Playing for the Planet

SCOTT BARRETT, the Lenfest-Earth Institute Professor of Natural Resource Economics and an expert in complex international negotiations, teaches game theory in his Global Collective Action class. Using a simple card game, Barrett helps his students understand the consequences of decision making in complex negotiations, like those involved in climate treaties, where each country’s actions depend on the actions of others.

Barrett begins the game by giving each student two cards—one red, one black. Each player who keeps the red card and turns in the black gets five dollars. Each player who turns in the red card receives just one dollar, but in this case everyone else in the group also receives one dollar. There is no talking allowed, and students must decide which card to hand in without knowing what the other students will do. “Reducing greenhouse gas emissions is like handing in your red card,” says Barrett. “Everyone benefits equally, but you’re paying a cost.” Typically, half of the students decide to keep their red cards the first time they play the game.

Barrett becomes interested in international negotiations on September 17, 1987. “That was the day the Montreal Protocol was adopted,” says Barrett. The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production of a number of ozone-destroying substances. “I was flummoxed, because the training I had in economics up to that point had taught me that cooperation like that didn’t happen,” says Barrett.

Cooperation among nations is essential for such consequential issues as avoiding nuclear warfare, improving public health, promoting sustainable economic development, and addressing the threats of climate change. “Climate change is the greatest collective action problem in human history,” says Professor Barrett. With each country wanting to pursue its own agenda, it is not an easy problem to address as a group, he adds.

When Barrett has his students play the black and red card game a second time, close to 85 percent think of the greater good of the group and hand in their red cards. “I’m teaching students how to change the rules of the game—they’re the next generation of decision makers, after all,” says Barrett.

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