

## TEAM REASONING

In decision theory, it is almost universally presupposed that agency is invested in individuals: each person acts on her own preferences and beliefs. A person's preferences may take account of the effects of her actions on other people; she may, for example, be altruistic or have an aversion to inequality. Still, these are *her* preferences, and she chooses what *she* most prefers. Opposing this orthodoxy is a small body of literature which allows *teams* of individuals to count as agents, and which seeks to identify distinctive modes of team reasoning that are used by individuals as members of teams. This entry explains the motivation for and general principles of team reasoning. It then presents the two leading theories of team reasoning, those of Michael Bacharach and Robert Sugden, which differ in important ways regarding: how group agency comes about, what happens when there is not common knowledge of group membership, and what the group agent should take as its goals.

### Team Reasoning

One motivation for theories of team reasoning is that there are games of cooperation and coordination that are puzzles for orthodox decision theory, in the sense that there exists some strategy that is at least arguably rational and that a substantial number of people play in real life, but whose rationality decision theory cannot explain and whose play it cannot predict.

		Player 2	
		<i>high</i>	<i>low</i>
Player 1	<i>high</i>	2, 2	0, 0
	<i>low</i>	0, 0	1, 1

Figure 1: Hi-Lo

One such puzzle is the game of Hi-Lo. In Hi-Lo, both (*high, high*) and (*low, low*) are *Nash equilibria*, each player has achieved the best possible payoff for herself given the action of the other player. Intuitively, it seems obvious that each player should choose *high* because both prefer the outcome of (*high, high*) to that of (*low, low*); but that 'because' has no standing in the formal

theory. Standard game theory has no way of recommending or predicting one equilibrium over the other

The source of the puzzle seems to be located in the mode of reasoning by which, in the standard theory, individuals move from preferences to decisions. In the syntax of game theory, each individual must ask separately ‘What should *I* do?’. In Hi-Lo, the answer to this question is indeterminate. Theories of team reasoning extend game theory to allow the players to ask ‘What should *we* do?’. In Hi-Lo, the answer to this question is surely: “Choose (high, high).”

The basic idea of team reasoning is that, when an individual reasons as a member of a team, she considers which *combination* of actions by members of the team would best promote the team’s objective, and then performs her part of that combination. It is still *instrumental practical reasoning*, where conclusions about what an agent ought to do are inferred from premises that include propositions about what the agent is seeking to achieve, but it allows that groups can be agents with group goals that provide their standards of success. When a group of people team reason, the rationality of each individual’s action derives from the rationality of the joint action of the team.

### **Bacharach’s Circumspect Team Reasoning**

Bacharach presents the most comprehensive, formal theory of team reasoning. For Bacharach, people team reason when they group identify and whether a particular player identifies with a particular group is a matter of ‘framing’. A *frame* is the set of concepts a player uses when thinking about her situation. In order to team reason, a player must have the concept ‘we’ in her frame. Bacharach proposes that the ‘we’ frame is normally induced or *primed* by games like Hi-Lo.

Although Bacharach proposes that some games increase the probability of group identification, he does not claim they *invariably* prime the ‘we’ frame. The ‘we’ frame *might* be primed but, alternatively, a player may see the game as one to be played by two separate individual agents. Bacharach models the psychology of group identification as a random process which, independently for each member of the group, determines whether or not that individual identifies with the group. Then an individual who group-identifies will maximize the expected value of the group payoff function given the probabilities that other group members fail to identify. This means that a player may find *ex poste* that she has team reasoned when the other player has not, leading to a worse outcome for herself than if she had not team reasoned - as sometimes happens in the experiments whose results Bacharach sought to explain.

### **Sugden’s Mutually Assured Team Reasoning**

On Sugden's account of *mutually assured team reasoning*, a person will not commit herself to team reasoning unless she has assurance that others will also act on team reasoning. Sugden uses a theoretical framework in which the central concept is *reason to believe*. To say that a person has reason to believe a proposition  $p$  is to say that  $p$  can be inferred from propositions that she accepts as true, using rules of inference that she accepts as valid. In mutually assured team reasoning, team members will not act on the results of team reasoning unless each has reason to believe of all the others that (1) they identify with the group and acknowledge the group payoff function as the objective of the group, and (2) they endorse and act on mutually assured team reasoning. So if Sugden's group members are not sure that they will all cooperate to achieve what they all take to be best for the group, then they will not team reason.

Because Sugden's team reasoners cooperate in a mutually advantageous enterprise, he would also constrain the group goal so that team reasoning is welfare increasing for its members, by their own individual lights.

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See also Collective Agents, Collective Goals, Collective Intentionality, Collective Rationality, Common Knowledge, Cooperation (Coordination), Group Identity, Social Ontology, Recent Theories of.

#### **FURTHER READINGS**

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