Feedback — In-Video Quizzes Week 7

You submitted this quiz on **Wed 20 Feb 2013 12:47 PM CET**. You got a score of **2.00** out of **2.00**.

Question 1

7-4 Analyzing Bayesian Games

In the following two-player Bayesian game, the payoffs to player 2 depend on whether 2 is a friendly player (with probability p) or a foe (with probability $1-p$). See the following payoff matrices for details.

Friend	Left	Right
Left	3,1	0,0
Right	2,1	1,0

with probability p.

Foe	Left	Right
Left	3,0	0,1
Right	2,0	1,1

with probability $1-p$.

Player 2 knows if he/she is a friend or a foe, but player 1 doesn't know. If player 2 uses a strategy of Left when a friend and Right when a foe, what is true about player 1's expected utility?

Your Answer		Score	Explanation
b) It is $3p$ when 1 chooses Left;	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

(b) is true.

- If 1 chooses Left, with probability p player 2 is a friend and chooses Left and then 1 earns 3, and with probability $(1-p)$ player 2 is a foe and chooses Right and then 1 earns 0. Thus, the expected payoff is $3p+0(1-p)=3p$.

Question 2

7-5 Analyzing Bayesian Games: Another Example

Consider the conflict game:

Strong	Fight	Not
Fight	1,-2	2,-1
Not	-1,2	0,0

with probability p

Weak	Fight	Not
Fight	-2,1	2,-1
Not	-1,2	0,0

with probability $1-p$

Let p^* be the threshold such that **player 1 fights when strong and doesn't fight when weak** then: if $p > p^*$, player 2 prefers 'Not'; if $p < p^*$, player 2 prefers 'Fight'. For instance, in the lecture p^* was 2/3.

What is p^* in this modified game? (Hint: Write down the payoff of 2 when choosing Fight and Not Fight. Equalize these two payoffs to get p^*):

Your Answer		Score	Explanation
c) 2/3	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

(c) is true.

- Conditional on 1fighting when strong and not fighting when weak, the payoff of 2 when choosing Not is $-1p + 0(1-p)$ and the payoff of 2 when choosing Fight is $(-2)p + 2(1-p)$.
- Comparing these two payoffs, 2 is just indifferent when $-1p + 0(1-p) = (-2)p + 2(1-p)$, thus $p^* = 2/3$, above which 2 prefers Not and below which 2 prefers to Fight.