

# Practical Reasoning and Proposing: Tools for e-Democracy

Douglas Walton

**Abstract.** It is shown how two tools developed in argumentation theory are useful for AI systems for electronic democracy (Atkinson, Bench-Capon and McBurney, 2004; 2004a) and more generally for formal dialogue systems representing deliberation. The novel part of this analysis is that it represents the speech of proposing as a small dialogue exchange in which one party practically reasons with another, based on premises that both are committed to, as collaborative participants in a deliberation dialogue. The structure of practical reasoning as a type of argument as analyzed in Walton (1990) is brought to bear, to bring out special features of the speech act of proposing that make it a nice fit with the formal framework for deliberation dialogue constructed by Hitchcock, McBurney and Parsons (2001).

**Key Words** argumentation; formal dialogue systems; deliberation; electronic democracy; argumentation schemes; speech acts.

Three dialectical adequacy conditions are formulated, based on the accounts of proposing in the argumentation literature (Kauffeld, 1998; Aakhus, 2005).

## 1. Dialectical Adequacy Conditions for Defining the Speech Act of Making a Proposal

*Condition 1.* In making a proposal, the proponent puts forward a statement (proposition) that describes an action and says that both proponent and respondent (or the respondent group, in a greater than 2 multi-agent case) should carry out this action. The putting forward of this statement is done in such a way that it commits the proponent to carrying out that action, and urges the respondent to take on commitment to it as well. The statement has the logical form of the conclusion of a practical inference. It is often described in the literature as a practical ought-statement. Thus the statement contains an action, and also expresses a kind of attitude toward that statement, saying essentially, “We ought to do it”.

*Condition 2.* The proponent puts forward the statement with the aim of offering reasons of a kind that will lead the respondent to become committed to it, either now or at some later point in the dialogue. These reasons are practical in nature. The premises that provide the reasons are directed to the goals of the respondent, and to actions that can be accepted by the

hearer as means to attaining these goals. The inference link between these premises and the conclusion (the statement to be proved by the proponent) is the argumentation scheme for practical reasoning.

*Condition 3.* As condition 2 makes clear, the proponent has essentially put forward an argument. As with putting forward any other argument in a type of dialogue like a deliberation or critical discussion, there is presupposed some initial doubt or conflict of opinions, and the job of the proponent is to overcome that doubt, while the job of the respondent is to express it. Thus the role of the respondent is to ask questions that cast the prudential reasonableness of the action in the statement into doubt, and to mount attacks (counter-arguments and rebuttals) against it.

Dialogue preconditions, defining conditions (offering a formal definition of the speech act), and post conditions are presented. According to the formal definition of the speech act of making a proposal, two parties are engaged in a deliberation dialogue, the proponent who puts the proposal forward, and the respondent, representing the agent or group of agents the proposal is directed to in the deliberation context. What is proposed is a proposition. According to the definition, the proponent proposes the proposition to the respondent if and only if (1) there is a set of premises that the proponent is committed to, that fit the premises of the argumentation scheme for practical reasoning (2) the proponent is advocating these premises, that is, he is making a claim that they are true or applicable in the case at issue, (3) there is an inference from these premises fitting the argumentation scheme for practical reasoning, and (4) the proposition is the conclusion of the inference. This definition performs the interpreter function in any formal dialogue system. It checks whether any move made in the dialogue fits a defined speech act or type of move that is recognized as legitimate.

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