

ECO 199 – GAMES OF STRATEGY  
Spring Term 2004  
PRECEPTS WEEK 9 – April 5-6

**IMPORTANT GENERAL RULES:**

- [1] No communication is allowed, whether by players or kibbitzers, while each game is being played.  
[2] The winnings or losses of this whole session will be settled with individuals later and privately; others will not be able to know how much any one player wins.

**Game 1 : Escalation**

This is a game played by 10 players. Each gets a slip of paper, with space to write your name, and two letters, C and D, printed. Each player writes his/her name, and circles one of the two letters. The slips are collected, and payoffs assigned as follows.

When the numbers making the two choices are:		The payoff is: to each player choosing	
C	D	C	D
0	10	---	\$1.25
1	9	\$0.25	\$1.50
2	8	\$0.50	\$1.75
3	7	\$0.75	\$2.00
4	6	\$1.00	\$2.25
5	5	\$1.25	\$2.50
6	4	\$1.50	\$2.75
7	3	\$1.75	\$3.00
8	2	\$2.00	\$3.25
9	1	\$2.25	\$3.50
10	0	\$2.50	---

## Game 2 : Fehr's Fair

Only those who chose C in Game 1 have any action to perform in Game 2, but all 10 of those players get a slip for Game 2 to preserve anonymity.

You will recognize that Game 1 was a multi-person prisoners' dilemma. The group's total payoff would be maximized by everyone choosing C. But every player, by choosing D, stands to gain an extra dollar, with the consequence that the winnings of each of the other 9 players go down by 25 cents, that is, the other 9 get \$2.25 less in total.

In Game 2, the C-choosers of Game 1 have the opportunity to punish the D-choosers, but at a cost to themselves. If you were a C-chooser, you can offer to reduce your own winnings by any sum. I will then reduce the aggregate winnings of the D-choosers by three times the aggregate amount of the own reductions offered by the C-choosers, but stop at zero. For example, suppose there are seven C-choosers and three D-choosers, so the winnings of Game 1 are \$1.75 for each C-chooser and \$3.00 for each D-chooser. Suppose each C-chooser offers to take a reduction of 50 cents. Then the total reductions taken by the C-choosers amount to \$3.50. That means reducing the aggregate winnings of the six D-choosers by \$10.50, so the reduction for each is \$3.50. This being larger than their Game 1 winnings, those winnings are now reduced to zero. And each of the seven C-choosers ends up with  $\$1.75 - \$0.50 = \$1.25$ .

Write your name on the slip, and if you were a C-chooser in Game 1, fill in the blank in the statement saying what reduction you are willing to take from your own Game-1 payoff to punish the D-choosers of Game 1.

### Game 1: Escalation

Your name:

C

D

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### Game 2 : Fehr's Fair

As a C-chooser in Game 1, I am willing to take a reduction of \_\_\_\_\_ in my own payoff to punish the D-choosers of Game 1.

Your name

### Game 3 : WIN-AS-MUCH-AS-YOU-CAN

1. This game is played by four players. Each gets a “Score card”. On the top right of your card, write your name.

2. There are seven rounds. In each round, you circle the X or the Y in the column headed “Your Pick” for that round. You have 15 seconds in each round to make your choice. In each round, when all players have made their choices, the four score cards are collected by the referee, the pattern of X’s and Y’s for that round is tallied, and points are awarded according to the following table. Note that in each round, your point score depends not just on your choice, but also on what the others have chosen in that round. Then each player gets his/her card back with the group pattern and his/her own point score for that round indicated. Then the next round is played.

Choices of group as a whole	Points for each	
	X-picker	Y-picker
4 X’s	- 1	Not relevant
3 X’s, 1 Y	1	- 3
2 X’s, 2 Y’s	2	- 2
1 X, 3 Y’s	3	- 1
4 Y’s	Not relevant	1

3. Round numbers 3, 5, and 7 are bonus rounds. Whatever you win or lose on round 3 is multiplied by 2, that on round 5 by 3, and that on round 7 by 5.

4. Normally no talking is allowed. But before each bonus round, the players will have two minutes to get together and confer among themselves. Then they will return to their seats and make their choices for that round.

5. The name of the game is “win-as-much-as-you-can”. Your goal is to amass for yourself as many points as possible, regardless of how well (or poorly) the other three do. At the end of the seven rounds, your point total (algebraic, that is netting out the negatives from the positives) will be calculated. If this is positive, you will get 20 cents for every point. If negative, you will pay 10 cents for every point.

6. The maximum that you can win is \$8.40 and the most you can lose is \$4.20 . Usually the amounts, especially the losses, are smaller. We will settle the winnings and losses later in the week.

### Game 3 : Win-as-much-as-you-can

#### SCORE CARD

Your name:

Round	Bonus?	Your Pick	Group pattern	Your point score (+ or -)
1	no	X    Y	X's    Y's	
2	no	X    Y	X's    Y's	
3	× 2	X    Y	X's    Y's	
4	no	X    Y	X's    Y's	
5	× 3	X    Y	X's    Y's	
6	no	X    Y	X's    Y's	
7	× 5	X    Y	X's    Y's	
Net Total				