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COMMENTARY

“The Exchange Game”: An Engaging Classroom Exercise for Teaching and Learning about Reciprocity and Altruism

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A glance at current textbooks suggests that the teaching of exchange theory—including reciprocity, redistribution, and market exchanges—remains a staple of introductory classes in cultural anthropology. Here, I share an activity I use to reinforce ideas like generalized and balanced reciprocity, altruism, cooperation, and entitlements. It’s a fun and fast game based loosely on the “prisoner’s dilemma” that supports active classroom learning of core anthropological concepts. I have played “The Exchange Game” in classrooms with as few as thirty students and in large lecture halls with more than 500 students. It takes about 25 minutes to play and discuss.

In the Exchange Game, each student pretends to be a farmer. In my classes, students produce pears or lettuce—but these food choices can be modified for local contexts. I tell the students that in their agricultural world, they grow a surplus of pears or lettuce and seek to acquire the other item through trade. I also indicate that trading partners know each other but are not related and are not well-known. Then, using rules of exchange in the imaginary world, listed below, students must trade their surplus with their neighbor to get what they need. They have the choice to offer in trade high-quality produce or low-quality produce from their own stores, but I ask them to assume that they might not know what they are going to get in return until after the exchange is over and an “inspection” has occurred. It turns out that offering good produce in trade is a reasonable strategy for success for both parties. But, sometimes, players give rotting produce in order to “get ahead”; this leads to a better individual result but a poorer shared result. In other words, players must decide whether to support the collective or individual advancement. As the game moves along, the modes of reciprocity shift as the student-farmers adapt their trading approach to the moves of their partner all while trying to ensure that their family does not go hungry.

In its traditional form, the prisoner’s dilemma asks individuals who committed a crime together to decide whether to betray each other. The decision each prisoner makes affects the length both prisoners will have to stay in prison, but neither prisoner knows

what the other decides. The prisoner's dilemma has been modified for various classroom exercises, often in economics (e.g., Holt and Capra 2000). Patrick F. Clarkin blogged about his use of the game to help his anthropology students learn about cooperation. In the context of his game, Clarkin concluded: "While the kindness of strangers is not completely within our control, we can also remember that we are also strangers to others. To them, it is our own willingness to cooperate that is out of their control. When two strangers let their guard down and see through possible distrust, good things can happen" (Clarkin 2014). Clarkin's game is worth reviewing fully.

Game Play

Game pieces: Each player requires fifty tokens and two game pieces. The tokens represent the produce that the student-farmers grow; I often use beans as tokens. The two game pieces are labeled "give rotting produce" and "give good produce" and "produce" is changed for the types of food players are exchanging (Appendix 1).

Setup: In small classes, I set up one plastic cup per student. Each cup contains fifty beans, with red pinto beans in half of the cups and white lima beans in the remaining cups. Then, I put the two game pieces (slips of paper) into each cup. I advise students to "suspend their disbelief," so that red beans become pears; the papers in the cup say "give rotting pears" and "give good pears." White beans become lettuce and the good lettuce and rotting lettuce slips are put in those cups. The game requires that every student have a cup, but since the students play in pairs, each student gets only one cup, red or white, representing only one type of produce.

In larger classes, it is impractical for me to bring the supplies. Instead, I ask students to come to class with the paper game pieces and fifty tokens. For the tokens, they bring items like coins or paper clips. Students who do not bring these items find they can make them quickly from paper. In both cases, students play in pairs at their seats.

Game Play: Students play in pairs. After having adopted the role of a farmer who grows either lettuce or pears, each student decides whether to give good or rotting produce to their trading partner. In the first time through the game, I require students to decide intentionally whether to give good produce or rotting produce—and to not tell their partner what they are giving in advance of the exchange. Like "rock, paper, scissors," each student puts one slip on the table simultaneously. Depending on what slips are put down, tokens are exchanged according to the following rules:

- If both players exchange good produce, they each get 3 tokens from the other person. Call it "Balanced Reciprocity."
- If both players exchange bad produce, they each get 1 token from the other person. Call it "Balanced Reciprocity" too.

- If one person offers good produce and the other offers bad produce, the person offering the bad produce gets 5 tokens from their partner and the person offering good produce gets nothing. Call it “Negative Reciprocity” or “Exploitation.”

Players then repeat the exchanges ten times and count up the total number of tokens received during the ten exchanges. That is the final score and one game is now complete, although students won’t know the consequences of acquiring a high or low number of tokens from their partner until I discuss the game after all play is finished. After students play the game once, they reset the tokens and play the game with ten exchanges again. This time, I tell students that they are permitted to change the rules as they wish, and most pairs do so after agreeing on the new rules.

Teaching the Game

Players start the game with fifty tokens because this is the maximum number of tokens that a player can win through game play. In the game-as-metaphor, this starting collection of tokens represents the amount of food in the system. But what matters most is how many tokens each player acquires through trade.

Playing with my rules requires students to make careful decisions about whether they will give rotting or good produce. When they change the rules, most students play randomly, not looking at which slip of paper they give the other person. In some cases, students begin to cooperate formally, agreeing in advance what kind of produce they will exchange. The changes students make are always teachable. It turns out that agreeing to cooperate ensures that both players will always get enough. Playing with intentionality shows that some people get ahead strategically; playing randomly reminds us that sometimes luck underscores exchange behavior.

Once the game is finished, I ask the class to consider several questions. I ask students, for example, if the scores are higher when they try to exchange equitably and cooperate. What happens to the scores when one partner tries intentionally to take advantage of the other person? I ask, to student amusement, if anyone feels badly when they acquire more than their partner? And, I always like to know how the rules are changed. In a couple of classes I have had students admit to the outright theft of their neighbor’s tokens!

In the discussion, I also state a threshold that a player needs to achieve in order to prevent hunger within their community or family. I tell the class that in Game 1, a player needs to get seventeen or more tokens to offset hunger. In my experience, seventeen tokens is fairly easy to achieve, regardless of the rules played. So this represents an unremarkable year on the farm. Cooperation between farmers helps, but it is not completely necessary to avoid hunger. In Game 2, a player must get twenty-two tokens to offset hunger. This is a very high threshold—a drought year—and if the farmer-students do not cooperate, both families fail. In short, the game implies that there is

enough food in the system but that patterns of exchange might not allow a group to flourish. The game shows that hunger can follow bad luck, an unexpected drought, or the unfavorable intentions of a trading partner.

Cooperation, Spite, Exploitation, and Altruism

The Exchange Game reminds students that reciprocal exchanges help people avoid the risk of trying to produce alone all that one needs. Social obligations and responsibilities are implied in the game play, particularly when students realize that their decisions affect others. But the game also shows that inequality is a consequence of trading relationships, too. Sometimes, your partner may not have your best interests at heart, perhaps because in their community having a lot is tied to status or standing.

My discussion of the game concludes with a review of the extreme outcomes of the game. There are four reasonable models for understanding the choices that surround the exchange of goods and services (Table 1). Cooperation, represented in the extreme as an agreement between partners to always exchange good produce, results in both parties receiving thirty tokens. This is balanced reciprocity. These partners always finish with scores high enough to avoid hunger. Spite, like cooperation, is a kind of balanced reciprocity; in the game, it likely requires an agreement to always give bad produce. The game is not a perfect metaphor for human spitefulness, in part because it does not take into account what beyond goods is gained or lost by spitefulness. A question for students emerges, however: "under what circumstances do people try to hurt others by hurting themselves?"

The other two scenarios exemplify unbalanced reciprocity. Theft or exploitation, where every time one student gives good produce and receives rotting produce, results in a massive win for one person and complete failure for the other. Students understand the possibility of being ripped off. Altruism and related ideas like charity and redistribution – giving something of your wealth to benefit others – are also identified clearly in the game and on the chart. This type of behavior is common within families and students see that. Introducing altruism this way also allows me to talk easily about the work of biological anthropologists who have been studying altruism as a human practice for many years (e.g., Fehr and Fischbacher 2003; Molina, et al. 2017).

Table 1. Summary of Exchange Outcomes

Strategy	Maximum Score in Game for Each Partner (Giver-Receiver)	Exchange Model		Notes
Cooperation	30-30	+,+	win-win (balanced)	Partners agree to exchange good produce only; both win.
Spite, selfishness	10-10	-,-	lose-lose (balanced)	Partners "agree" to rip each other off or to harm each other; both lose. Why do this?
Theft, exploitation	50-0	+,-	win-lose (unbalanced)	One partner gives bad produce and the other gives good produce every time. One loses and the other wins.
Altruism, charity, redistribution for status gain	0-50	-,+	lose-win (unbalanced)	One partner gives good produce and the other gives bad produce every time. One wins, the other loses, or appears to lose.

I am sure there are many ways to modify this game. I would love to hear what you do with it. My students, who in many ways are the true authors of this game, would love to hear, too.

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Appendix 1: Game Pieces

Give good pears	Give rotting pears
Give good lettuce	Give rotting lettuce