



Multi-Agent Deontic Logic  
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We present a generalization of Horty's stit-based deontic logic, which enables us to give formal interpretation of what an agent ought to do in the interest of a certain group of agents. This allows us to study group phenomena in deontic settings. We can represent different deontic notions such as egoism (when the interest group consists of only the agent himself), altruism (when the agent is not a member of the interest group), nihilism (when the interest group is empty), and utilitarianism (when the interest group consists of all agents) in the same formal system. We can interpret the logic in game-theoretical settings and provide characterising axioms for strategic games (where the outcome is determined by the actions of the agents), constant sum games (where the sum of the payoffs of all agent is the same regardless of the actions), and provide a general characterization which tells us when the interests of different groups coincide. By applying the logic to the Prisoner's Dilemma we gain formal insight into the different common sense intuitions that people have about this well-known problem. In short, we present a multi-agent deontic logic.

References:

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