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**Lecture 14: Auctions II**

1. Information
   1. Information matters. If you know how much others are willing to pay, you know how much to shave your bid. If you don’t know how much the item is worth, your bidding strategy should change.
   2. *Independent private values*—each bidder knows his own valuation but doesn’t know others’ valuation and each bidders’ valuations are independent from one another.
   3. *Correlated value estimates*—either the bidders don’t know their own value or their value depends on others. The higher one bidder bids, the higher others will bid as well.
   4. *Common value*—when the true value of the item is the same for everyone but it is unknown. Bidders estimate the value based on the own information.
2. The Winner’s Curse
   1. The jar of coins.
   2. This is a form of adverse selection: one cannot be sure what the true value of the jar is.
   3. Some people will guess too high, some will guess too low, and the average will be close to the truth.
   4. But suppose we are not merely guessing on the value of the coins, but bidding on it.
      1. Because the average is close to the truth and not everyone is exactly right, some over-estimate and some under-estimate.
   5. Since the person who thinks the jar is worth the most will bid the most, they will win the auction. However since we know they overestimated, they will lose money.
   6. Thus the *winner’s curse*—when the winning bidder paid more than the value of an item.
3. Application
   1. It is very easy to fall into this trap—all of these are likely candidates for a winner’s curse:
      1. Spending a lot of energy trying to “win” a date/relationship with a particular person.
      2. Spending a lot of time trying to get a job without knowing all the details.
      3. Spending a lot of money to secure a place at a new restaurant.
   2. Lesson: When you can’t be sure about your information, recognize that you might be suffering from the winner’s curse.
4. Revenue Equivalence Theorem
   1. English and 2nd price sealed-bid auctions are basically the same. It’s easy to turn an English auction into a 2nd price sealed-bid auction by having everyone submit their bids on a piece of paper.
   2. Dutch and 1st price sealed-bid auctions are basically the same. It’s easy to turn a Dutch auction into a 1st price sealed-bid auction by having everyone submit their bids on a piece of paper.
   3. But these two types of auctions (the type defined by the strategy for bidders) are basically the same as well.
   4. *Revenue Equivalence Theorem*—the revenue from different auctions will be the same if the following holds:
      1. Values are independent and private
      2. Bidders are risk-neutral
   5. If values are correlated:
      1. English > 2nd price > 1st price = Dutch
      2. This is because bidders get the most information from each other with an English auction. It lessens the winner’s curse.
      3. Since you pay another’s highest bid, it also lessens the winner’s curse, though not as much, so bids shrink only a little.
   6. If bidders are risk-averse:
      1. 1st price = Dutch > 2nd price = English
      2. If risk-averse, bidders won’t want to risk losing consumer surplus by waiting and being out-bid (and thus getting nothing). If you’re willing to pay $100 and the bid is at $90, you would rather lock in that $10 surplus than risk getting no surplus.