PROBLEM SET 5 due **Tuesday, March 18th in class** (on in my mailbox ahead of time)

RATIONAL CHOICE

Exercise 1 (24 pts.) The following questions are about the reading "Ideal Agents Brave the Newcomb". Answer them in about 1–2 sentences apiece.

- (a) Why would Carl be willing to go along with—nay, be willing to *pay* to be a part of—Eve's strange variant of the experiment?
- (b) Why would Carl be unwilling to go along with Eve's variant of the Newcomb *after* the predictor has scanned him?
- (c) Why, before he is scanned by the predictor, might Carl (badly) not want to be told how the coin toss landed?
- (d) Why might Eve not want to know by looking, or from Carl, whether there is \$100 in the opaque box?

Exercise 2 (26 pts.) Bert and Ernie need to coordinate their choices on A or B, but there are two probems. First Bert prefers to coordinate on A, whereas Ernie prefers B. Second: they have no way of planning what to do ahead of time. They have to choose without communicating or knowing what the other does. The payoffs look like this:

		Ernie			
		А		В	
Bert	А		1		0
		3		0	
	В		0		3
		0		1	

Sadly, no choices here are dominated (or weakly dominated) for either Bert or Ernie. But...

- (a) [16 pts.] Suppose both Bert and Ernie know that Bert (but not Ernie) has two dollars in his pocket and a lighter. Bert has the option of burning this money (for no reason) in front of Ernie before they choose. If he burns it, this counts as a loss of 1 'util' for Bert. Now Bert and Ernie are in a new strategic situation. Bert has *four* choices: burn the money and choose A, don't burn and choose A, burn and choose B, or don't burn and choose B. Ernie really has four choices too: choose A whether or not Bert burns, choose B whether or not Bert burns, choose B whether or not Bert burns. Write out the 4x4 table for this game (with the choices in the order I listed).
- (b) [6 pts.] If you've done (a) right, some options will be strongly or weakly dominated. Use the method of *iterated elimination of weakly dominated options*. List which options weakly dominate each other, *in the order* that they do so in the deletion process. Say, for example, "Column 1 weakly dominates Column 2. Then Row 4 weakly dominates...etc."
- (c) [4 pts.] Something surprising should have happened in (b). In a paragraph, comment. For example, does this result make sense? If so, why? If not, why not?