



Elements of Chance

CSC430/HCI530

Why include chance at all?

- Delaying / preventing solvability
 - Tic-tac-toe vs backgammon
- Keeping play competitive for all players
 - There is always the possibility of victory for weaker players
 - If you lose, you can blame your bad luck
- Increasing variety
- Creating dramatic moments
 - Create increasing tension in various ways; the last roll of the dice resolves the tension in a climax
- Enhancing decision making
 - No longer a strategy that is *always* right

Mechanics of chance

- Dice
 - Purely probabilistic (for perfect dice) → good, because people are poor at probability theory
 - Previous rolls never influence future ones
- Cards: wonderfully versatile
 - Can be shuffled → randomness
 - Can be played face-down → hidden information
 - Can be dealt to players who can only look at their own cards (or who can only look at everybody else's cards) → privileged information
 - Can be used as resources by being kept in a hand, in a pile, or on the table
 - Careful: probabilistic, but any revealed card changes the probabilities of future cards
- Hidden information (fog of war, rock-paper-scissors, etc.)
 - Careful: hidden does not mean random! If it is also random, players become confused or frustrated
 - i.e., when a hidden piece of information is revealed, it must be a *logical* consequence of previous game actions / states
 - So, if there is a random mechanic, reveal it to the player at the start of the game
- Other forms of randomness (spinners, coin flips, dreidels, draw tiles out of a bag, etc.) are variants of the above

All randomness is not equal

- Is Poker a game of chance, or of skill?
 - Both, of course, but which one dominates?
- Measured randomness: the nature of random elements is known and understandable
- Probability theory works, and understanding it is a skill

Completely Random Games

- Children's games
 - Children lack complex decision-making, and enjoy chance for that reason (often think of their “skill” at rolling dice)
 - Tend to build tension that is resolved by a random element
 - Sudden changes of fortune
- Gambling games
 - Without money at stake, not interesting
 - Offer choices that don't influence the randomness, which gives players the *illusion* of control (the bane of gamblers)
 - Games like Poker also include skill, so they are not purely gambling games; the skill is based not on the draw, but on what you *do* with that draw

Challenge

- You are given blank index cards that you can alter in any way you like (write, draw, cut, etc)
- Make a game *only* with these bits that includes an element of randomness
- Suggested process: back to basics
 - Choose a core (suggested core: theme)
 - Objective of the game, setup, progression of play
 - Game rules, game views
 - Playtest
 - Iterate