

## M O D U L E 1

# Dynamics of Competition and Cooperation

### OVERVIEW

In *The Evolution of Cooperation*, Robert Axelrod challenges us to think carefully about the dynamic between competition and cooperation:

Under what conditions will cooperation emerge in a world of egoists without central authority? The question has intrigued people for a long time. And for good reason. We all know that people are not angels, and that they tend to look after themselves and their own first. Yet we also know that cooperation does occur and that our civilization is based on it. But, in situations where each individual has the incentive to be self-ish, how can cooperation ever develop? [p. 3].

This question is central to conflict resolution, and we begin our course by asking you to plunge right into playing “The Prisoner’s Dilemma,” an experiential point-scoring game that explores this issue.

Your class will divide into teams. Your team will then exchange messages with another team through a messenger. You will exchange seven messages, and each one will result in a score, which will accumulate

over the course of the game. Your goal is to gain maximum benefit for your team. Benefit is defined by points.

Read the following instructions carefully. Your team will have approximately ten minutes to read these instructions, talk about your strategy, and decide on the first message to send.

If you have played this game before, you may play it as an observer. Please let the trainer know if this is the case.

## **THE PRISONER'S DILEMMA: INSTRUCTIONS**

The group of people you are sitting with will undertake a series of transactions with a similar group seated in another room. You might think of these as simulations of the transactions that go on between governments, companies, organizations, departments, family units, or individuals.

In this simulation, one of the groups will be called the Green Group, and the other will be called the Blue Group. (Several Green Groups and Blue Groups may be at work at the same time, but you will be dealing with only one of these other groups.)

In a series of transactions between the Green Group and the Blue Group, *your objective will be to gain as many points as you can.* The results of these transactions will be represented by an accumulating numerical sum that will depend upon what each of the two groups decide to do in a transaction.

In each of the transactions, each group will decide on a message to send to the other group. A message is one of these three sets of symbols:

XX or XY or YY

In formulating a message, neither of the groups will know what the other has decided to send. Except as specified, there will be no communication between the groups. An impartial “messenger” who is not a member of either group will carry the messages between the groups. Each round of messages will be sent simultaneously, not one in reaction to the other. Several minutes will be allowed for each group to decide upon its message in each transaction.

When the messages have been exchanged, the two sets of two symbols will be combined to form a four-letter transaction that determines the value of each group’s contribution to the transaction. Calculate the value of the transaction for your group from the four letters in the two messages, as follows:

<i>If the combined transaction is:</i>	<i>Then your group’s result is:</i>
4 Xs	– 10 for each X in <i>your</i> group’s message
3 Xs and 1 Y	+ 10 for each X in <i>your</i> group’s message – 30 for each Y in <i>your</i> group’s message
2 Xs and 2 Ys	+ 20 for each X in <i>your</i> group’s message – 20 for each Y in <i>your</i> group’s message
1 X and 3 Ys	+ 30 for each X in <i>your</i> group’s message – 10 for each Y in <i>your</i> group’s message
4 Ys	+ 10 for each Y in <i>your</i> group’s message

For example, if the Green Group sent XX as a message, and the Blue Group sent XY as a message, the combined messages would form the transaction XXXY.

The result of XXXY is that each group gets a +10 for each X in *its* two-letter message, and –30 for each Y in *its* two-letter message.

The Green Group, having sent XX as its message, receives a value of +20 in this transaction: (+10) for each X = (+20).

The Blue Group, having sent XY as its message, receives a value of –20 in this transaction: (+10) for the X and (–30) for the Y = (–20).

The exception to the “no communication” rule is that, prior to the exchange of messages in the fourth and seventh rounds, additional time will be allotted for single representatives from each group to meet (if the groups agree to do so) to discuss whatever group members have instructed these representatives to talk about. The meeting of these two representatives will be at some place out of the sight and hearing of the Green Group and the Blue Group.

After the meetings of representatives have been held (if they are held), the groups will exchange messages in the usual manner. However, the point values of those two transactions will be increased. As the scoring table in your instructions indicates, you will multiply the points you receive in round four by 5 and the points you receive in round seven by 10. This will happen whether or not a meeting between representatives has occurred.

You will be given a brief time period to read these instructions and discuss them with the members of your group. No additional instructions or interpretations of these instructions will be given.

Your group, or your group's representative to the discussions, may be watched by an “observer.” This person may also watch the work of the other group. The observer is not permitted to discuss his or her observations on the simulation until the general discussion period at the end of the exercise.

Please adhere to the time limits in this exercise.

You can use the following table to keep track of each round of the game.

<b>Prisoner's Dilemma Scoring Table</b>						
Green Group Results				Blue Group Results		
Transaction	Green Group	This Round	Cumulative	Blue Group	This Round	Cumulative
	Message			Message		
#1						
#2						
#3						
#4		×5			×5	
#5						
#6						
#7		×10			×10	

### Observer Instructions

Keep notes on how decisions are made in the group you are observing, and what attitudes develop about the other group. Be descriptive and impersonal—not judgmental. Watch for points in the discussion at which shifts in attitude occur. Here are some things to watch for:

1. Did the group (or any of its members) want to compete with the other group, or cooperate with it?
2. Were the terms *win*, *score*, or other words that might connote a competitive attitude used? When did they begin to appear (or disappear)?
3. Was there a need felt to keep a record of the “results” of the other group’s transactions?
4. Was there an effort to clarify objectives? How did those people appear to feel whose effort to define objectives failed?
5. Was there anyone in the group who worked to change the group’s decisions in the direction of cooperation (or competition)? How were those people treated by the group?
6. Was there leadership in the group? Did it shift as the group’s objectives shifted?
7. Did anyone suggest that the best result might be the highest *combined* “score” of the two groups?

You may want to accompany the group’s representative (or negotiator) to his or her meeting with someone from the other group. However, you may want to remain with the group during this period of special communication. Sometimes, during the additional time provided, the group’s attitude shifts. This can leave the representative feeling “left out” when he or she returns, or with promises made to the other side that cannot be kept. It is not unknown for the group to act in a way that leaves their negotiator feeling “double-crossed.” In any event, you may want to observe these things:

1. What happened at the negotiations with the other group, or as a result of those more direct communications?
2. Did the group give its negotiator any instructions? Did they trust their negotiator and give him or her power to adapt or come up with a new direction without consulting them?

There can be many other dynamics in this simulation. Watch for them. Keep notes on them.

## **THE PRISONER'S DILEMMA: WHAT HAPPENED?**

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*Note:* Please read this *after* you have completed the “Prisoner’s Dilemma” exercise.

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“The Prisoner’s Dilemma” is an old story: Two partners suspected of committing a crime are arrested and placed in separate cells. Each is told that if he informs on the other, he will be treated well, but if he does not rat on the other one, the police will throw the book at him. The dilemma is whether to compete or cooperate with the prisoner in the other cell, by informing or keeping quiet.

During this game you probably experienced feelings of anxiety, mistrust, vulnerability, and competitiveness. You may also have felt the satisfaction—even relief, perhaps—of gaining mutual cooperation in establishing a YY pattern. You might also have felt somewhat nervous about someone from your team representing you in negotiations with the other team. If there was an agreement reached to send Ys, you may have felt tempted to convince your team to rack up points by sending Xs in the last round, thus betraying the other team. If you were the negotiator,

you may have felt the tension between wanting to be tough in representing your team and wanting to be cooperative with the other team.

Throughout the exercise, a key question you might have asked yourself is, How can we get the other team to send us Ys? Put differently, How can we get others to cooperate with us? Being able to answer this question is of obvious importance for managers and leaders.

The “Prisoner’s Dilemma” exercise has been the focus of so much study because of the similarity of its dynamics to those of so many intergroup interactions in the real world. We want trusting, mutually cooperative relationships, and these relationships help serve our substantive goals. Yet by acting in a trusting, cooperative manner, we are vulnerable to those who would be aggressive at our expense. The principles discovered through this exercise can help managers and leaders gain others’ cooperation without putting themselves in an excessively vulnerable position.

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## **TRAINER'S PRESENTATION**

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### **STEPS FOR BUILDING TRUST**

- Communicate
- Take chances
- Be consistent
- Clarify your goals
- Define the team in broad terms
- Pay attention to in-team conflict
- Keep your word

## ANALYSIS OF PRISONER'S DILEMMA

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	XX	XY	YY
XX	-20 -20	+20 -20	+40 -40
XY	-20 +20	0 0	+20 -20
YY	-40 +40	-20 +20	+20 +20

## **PRINCIPLES DERIVED FROM PRISONER'S DILEMMA EXERCISE**

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- Start cooperatively
- Be provokable
- Be forgiving
- Keep your strategy simple
- Put forth conciliatory gestures
- Eliminate envy

## POINTS TO REMEMBER

- In a team setting, we have choices about how we respond to one another.
- Returning an XX may get someone else's attention, but may also escalate the conflict.
- Sending a YY may suggest a willingness to cooperate or may be an invitation to someone else to take advantage of us.
- Sending a mixed message might be a way to demonstrate consequences without escalating the conflict or may simply be confusing.
- If the goal is to gain the cooperation of the other side, it is important to think carefully about your actions and the response you hope to receive from them. It is also important that you communicate clearly about your intentions, particularly when you feel your actions are misinterpreted or misunderstood.
- You should also indicate when you feel that you are being taken advantage of or have been provoked. If this happens, you should be willing to further communicate about your experience, be open to others' perspectives on what happened, and take the appropriate steps to develop the kind of relationship you are seeking.

## RECOMMENDED READING

Axelrod, R. *The Evolution of Cooperation*. New York: Basic Books, 1984.