Formalizing Robert's Rules of Order
An Experiment in Formalizing Procedures for Group Decision Making

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0. Introduction

Relevance of my Lanjarón talk for present topic

- My Lanjarón talk: logics for defeasible argumentation + protocols for negotiation and group decision making
- This talk: protocol for group decision making

Relevance of research on argumentation for present topic

- Group decision making involves argumentation
- Mediation systems are better if they are based on good models of argumentation

1. The context: ZENO/GEOMED

These ideas underlie ZENO/GEOMED:
mediating group decision making

- Providing access to information via the WEB
- Discussion forum
  - Managing the argumentation structure: issues, claims, arguments pro and con ..
  - Informing participants about their rights, obligations and opportunities in a discussion
  - Regulating a discussion

- Slide met ZENO 'System architecture' (?)
- Slide met 'Layered dialectical model'
- Slides met Geomed windows.

2a. Implementing rules of order: general ideas

- Experiment:
  - Formalize Robert's Rules of Order (currently)
  - Implement the formalization
  - Integrate it with mediation system (advice + regulation)

Research questions

- What is a good 'ontology' of procedures for group decision making?
- How can mediation systems be extended with a procedural component?
  - What are good rules of order for asynchronous discussion?
  - How can the system enable users to violate the procedure?
  - How can the procedure be set aside when needed?
- How can we make a procedural component of mediation systems useful in practice?

2b. Work in progress: formalizing Robert's Rules of Order (RRO)

- RRO's world: meetings (with participants, proposals, ...)
- How the world changes: procedural acts and their effects
- Tasks of the implemented system: answer
  - Does an act violate the rules of order?
  - How does an act change the current state?
  - How can I obtain a certain procedural result?

Show the state change pictures

A formalization problem: the frame problem

- The problem: Some aspects of a state persist unless some event changes their value (e.g. pending question)

- How to avoid it:
  - the values of these aspects are recorded in a 'timeless' meeting record.
  - When an event triggers a change, the record is updated
  - When a value is needed, it is looked up.

In the knowledge base:

- $\texttt{Stated}(chair, x, s) \wedge \texttt{Debatable}(x) \Rightarrow \texttt{Open to debate}(x, s')$

- $\texttt{Open to debate}(x, s) \Rightarrow \texttt{Pending}(x, s)$

On the record:

$\texttt{Pending} := x$