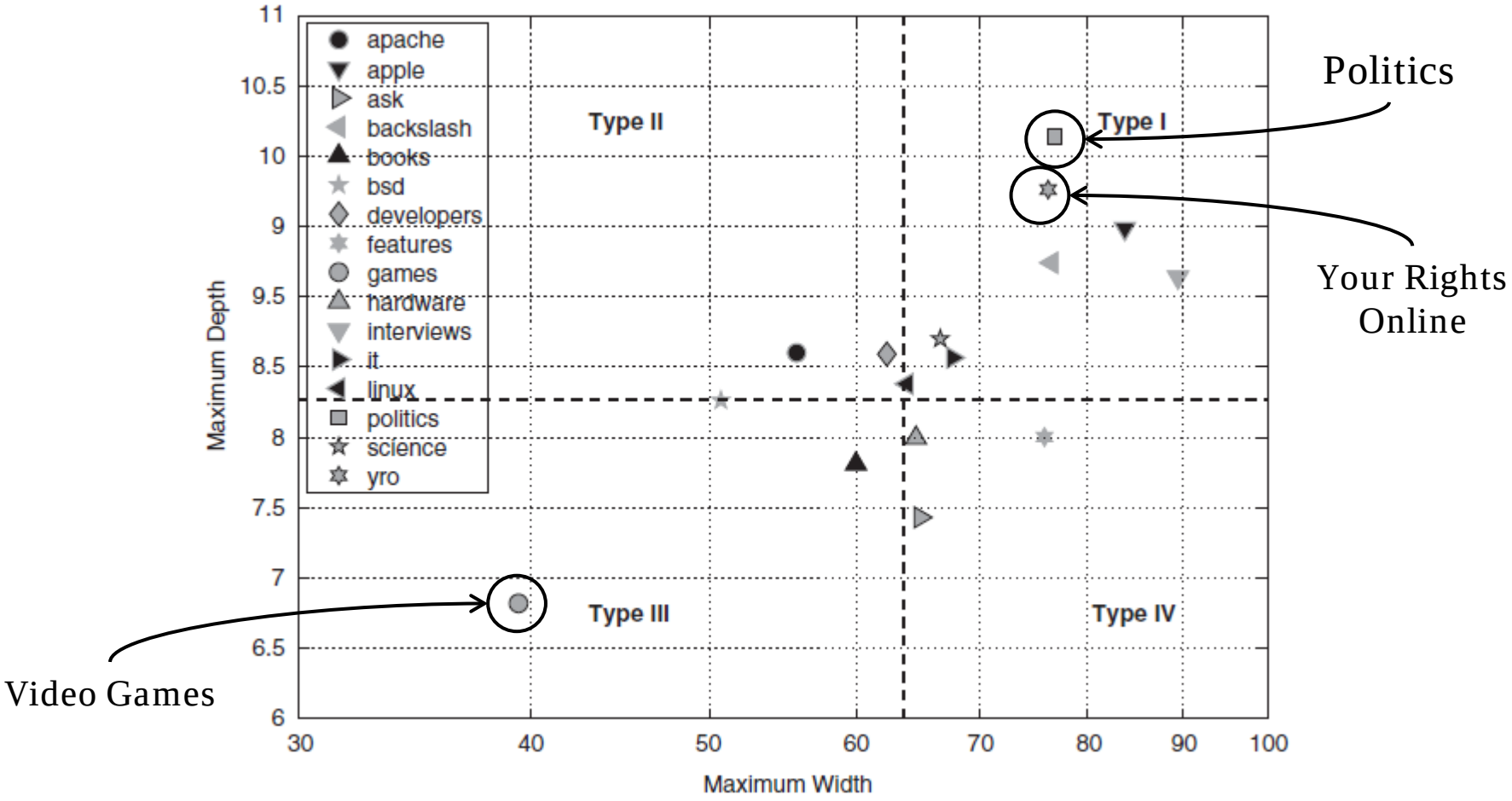
Preliminary Work

- ***Width-depth*** space for online discussion trees (Gonzalez-Bailon et al., 2010)



Preliminary Work

- Discussion categories in width-depth space



Research Question

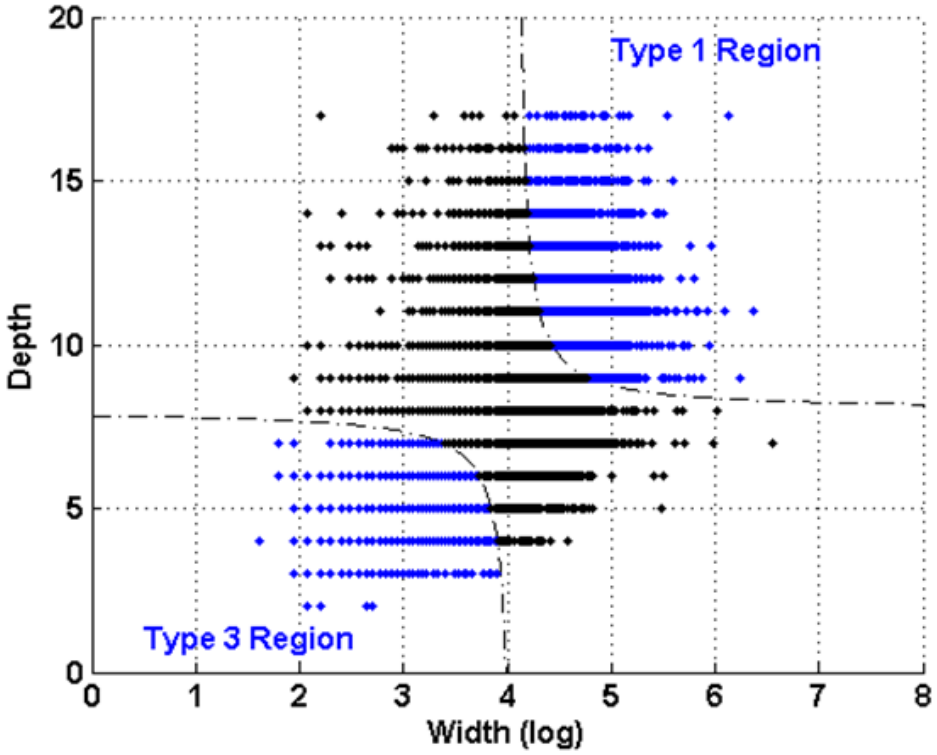
- There is a clear relationship between the structure of the resulting discussion tree and the topic category of the forum
- What is the driving force, from the content point of view, determining the structure of a discussion tree?
- Is there any emotional factor driving this relationship?

Measuring Emotional Load

- ANEW Lexicon: Affective Norms for English Language Words (Bradley and Lang, 1999)
- About 1000 English frequently used words scored along three different emotional dimensions
  - Valence: a proxy for happiness
  - Arousal: a proxy for excitement or agitation
  - Dominance: a proxy for the feeling of confidence

English Data Collection

- Discussion trees extracted from *slashdot.com*



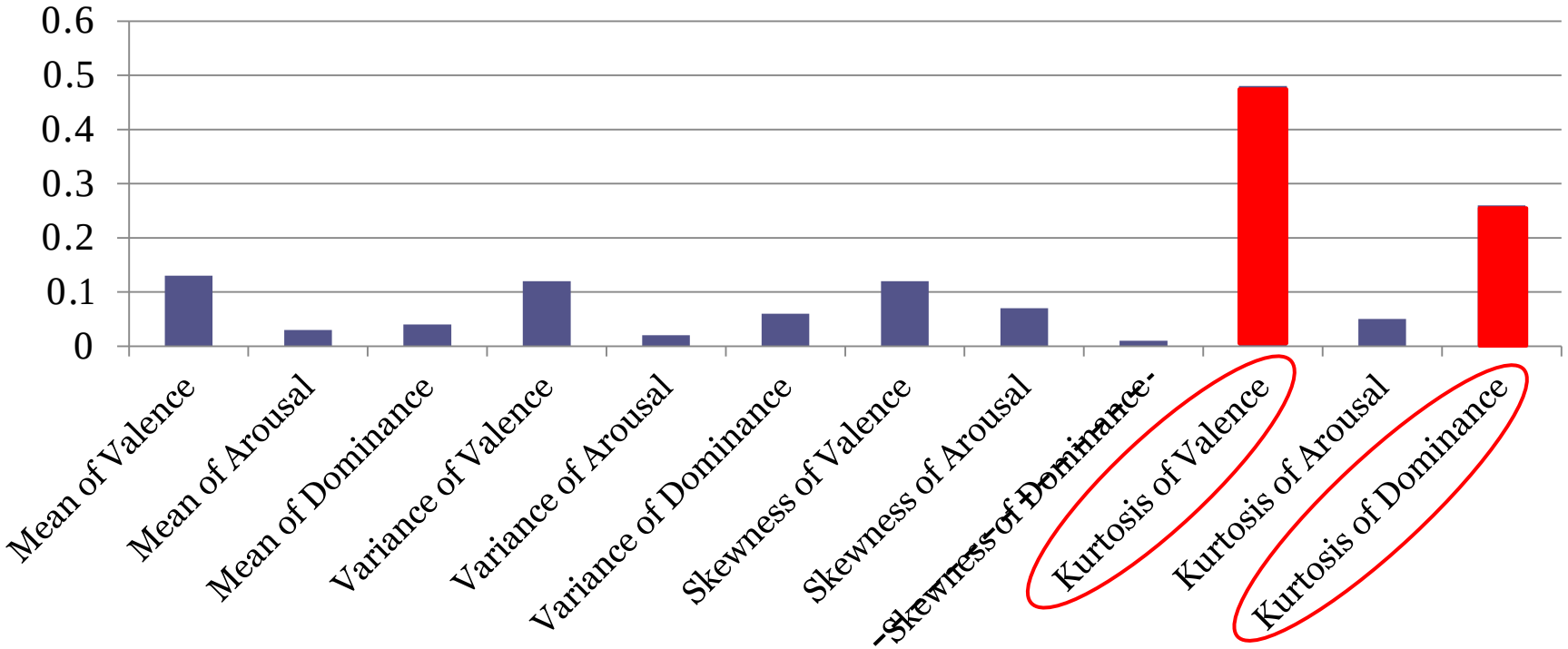
English Data Collection

- Discussion trees extracted from *slashdot.com*

Discussion Trees	**Samples**
Originally collected	10,012
Filtered collection	9,426
Filtered Type-I region	1,939
Filtered Type-3 region	1,831

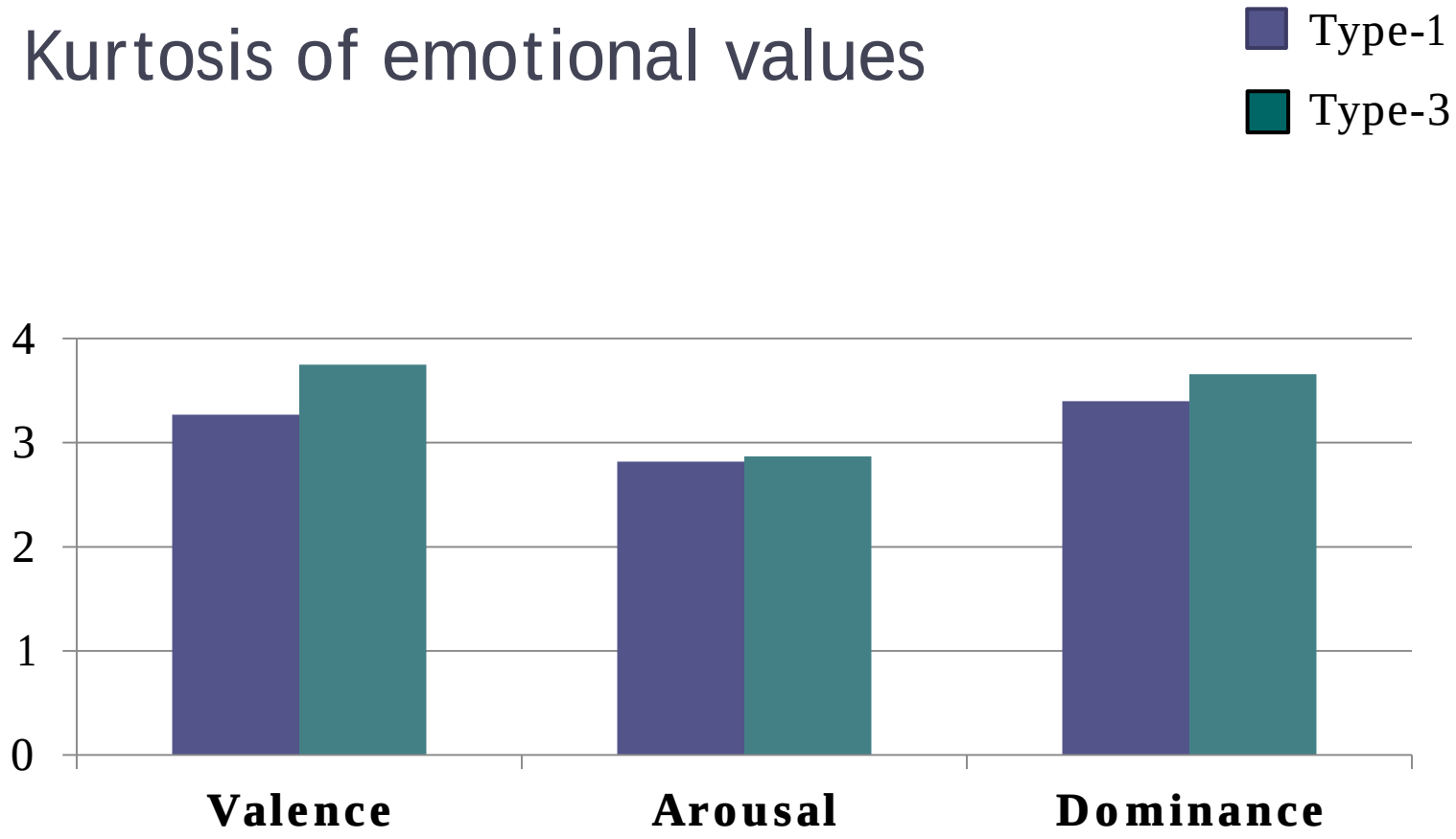
Experimental Results

- Absolute differences between emotional scores in Type-1 and Type-3 communications



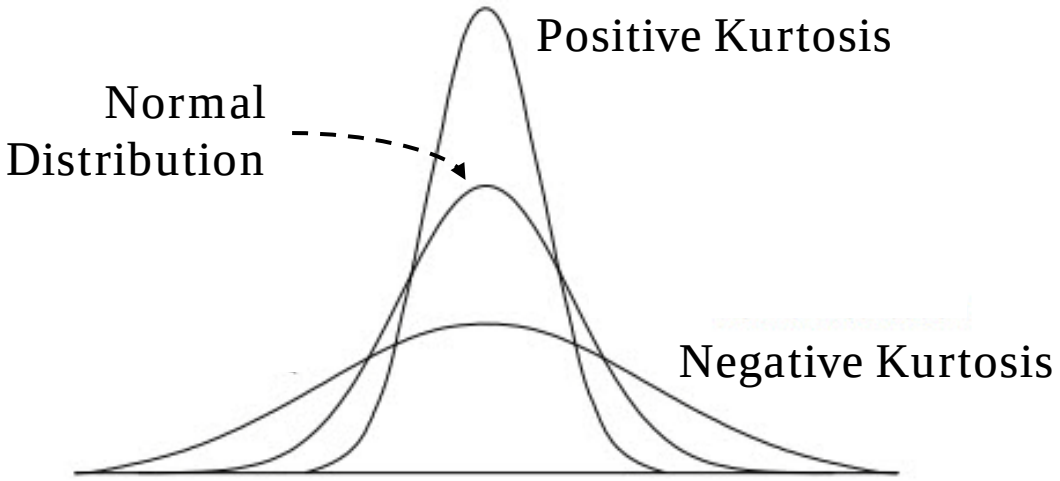
Experimental Results

- Kurtosis of emotional values



Interpretation of Results

- Kurtosis measures the “peakedness” of a distribution
- We observe a reduction of kurtosis in the case of Type-1 discussion trees



- ***This might suggest an increase on emotional polarization in the discussion trees!***

Conclusions

- We have explored the possible existence of emotional links between structure and content in online communications
- We have found significant differences between emotional scores in Type-1 and Type-3 discussion trees (in both English and Spanish)
- The kurtosis of valence and dominance are the main driving forces explaining this differences

References

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Grazie Danke Ευχαριστίες Dalu Obrigado

Thank You Köszönöm

Tack

Спасибо Dank Gracias

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