# Exploring the Crossroads of Societal Dynamics and Game Theory in the Vacuum of CBS Survivor

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# Meet The Team!

### Monroe Farris

Underline Current Role: Data Science Engineer @ MITRE

Underline Undergrad: University of Virginia

Underline Fun Fact: Is a member of the Cheesecake Factory Customer Hall of Fame

### Leonard Marshall

Underline Current Role: Principal, Quantitative Analytics & Data Science @ Gartner

Underline Undergrad: University of Virginia

Underline Fun Fact: Survivor superfan - applied to compete twice and watched every episode

### Matt Tsang

Underline Current Role: Consultant @ Deloitte

Underline Undergrad: Emory University

Underline Fun Fact: Recently got a hammock and is very surprised by its usefulness

# Research Topic

Applications of network analysis to reality competition shows, specifically, CBS's Survivor.

Allowing one to better understand:
- Game evolution over time
- Social dynamics within the game
- Impact of the production and editing of the show on game play

# What is Survivor?

Survivor is a reality competition based game show with a the general structure of:

- 16-20 contestants are marooned in an uninhabited area, split into 2 tribes, live off of the land, and compete against each other in challenges.
- A tribe that loses an immunity challenge faces the tribal council, where they must anonymously vote one of their own out of the competition.
- At some point, usually halfway, both tribes merge into one.
  - Contestants compete as individuals until only 2 finalists are left.
  - Those eliminated are part of the final council, who will anonymously vote to choose a winner.

As the franchise continued over the years, other factors changed:

- Location
- Tribal cast members (i.e. sex, race, age)
- Theme (i.e. *Blood vs Water*, *Winners at War*, *Heroes vs Villains*)
- Game elements (idols, redemption island)

# Literature Review Results

| Game Evolution / Production | Alliance Theory | Voting Theory |
|---|---|---|
| **Takeaway 1**: *Welcome to the Jungle of the Real: Simulation, Commoditization, and Survivor*<br>- Survivor as the 'false real', editors tampering with perception as they edit<br><br>**Takeaway 2**: *Paradox and the Consumption of Authenticity through Reality Television*<br>- Coping with the presence and lack of authenticity | **Takeaway 1**: *Alliance Theory: a Neorealist First Cut*<br>- Dynamics and behaviors of coopetition groups<br><br>**Takeaway 2**: *Alliance Group Formation*<br>- Initial group formation and the results of social embeddedness<br><br>**Takeaway 3**: *Toward a Network Theory of Alliance Formation*<br>- Network structure plays a large role in alliance formation | **Takeaway 1**: *Surviving Survivor: How Alliances Persevere in Survivor*<br>- Quantitative results showing impact of coalitions staying together or breaking apart based on voting within or outside of the group<br><br>**Takeaway 2**: *Survivor - Innovation*<br>- Describes types of network exits and effects of re-entry |

# Research Questions and Objectives

**Game Evolution**

**Are there underlying nodal characteristics that generate subgraphs?**

- <u>Goal:</u> Identify one or two unifying characteristics that create voting patterns or alliances

**Alliance Theory**

**Based on a given season, do alliances follow observed patterns laid out in the literature?**

- <u>Goal:</u> To observe parallels between empirical alliance theory and the microcosm game of Survivor

**Voting Theory**

**How does someone's voting patterns and history impact their performance in the game?**

- <u>Goal:</u> To observe how voting patterns change during the phases of the game as it relates to a contestant's longevity.

# Proposed Methods

**Data Collection**
- Characteristic Data collected by Survivor Super-Fan Jeff Pitman for each season of the show
    - Source: (https://www.truedorktimes.com/survivor/boxscores/data.htm)
- Voting Data collected and made available (and then cross confirmed) from the Survivor Fandom Wiki Page
    - Source: (https://survivor.fandom.com/wiki/Main_Page)
- Transcripts of every episode in each season, to cull for text-based analysis.
    - Source: (https://reality-tv-transcripts.fandom.com/wiki/Reality_TV_Transcripts_Wiki)
    - Source: (https://drive.google.com/drive/folders/0B8Xzl82K1TP8fmltS2RoYWUxeW1YSmZoUXVQSldNMTJnUEVSV1Zvd2xYaFpLYnViOWJ1RXM?resourcekey=0-lnqLgepahAhBF8fOjYeVrw)

**Preprocessing**
- Extract historical voting records over the course of a season
- Extract other game related metrics (i.e. number of challenge wins)
- Assign additional attributes to each contestant (node) and relationship (edge) based on demographics, sentiment analysis, and more (to be determined)

**Analysis**
- Temporal analysis to understand shifts in alliance and voting patterns layered with player characteristics

# Very Early Sample of A Network Diagram

As an initial base case for a point of reference, we mocked up a very simple version of the voting patterns for Season 1, Episode 1 of CBS Survivor. We plan to create 4 types of graph for each season.

1. For each episode, who is targeting whom? (Pictured)
2. For each episode, who is allied with whom?
3. For the season in aggregate, who targeted whom?
4. For the season in aggregate, who allied with whom?