

TWO-PERSON NON-CONSTANT-SUM GAMES Prof. Richard B. Goldstein

- [1] **Prisoner’s Dilemma** Two armed robbers are captured and are awaiting trial for their crime. The D.A. is not sure if there is enough evidence to convict them. Each is told:

If only one of you confesses, then that person will go free and the other will be convicted and given a 20-year sentence. If you both confess, then both of you will be given 5 years. If neither of you confesses, then you both will be charged with misdemeanors and receive 1 year each.

		Payoff to Prisoner #1	
		#2	
		Confess	Don't Confess
#	Confess	-5	0
1	Don't Confess	-20	-1

		Payoff to Prisoner #2	
		#2	
		Confess	Don't Confess
#	Confess	-5	-20
1	Don't Confess	0	-1

- [2] **Columbia University Experiment**

		Payoff to Player #1	
		#2	
		Black	Red
#	Black	\$3	\$0
1	Red	\$4	\$1

		Payoff to Player #2	
		#2	
		Black	Red
#	Black	\$3	\$4
1	Red	\$0	\$1

	1	2	3	4	5	6	7	8	9	10	Total
My Play	B	B	B	B	B	R	B	B	B	B	
Opponent	B	B	B	B	B	B	R	B	B	B	
Payoff to me	3	3	3	3	3	4	0	3	3	3	\$28

- [3] **Corporate Dilemma** Two retailers each control about one half the market – AMART controls the East and BMART controls the West. Outcomes of expansion are as follows:

Payoff to each are shown			
		BMART	
		Expand	Don't Expand
A M A R T	Expand	Twice the number of stores and employees. Same Total Revenue. Profit Shrinks for both.	AMART grows BMART out of business
	Don't Expand	AMART out of business BMART grows	Status Quo