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Arguing about preferences and decisions.

McBurney, Peter (ed.) et al., Argumentation in multi-agent systems. 7th international workshop, ArgMAS 2010, Toronto, ON, Canada, May 10, 2010. Revised, selected and invited papers. Berlin: Springer (ISBN 978-3-642-21939-9/pbk). Lecture Notes in Computer Science 6614. Lecture Notes in Artificial Intelligence, 68-85 (2011).

Summary: Complex decisions involve many aspects that need to be considered, which complicates determining what decision has the most preferred outcome. Artificial agents may be required to justify and discuss their decisions to others. Designers must communicate their wishes to artificial agents. Research in argumentation theory has examined how agents can argue about what decision is best using goals and values. Decisions can be justified with the goals they achieve, and goals can be justified by the values they promote. Agents may agree on having a value, but disagree about what constitutes that value. In existing work, however, it is not possible to discuss what constitutes a specific value, whether a goal promotes a value, why an agent has a value and why an agent has specific priorities over goals. This paper introduces several argument schemes, formalised in an argumentation system, to overcome these problems. The techniques presented in this paper are inspired by multi attribute decision theory. categories and subject descriptors I.2.4 [artificial intelligence]: knowledge representation formalisms and methods. general terms: design.

Keywords: argumentation; decision-making; practical reasoning; preferences
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