

Study finds even with rules, impartiality is almost impossible to obtain

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(Phys.org)—Obtaining impartiality in a competition among peers is a nearly impossible task when there is just one prize and everyone is in it to win, according to a new paper co-authored by economists from Rice University and Technion-Israel Institute of Technology. This finding applies even if there are rules for the competition, the researchers found.

The paper, "Impartial Nominations for a Prize," provides timely insights into how peer rankings and evaluations, such as [Internet search engines](#) or [university rankings](#), can be gamed and manipulated for self-interested purposes. It was co-authored by Hervé Moulin, the George A. Peterkin Professor of Economics in Rice's School of Social Sciences, and Ron Holzman, a mathematics professor at Technion, and published in the January issue of the journal *Econometrica*.

In their paper, Moulin and Holzman study nomination rules to award a prize among [peers](#), with the goal of finding reasonable impartial nomination rules. In their model, a group of peers must choose one person among them to receive a prize. Each person cares only about winning, not about who gets the prize if someone else wins. The authors explored the consequences of impartiality when each individual nominates one other person for the prize. They found that creating reasonable impartial nomination rules is a difficult, if not impossible, challenge.

On the positive side, they propose rules that eliminate incentives for an individual to manipulate the process and establish limits on the requirements to win the [prize](#) that apply equally to all individuals. One of these mechanisms is partitioning the individuals into two or more groups of at least three people and calling an individual a "local winner" if he is nominated by a majority of the members of his own group. The rule then selects a local winner with the largest support from nonlocal winners or a fixed default individual in case there is no local winner. On the negative side, they propose two additional properties that a reasonable rule should satisfy: The winner should always get at least one nomination, and an individual nominated by everyone else always wins. Then they show that no impartial rule can meet both properties.

The possibility of an impartial judgment is a cornerstone of modern theories of justice and an everyday phenomenon, the authors said. "In

the more mundane context of committees and elections, impartial nominations are a desirable but elusive ingredient of group decision-making," Moulin said. "When individual opinions are aggregated into a collective outcome, an individual may be tempted to corrupt his or her disinterested opinion, which influences the final decision, to serve selfish preferences. This may lead to a suboptimal decision. Avoiding such conflicts of interest is a tall order."

Provided by Rice University

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