

## ***STRATEGIC GAME THEORY FOR MANAGERS***

### *Problem Set 3*

*Note: this is individual work. Make any economic assumptions you think necessary, but make them explicitly. You may talk to fellow students about this, but **do not copy** others' work.*

1. Both threats and promises can be used to try to influence how another player acts in a strategic situation. State whether the following is true or false and explain why. “One of the differences between issuing a threat and issuing a promise is that there may be some doubt about whether the issuer will carry through on a threat (because doing so hurts her as well as the other player) but there will never be any doubt about whether the issuer will carry through on a promise (because doing so helps her as well as the other player).”

2. A reviewer of Peter Robinson’s memoir of becoming an MBA (*Snapshots from Hell: The Making of an MBA*, NY: Warner, 1995) writes:

Mr Robinson pretty much concludes that business schools are a sifting device—M.B.A. degrees are union cards for yuppies. But perhaps the most important fact about the Stanford business school is that all meaningful sifting occurs before the first class begins. No messy weeding is done within the walls. “They don’t want you to flunk. They want you to become a rich alum who’ll give a lot of money to the school.” But one wonders: If corporations are abdicating to the Stanford admissions office the responsibility for selecting young managers, why don’t they simply replace their personnel departments with Stanford admissions officers, and eliminate the spurious education? Does the very fact of throwing away a lot of money and two years of one’s life demonstrate a commitment to business that employers find appealing?

What answer to these two questions can you give based on our analysis of strategies in situations of asymmetric information?

3. Kit (♂) wants to obtain a restaurant franchise from Jill (♀), the franchisor.  
(20) Jill has another franchise opportunity that would definitely earn her \$20,000; but Kit gets nothing if Jill doesn't allow him to obtain the franchise. After Jill has signed Kit up (if she does), Kit can choose to set up a restaurant with up-market décor or a restaurant with a simple décor, but once it's open Kit can't change the style. Jill has no direct choice in the décor, and cannot bind Kit to a decision on it.

The neighbourhood chosen for the restaurant has a 25% chance of getting poorer, in which case Jill would get no return from an up-market restaurant, and only \$16,000 from a simple restaurant. If the neighbourhood stays well-off (a chance of 75%), Jill would get return of \$40,000 from an up-market restaurant, and only \$8,000 from a simple one.

Kit, however, sees things differently, and apparently marches to the beat of different drummer: he gets utility from a mismatched restaurant. When the neighbourhood is well-off, he gets 9 units of utility from a simple restaurant, and only 6 units from an up-market one. When the neighbourhood is poorer, he get 18 units of utility from an up-market restaurant, and only 3 from a simple restaurant. All the above is common knowledge.

- a. Plot the game tree and the expected payoffs if no-one can tell whether the neighbourhood will stay well-off or become poorer until after the restaurant is built. What will Kit choose? What will Jill choose? Explain, including whether their choices make sense.
  - b. Do the same if Kit knows with certainty what the neighbourhood will become before he starts the restaurant, while Jill remains ignorant, although she knows that he knows. What will Kit choose? What will Jill choose? Explain.
4. Magnacorp's board has funds for internal investment, and every so often  
(6) asks each of its eight divisions to make a pitch in front of the Board on the best new proposal the division would undertake, if it were given sufficient resources. In general, the Board chooses the project (from the eight) with the highest forecast NPV (= estimated Net Present (Benefits - Costs)) to fund. Over the years, however, the Board has been disappointed. Far too frequently the promised net returns of the highest-NPV projects have not eventuated, even though each of the eight divisions has had roughly equal turns.

Assuming that Magacorp's divisions have not knowingly exaggerated the estimated NPVs, what could explain the Board's experience?