

Rules, Etiquette, and Gameplay (or, What's in a Game?)

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Game AI Applications for Historical
Games Research
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Traditional Games

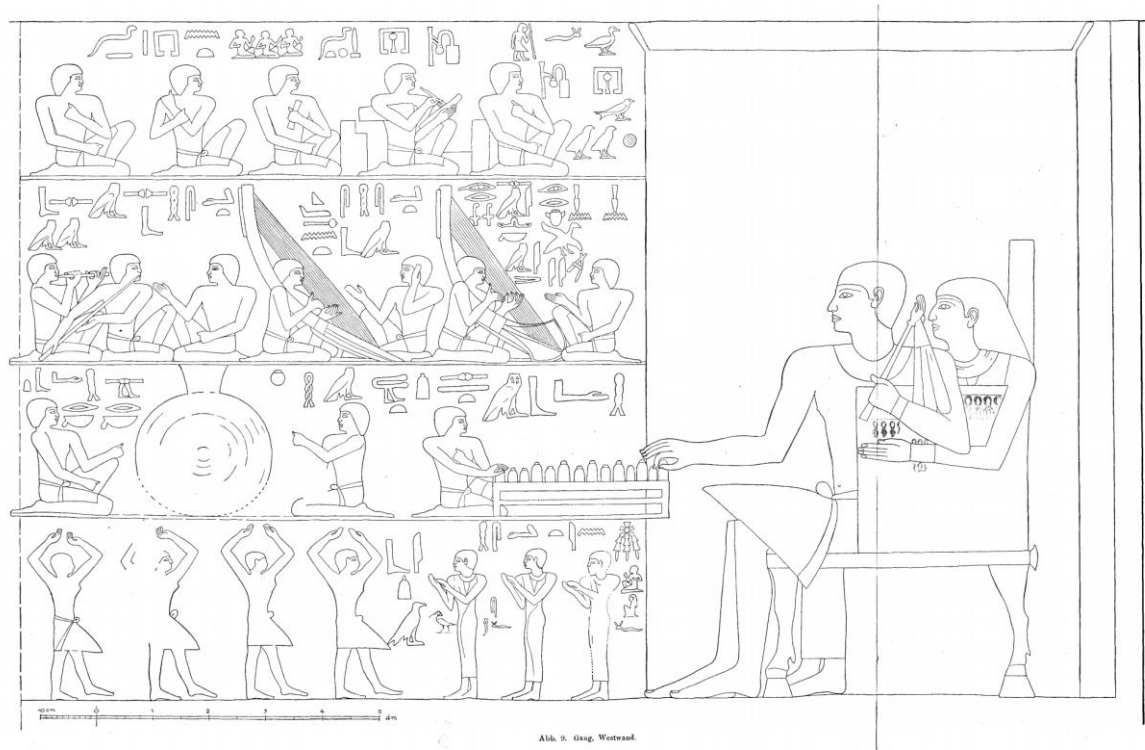
- Rules have rarely been written down
- Communities of players
- Rules vary through time and space
- Tend to have longevity



Players of Sántäräj, Gabata, and an unknown game, Gondar, Ethiopia, early 18th century CE (British Library MS Or 791).

Oral Transmission

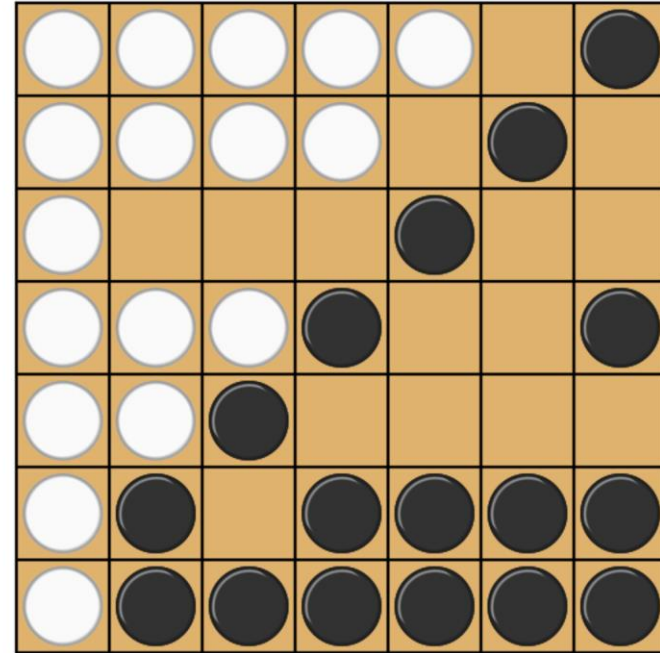
- Rules are taught from one person to another
 - Older generations to younger
 - Peer to peer
- Can be taught without language
- Therefore: NO need to record the rules!



Relief from the tomb of Kaiemankh, Giza, Egypt, c. 2300-2200 BCE

Social play

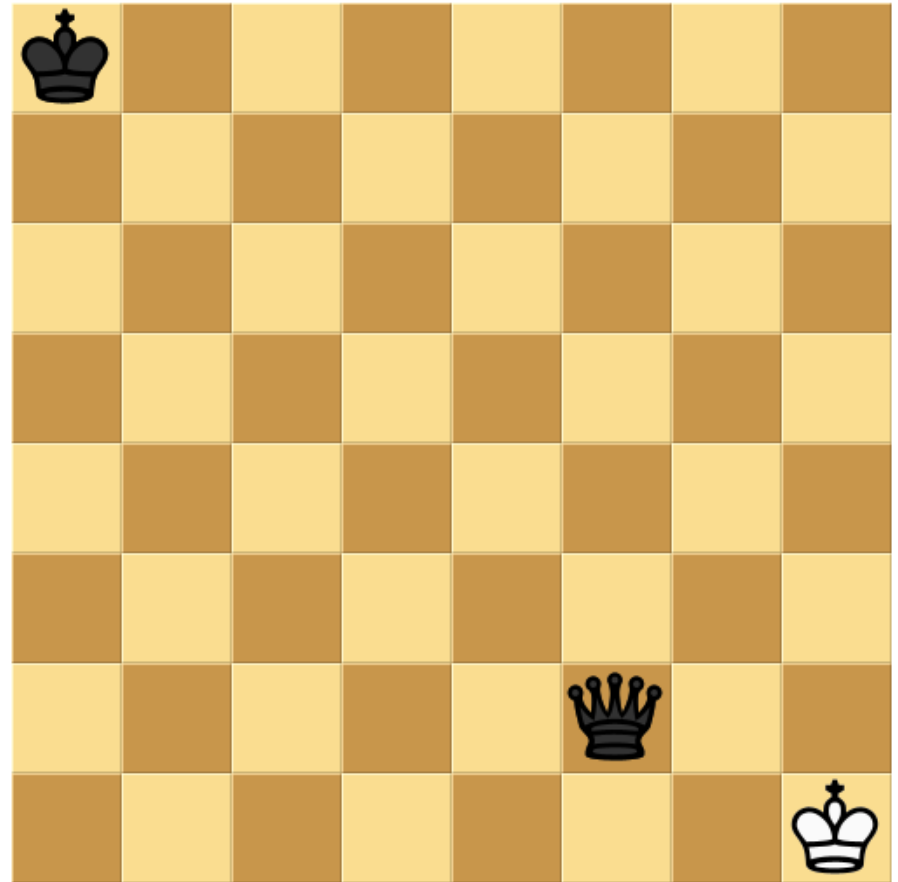
- The motivation to play is social
- Rules may allow for antisocial play
- Social pressure prevents this in real life
- SOMETIMES: Specific rules will arise
- Problems for AI analysis



Kharebga

Edge cases

- Uncommonly encountered situations technically allowed by the rules, but which cause ambiguities
- May be dealt with on a case-by-case basis
- E.g., Stalemate
- Crowning a winner may not always be essential to play!



Etiquette

- Socially-driven game play behavior
- Not governed by the rules
- Make the game playable
- Make the game enjoyable
- Important for the social consequences of play
- Difficult to replicate with AI



Detail of Ottoman Backgammon and Mancala players in a coffee shop, Istanbul, late 16th century CE (Chester Beatty Library, Dublin T.439.9)

Ethnographic Considerations

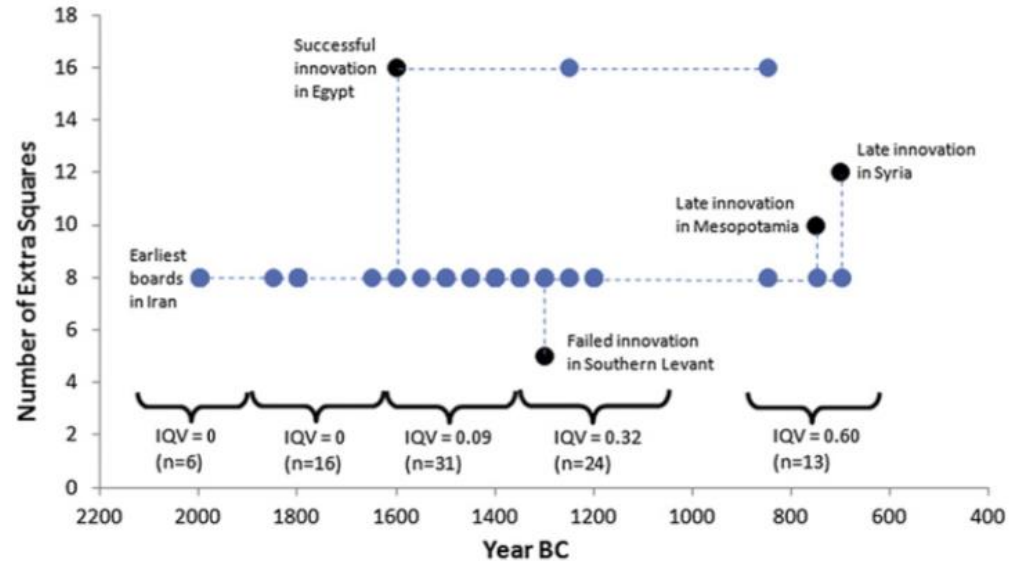
- Differing levels of interest in games
- Less interest/time played = less likely to have a full reporting of rules
- Usually reporting games from other cultures: prone to misunderstandings



Kharebga players in North Africa

Cultural Transmission Theory

- Oral transmission of games from person to person, through time, leads to changes in a game
- Games are more likely to change when they are adopted into a new culture
- However, they are transmitted with significant fidelity



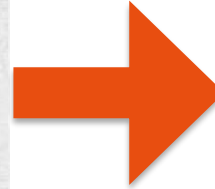
from de Voogt et al. 2013

Evolution of Games

- Communities of players agree upon certain rules
- Negotiation when games are initiated
- Cultural transmission leads to long-lasting change
- Considerable variation within what can be considered a game



Royal Game of Ur, Shahr-i-Sokhta, Iran, third millennium BCE



20 Squares, Enkomi, Cyprus, 14th century BCE (British Museum 1897,0401.996)

Problems in Defining Games

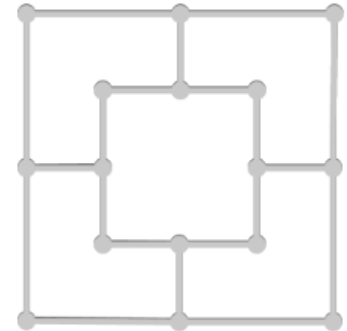
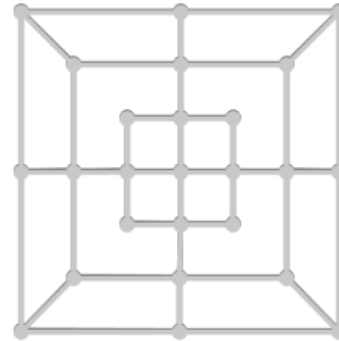
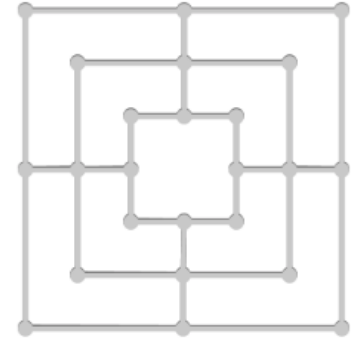
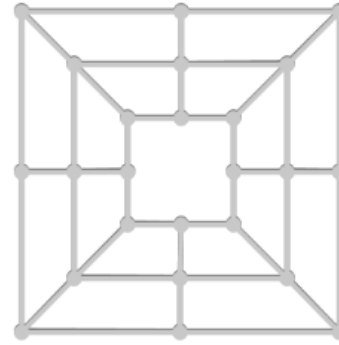
- Where to draw the line between variations?
- Equifinality: Changes in games can lead to the same result
- What, is a game?!



Cluster analysis of traditional games in Ludii Database

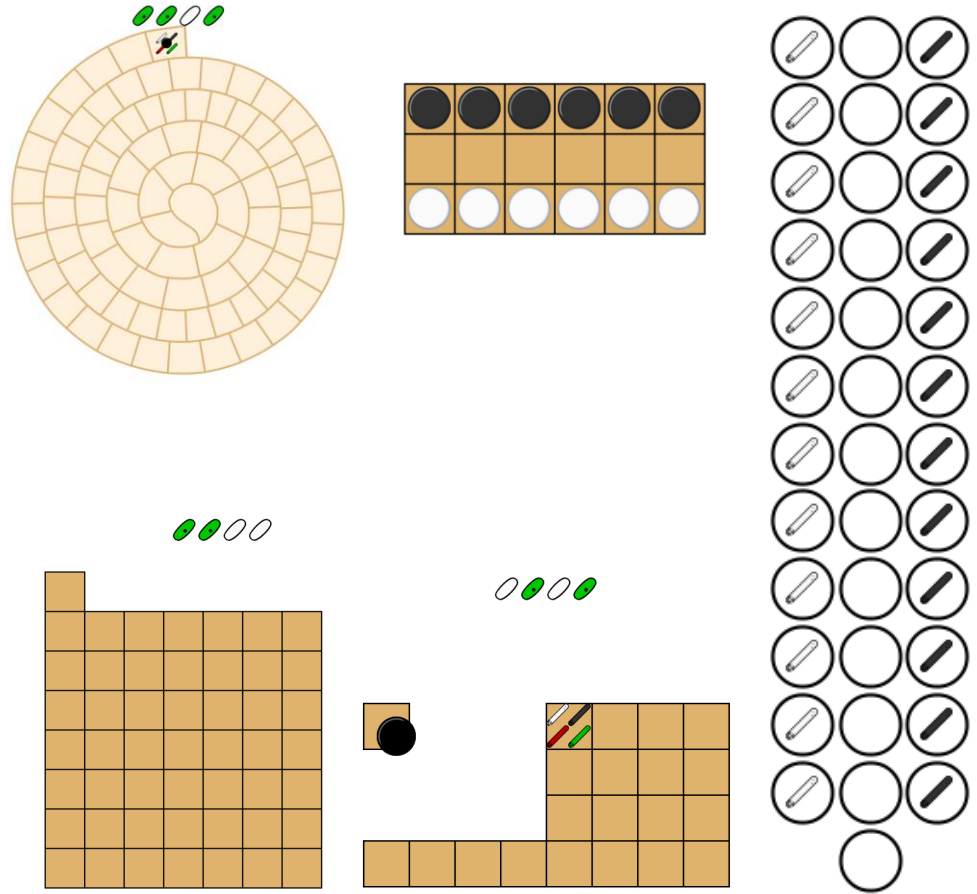
Mechanics

- Games that are played by the same rules should be the same game
- “Variants”: What does this mean? How similar must variants be?
- Are changes in certain rules more important for deciding what is a different game?



Cultural

- Games are not defined purely by mechanics in all cultures (e.g., Sig)
- Games which have identical rules can have different histories and social considerations
- Games with identical rules can be distantly separated in space/time (e.g., Merels games)



Sig

Hybrid Approach

- Sparse and incomplete information doesn't always allow us to connect two pieces of evidence to one game
- **Any** documented differences in rules in different places = different games
- Identical games which appear in distant places and times = different games
- Allows for fine-grained analysis and preserves the games as heritage of individual cultures



Shuang Lu
players, 10th-
11th century CE
China



Mick Jagger
and Jerry Hall
playing
Backgammon,
1983