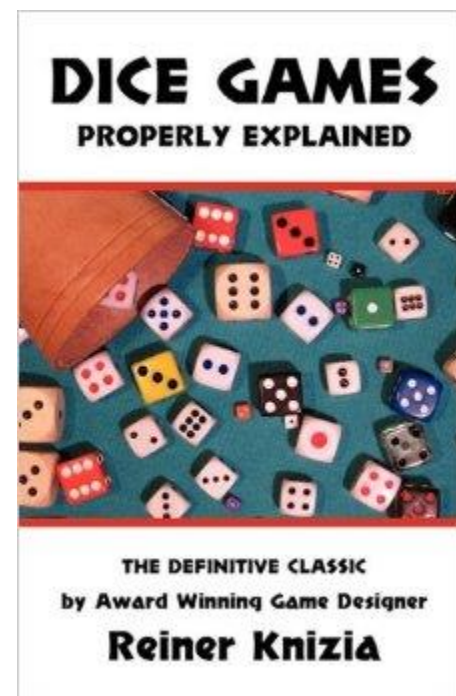
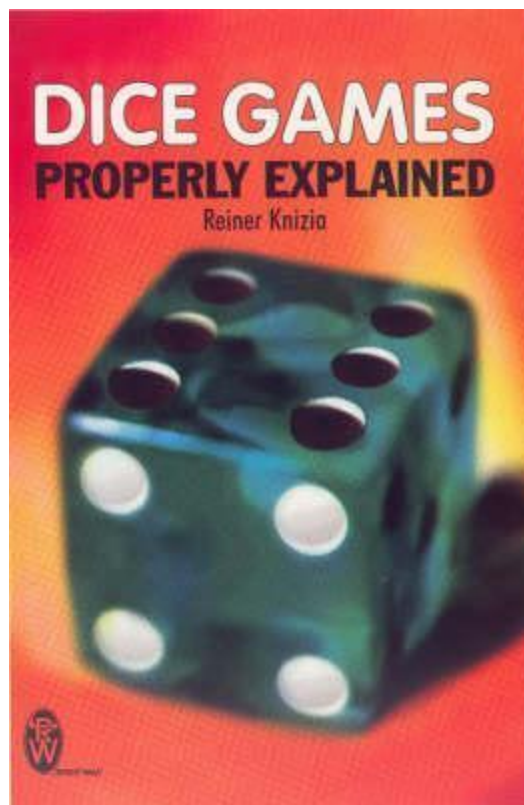


# Dice Games Properly Presented

Todd W. Neller

# What's Up With the Title?

- My favorite book on dice games:
  - Many games
  - Diverse games
  - **Well-categorized**
- We'll skip the luck-only game categories.



# Outline

- Basic categories of dice games with **decisions**:
  - Progression games: opportunities to improve successive results
  - Jeopardy games: push your luck and possibly bust
  - Category games: assign results from each turn to different scoring categories
  - Bluffing games: games of hidden (i.e. imperfect) information
- We'll look at and play one representative example from each category.

# Progression Game: Poker Dice

- Material:
  - Five Poker dice or five d6 (used here)
    - Best to have two sets of five dice so that highest Poker hand can remain on display
  - Chips to signify rounds won (or paper and pencil)
- Object: Be the first player to win three rounds producing the highest Poker combinations.

# Poker Dice Play

- Play:
  - Play proceeds in rounds with the player leading the round passing clockwise with successive rounds.
  - Starting with the round leader and proceeding clockwise, each player rolls all five dice and then may reroll of any or all of these dice to form their highest Poker combination. (variant: 2 rerolls)
  - The player with the highest combination at the end of the round wins a chip.

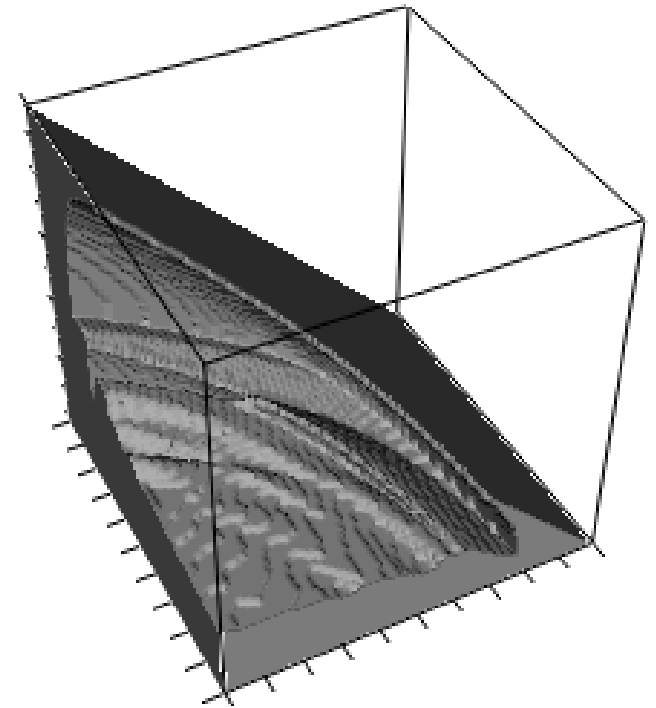
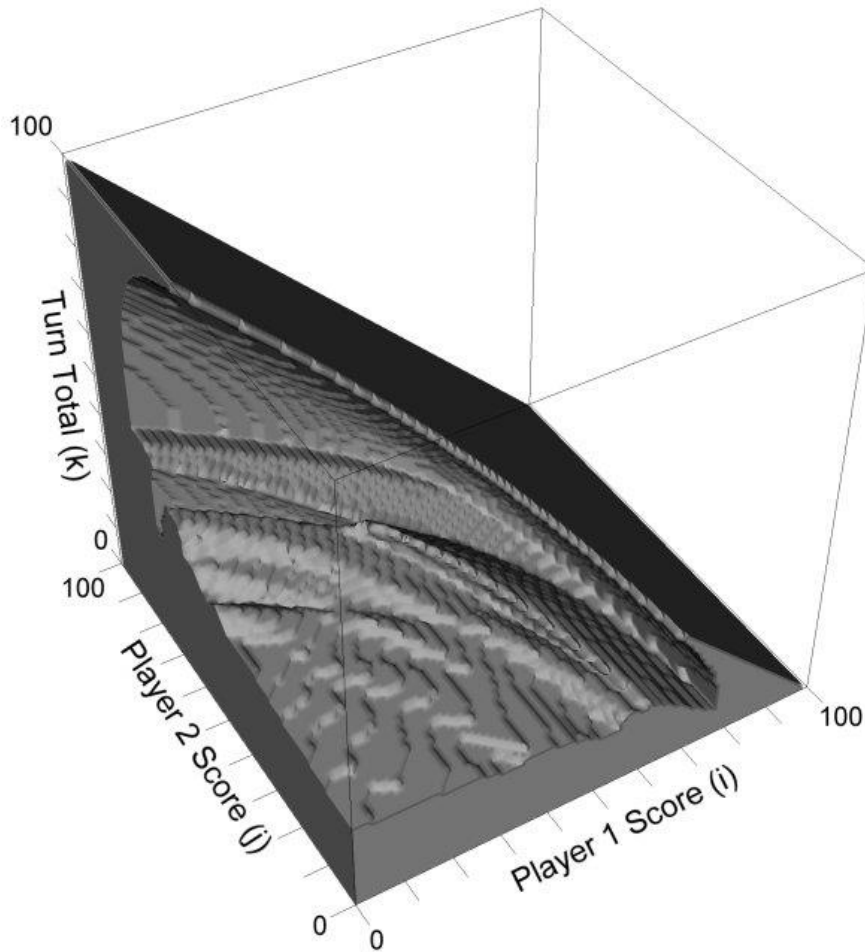
# Poker Dice Combinations

- Poker combinations (highest to lowest):
  - 5 of a kind (e.g. 2-2-2-2-2, 5-5-5-5-5)
  - 4 of a kind (e.g. 3-3-3-3-6, 4-5-5-5-5)
  - Full house (e.g. 3-3-3-5-5, 2-2-6-6-6)
  - Straight (e.g. 1-2-3-4-5, 2-3-4-5-6)
  - Triplet (e.g. 2-3-5-5-5, 2-4-4-4-6)
  - Two pairs (e.g. 3-3-4-5-5, 1-1-2-2-6)
  - One pair (e.g. 1-2-5-5-6, 1-2-4-6-6)
  - High die (e.g. 1-2-3-4-6, 1-2-3-5-6)

# Jeopardy Game: Pig

- Material:
  - a single die (dice with a pig in the place of the 1-spot can be obtained)
  - (optional) paper for tracking scores
- Object: two or more players race to reach 100 points.
- Play: Each turn, a player repeatedly rolls a die until either a 1 is rolled or the player holds and scores the sum of the rolls (i.e. the turn total). At any time during a player's turn, the player is faced with two decisions:
  - roll - If the player rolls a
    - 1: the player scores nothing and it becomes the opponent's turn.
    - 2 - 6: the number is added to the player's turn total and the player's turn continues.
  - hold - The turn total is added to the player's score and it becomes the opponent's turn.

# Optimal Pig Two-Player Strategy





# Category Game: Yahtzee

1. Each turn, a player begins by rolling all 5 dice.
2. The player *may* then reroll any or all dice.
3. The player *may* then reroll any or all dice again. Note that the player is never *obligated* to reroll on a turn.
4. The player, having stopped rolling after (1), (2), or (3), assigns the dice to an unused scoring category and scores it.
  - Exception: A player may make multiple Yahztees.

# Yahtzee Scoring: Ones Through Sixes

- Six scoring categories, one for each number of pips (1-6)
- Score only those numbers of the category
  - Example: 2-2-2-5-5 scores 6 in twos, 10 in fives, and 0 in all other number categories.
- A total of 63 or more (averaging a triple or more in each category) gains a bonus of 35 points.

# Yahtzee Scoring: Other Categories

- 3 of a kind, 4 of a kind: score total of all dice
- Full house (3 of a kind + pair): 25 points
- Small straight (4 in sequence): 30 points
- Large straight (5 in sequence): 40 points
- Yahtzee (5 of a kind): 50 points
  - Additional Yahtzees score 100 points bonus + free round
- Chance (any dice): score total of all dice







































# Bluffing Game: Dudo

- “According to legend, King Atahualpa of the Incas taught this to the Spanish conquistador Pizarro more than 400 years ago...” (Mohr, 1997)
- Origin generally believed to be 15<sup>th</sup> c. Inca
- Variants long popular in many Latin American countries
- Many variants/names (Liar’s Dice, Perudo, Bluff, Call My Bluff, Cacho, Cachito)
- Internationally popular: BoardGameGeek.com rank 388/75275 (top ½%!), February 11<sup>th</sup>, 2015

# Dudo Overview

- Bluffing dice game for 2+ players
  - Each player rolls 5 dice concealed under cup
  - Players make successively bolder claims about *all* dice rolled until player challenges
  - Loser of challenge loses dice
  - Last player with dice wins

# Dudo Claims

	1 	1 	1 	1 	1 	1
1 	2 	2 	2 	2 	2 	2
	3 	3 	3 	3 	3 	3
2 	4 	4 	4 	4 	4 	4
	5 	5 	5 	5 	5 	5
3 	6 	6 	6 	6 	6 	6
	7 	7 	7 	7 	7 	7

# Dudo Rules

- Players each roll and privately view 5 dice concealed under a cup. 1's are wild.
- Players make successively greater claims until one challenges the previous claim with “Dudo!” (Sp. “I doubt it!”), all reveal dice, and:
  - More/less than claimed? Challenger/claimant loses dice according to difference.
  - Claim exactly correct? All others lose 1 die.
- The next round begins with challenge winner.
- The last player with dice wins.

# Conclusion

- Among dice games with decisions, remember these representative examples:
  - **Progression**: Poker Dice – try to improve to the best Poker combination
  - **Jeopardy**: Pig – try to discern when to hold (and score) or roll (and improve or lose the turn total)
  - **Category**: Yahtzee – progression and strategic scoring of Yahtzee categories
  - **Bluff**: Dudo – mixed strategy of hiding and using information to make claims about all players' rolls



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