

GAT 110: Game History

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Early War Games

Chess

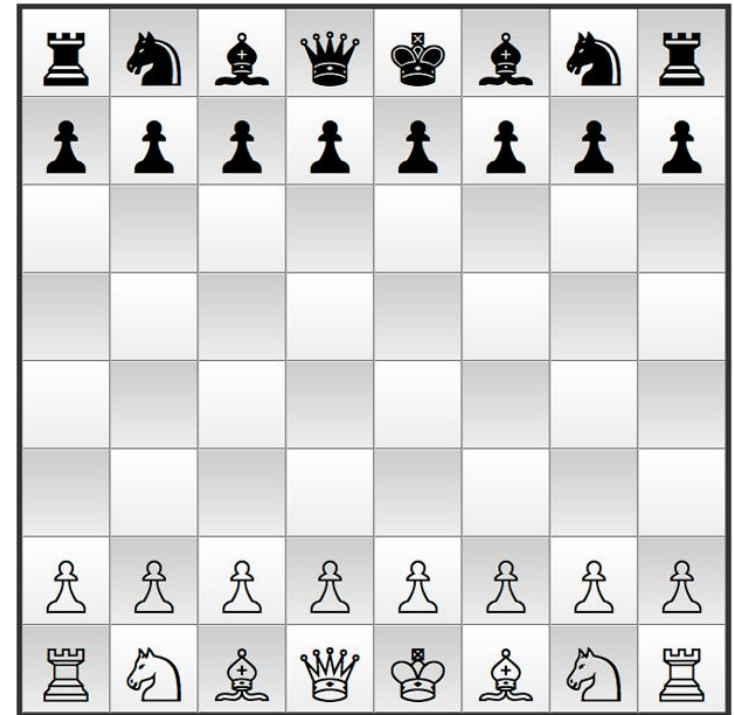
“Chess is mental torture.”

- Garry Kasparov, World Chess Champion 1985-2000

Chess

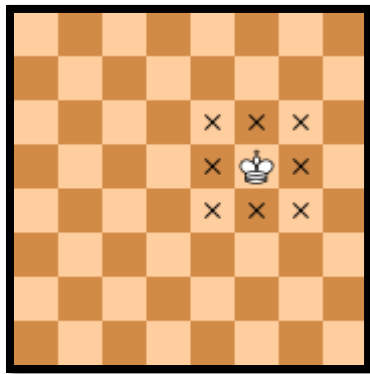
- Chess is a two player abstract war game with 6 different piece types:

- King
- Queen
- Bishop (x2)
- Knight (x2)
- Rook (x2)
- Pawn (x8)

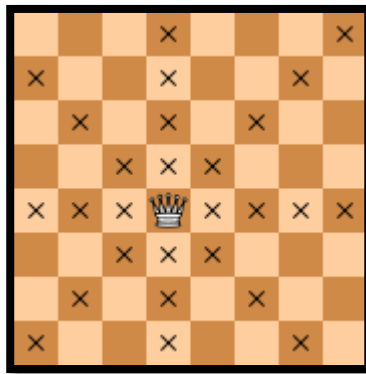


- Chess is one of the most popular board games in the world, played by millions all over the world both casually and professionally.
- One player controls the black pieces and the other the white pieces on an 8x8 grid called the chessboard.
- Goal is to capture your opponent's king by *check mate*.

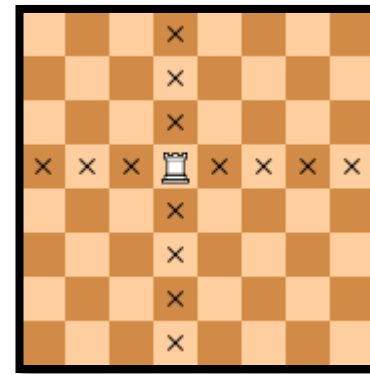
Piece Movement



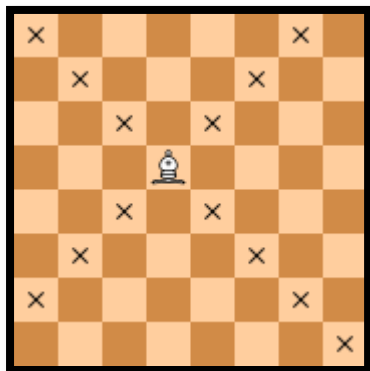
King



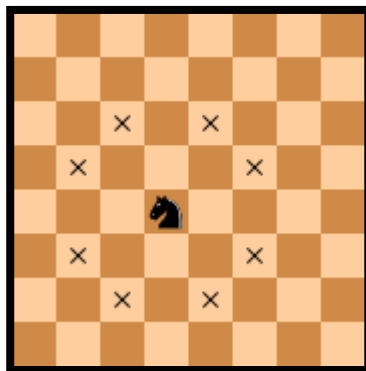
Queen



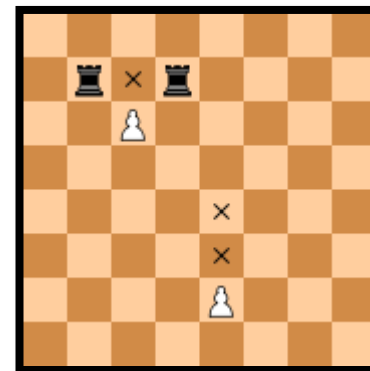
Rook



Bishop



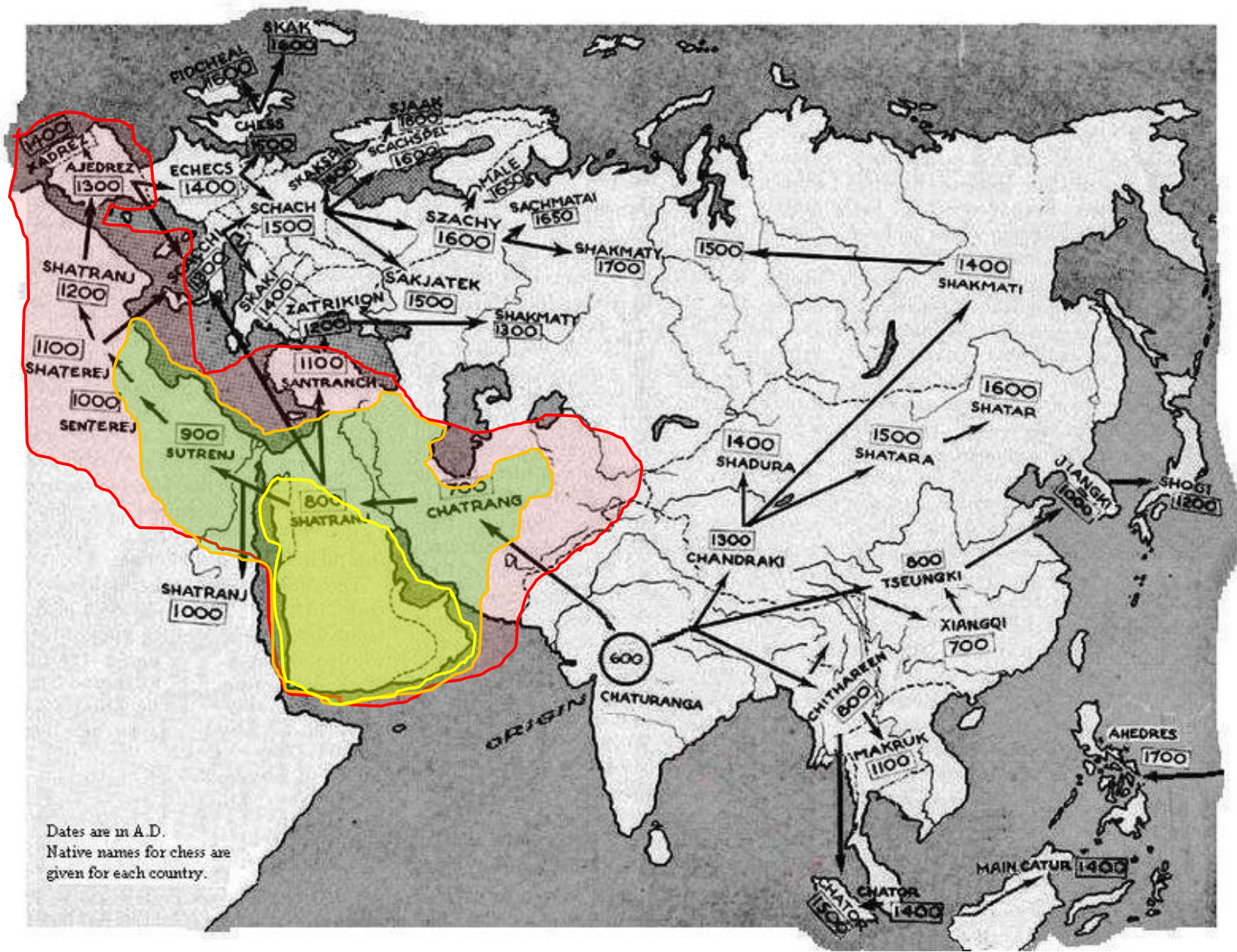
Knight



Pawn

History of the Game

- **Chess**, or Western Chess as it is sometimes known, evolved from the game **Chaturanga**, which has documentary evidence of existence as early as the early 7th Century AD.
 - c. 620 AD – Sanskrit document *Vasavadatta* describes what could be chess pieces.
 - c. 650 AD – Persian document *Kārnāmag-ī Ardaxšīr-ī Pābagān* (Book of the Deeds of Ardashir, Son of Papag) describes him as being skilled in Chatrang (died 242 AD)
 - 750-850 AD – the Pahlava document *Chatrang-namak* describes the arrival of Chaturanga at the court of Persia in the mid 6th Century
 - 633-644 AD – Muslim world picked up the game from the Islamic conquest of Persia where it was renamed *shatranj*
 - 800-1000 AD – game reaches Europe and Russia by at least 3 routes where the name was renamed *shāh* (king)
 - 1200-1475 AD – rules began to be modified in southern Europe where pawns, bishops, and queens acquired their modern abilities
 - 1497 – Publication of *The Repetición de Amores y Arte de Ajedrez* (Repetition of Love and the Art of Playing Chess) by Luis Ramirez de Lucena
 - 1851 – First modern chess tournament held in London
 - 1886 – First official World Chess Championship



Dates are in A.D.
Native names for chess are
given for each country.

Chaturanga

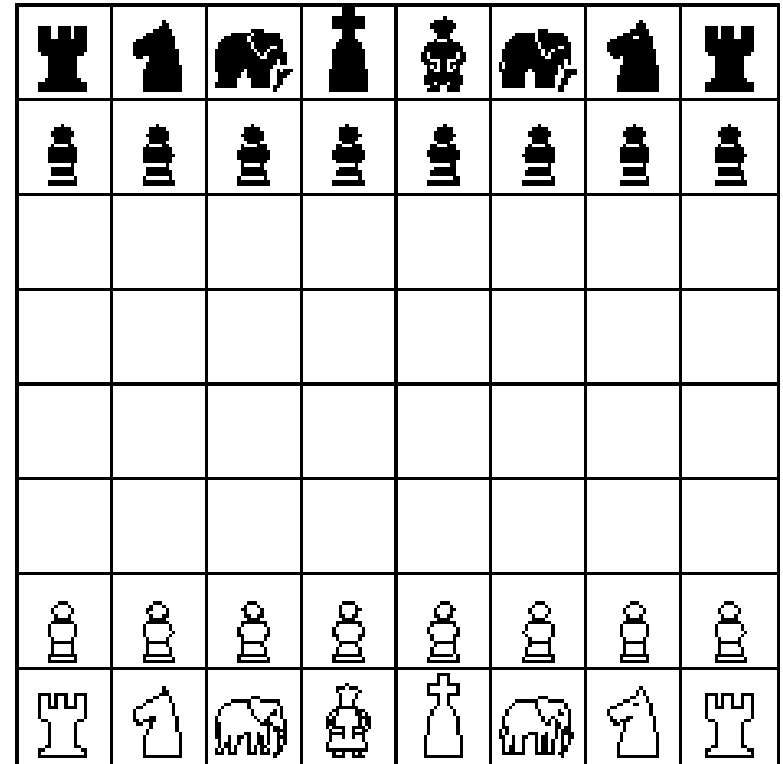
Father of Chess



Krishna & Radha Playing Chaturanga

Chaturanga

- **Chaturanga** means quadripartite (divided into four parts), and was used to describe an Indian army from Vedic times, which had four parts: 1 elephant, 1 chariot, 3 cavalry, and 5 foot soldiers.
- The board was called the ASHTAPADA (eight-square).
- The pieces were as follows:
 - **Raja** (King) – moves like King, but may make 1 knight move during the game before check
 - **Mantri** (Counselor) – moves one square diagonally
 - **Gaja** (Elephant) – moves 2 squares diagonally but may jump the intervening square
 - **Asva** (Knight) – moves like Knight from Chess
 - **Ratha** (Chariot/Rook) – moves like a Rook from Chess
 - **Pedati** (Infantry/Pawns) – moves like Pawn without initial double step movement option



Chess Variants

- Shogi (Japanese Chess)
 - Played in its present form as early as the 1500's
 - Direct ancestor without the “drop rule” was recorded in 1210 in historical document *Nichūreki*, which is an edited copy of *Shōchūreki* and *Kaichūreki* (ca. 1120)
- Xiangqi (Chinese Chess)
 - Reached China from India about the middle of the 8th Century AD via the caravan route through Kashmir and the Karakorum Pass to Hoang Ho
 - Game is mentioned in the *Han Kwaihu* (Book of Marvels) written around the end of the 8th Century and made public in 1088 AD
 - Game was changed early on for reasons explained in a story written by Ssu-Ma in 1084 AD

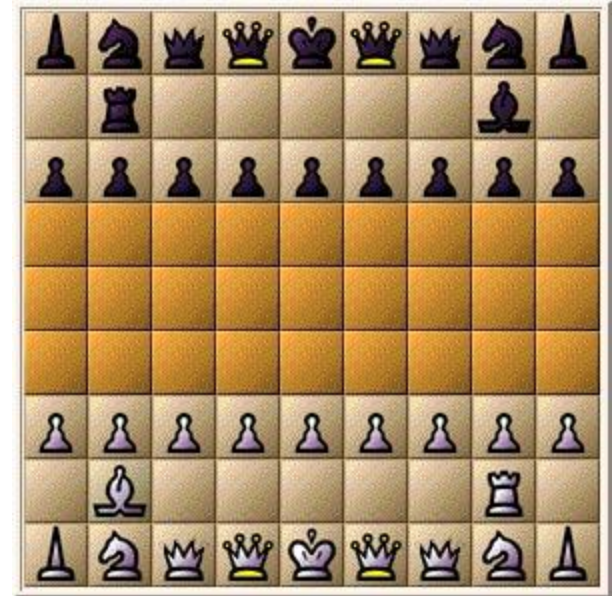
Shogi

Japanese Chess



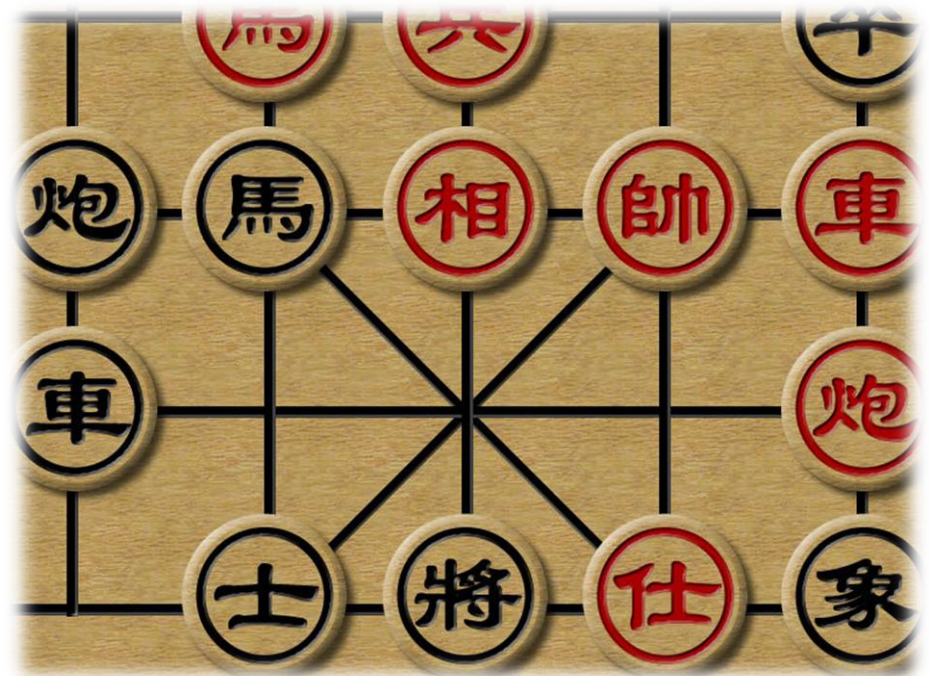
Shogi

- Shogi is played on a 9x9 board.
- Pieces promote on the opposite third of the board. All pieces promote to Gold General except as noted.
- Captured pieces may be dropped as your own as your turn, once per turn.
- The pieces are as follows:
 - King (Jeweled General) – moves as King in Chess, does not promote
 - Rook (Flying Chariot) – moves as a Rook in Chess, promotes to Dragon King, which gains ability to move 1 space diagonal
 - Bishop (Angle Goer) – moves as a Bishop in Chess, promotes to Dragon Horse, which gains ability to move 1 space orthogonal
 - Gold General – moves as a King without ability to move backwards diagonal, does not promote
 - Silver General – moves one space forward or one space on any diagonal
 - Knight (Honorable Horse) - two forward-most moves of Knight in Chess
 - Lance – moves as a Rook, but only forward
 - Pawn (Soldier) – moves as a Pawn in Chess, but captures same as move



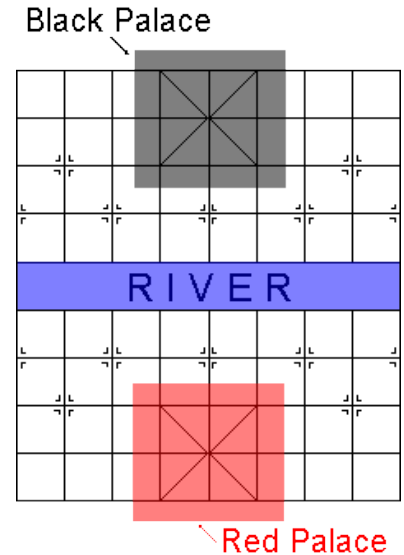
Xiangqi

Chinese Chess



Xiangqi

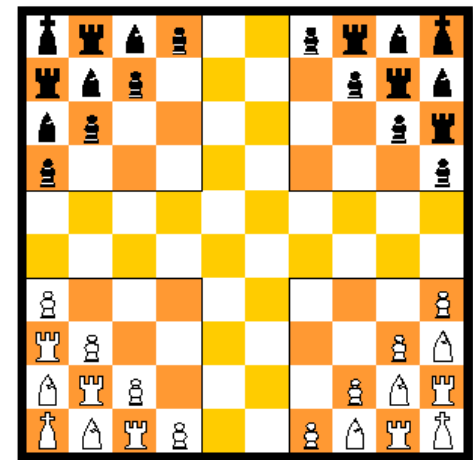
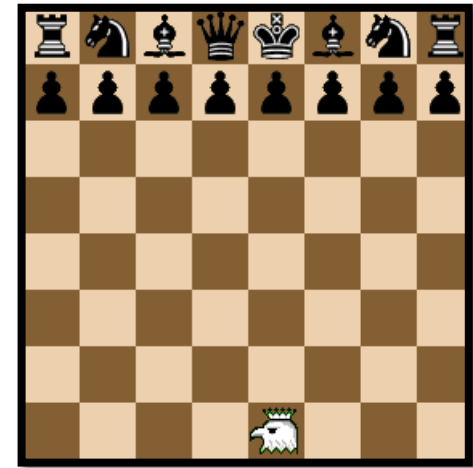
- Game is played on a board of 9x10 lines with the pieces played on the points, or intersections of the line. The center of the board is separated by the line. The center of the board is separated by the river, which Elephants may not cross.
- The pieces are as follows:
 - General – move one space orthogonally, must stay within palace
 - Mandarin (x2) – move one space diagonally, must stay within palace
 - Elephants (x2) – move two spaces diagonally, must stay on their side of the river
 - Horses (x2) – moves as a Knight in Chess, but intervening space must be empty
 - Soldiers (x5) – moves one space forward until crossing the river, where it gains ability to move sideways
 - Chariots (x2) – moves as a Rook in Chess
 - Cannons (x2) – moves as a Chariot, but must jump over another piece to capture.



Other Chess Variants

Other Variants

- Maharajah & The Sepoys
 - A variant from India in the 19th Century
 - One player has a full set of pieces where the other has only the Maharajah, which can move like a Queen and Knight combined
- Gala (Farmer's Chess)
 - A variant from Schleswig-Holstein, Germany
 - Object is to capture both enemy Kings.
 - Central cross zone causes pieces to deflect (rooks and bishops trade movement roles in this zone)



Other Variants

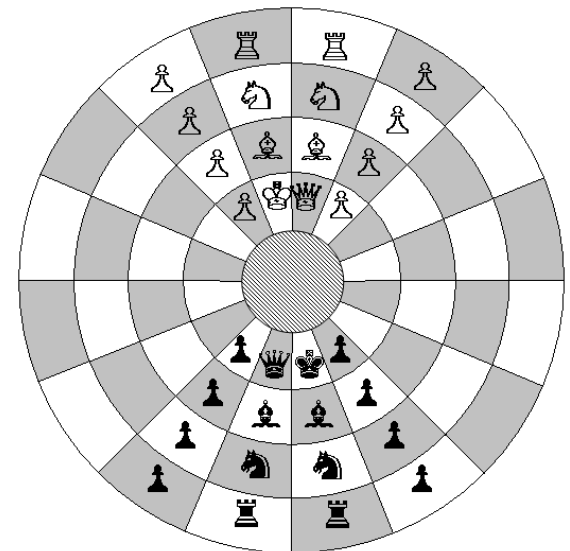
- **Courier Game**

- Appeared in Germany in the early 13th Century and was played for several centuries.
- Probable source of the modern Bishop.
- Featured an enlarged board, Queen moves 1 space diagonally or 3 on the first move, Bishop moves 2 squares diagonally and jumps, Courier that moves like a modern Bishop, Jester that moves 1 space orthogonally, Sage that moves like a King, and a double step rule for the King's and Queen's Pawns.



- **Circular/Byzantine Chess**

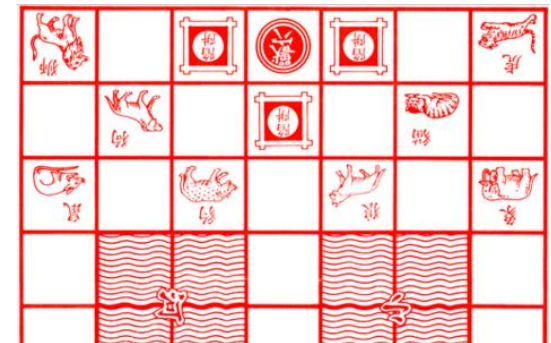
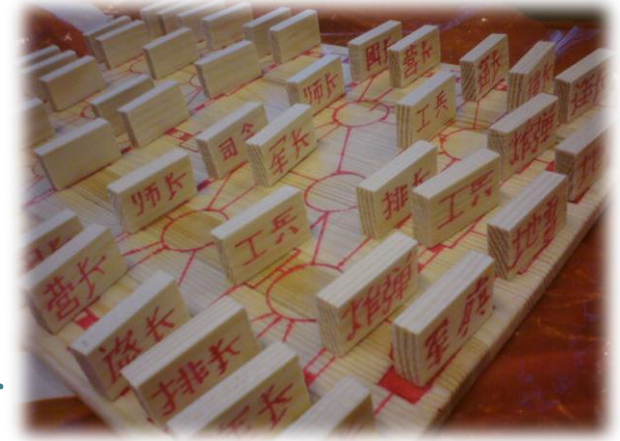
- Played as early as 10th Century in Persia.
- Played with the same pieces as Shatranj.
- Variant called Citadel Chess features a Citadel for each side in the center of the board. Reaching an opponent's Citadel with your King forces a draw.



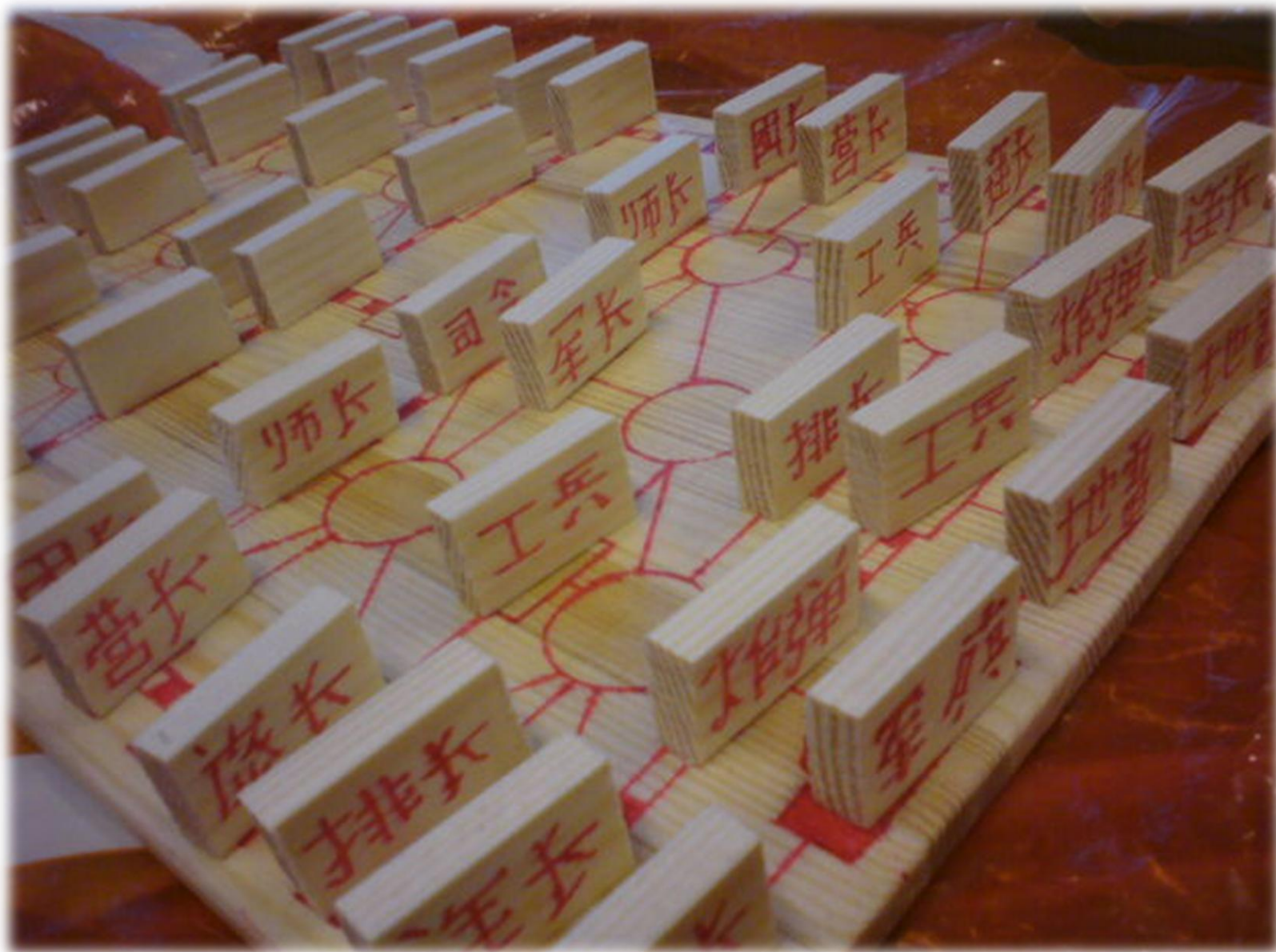
Stratego

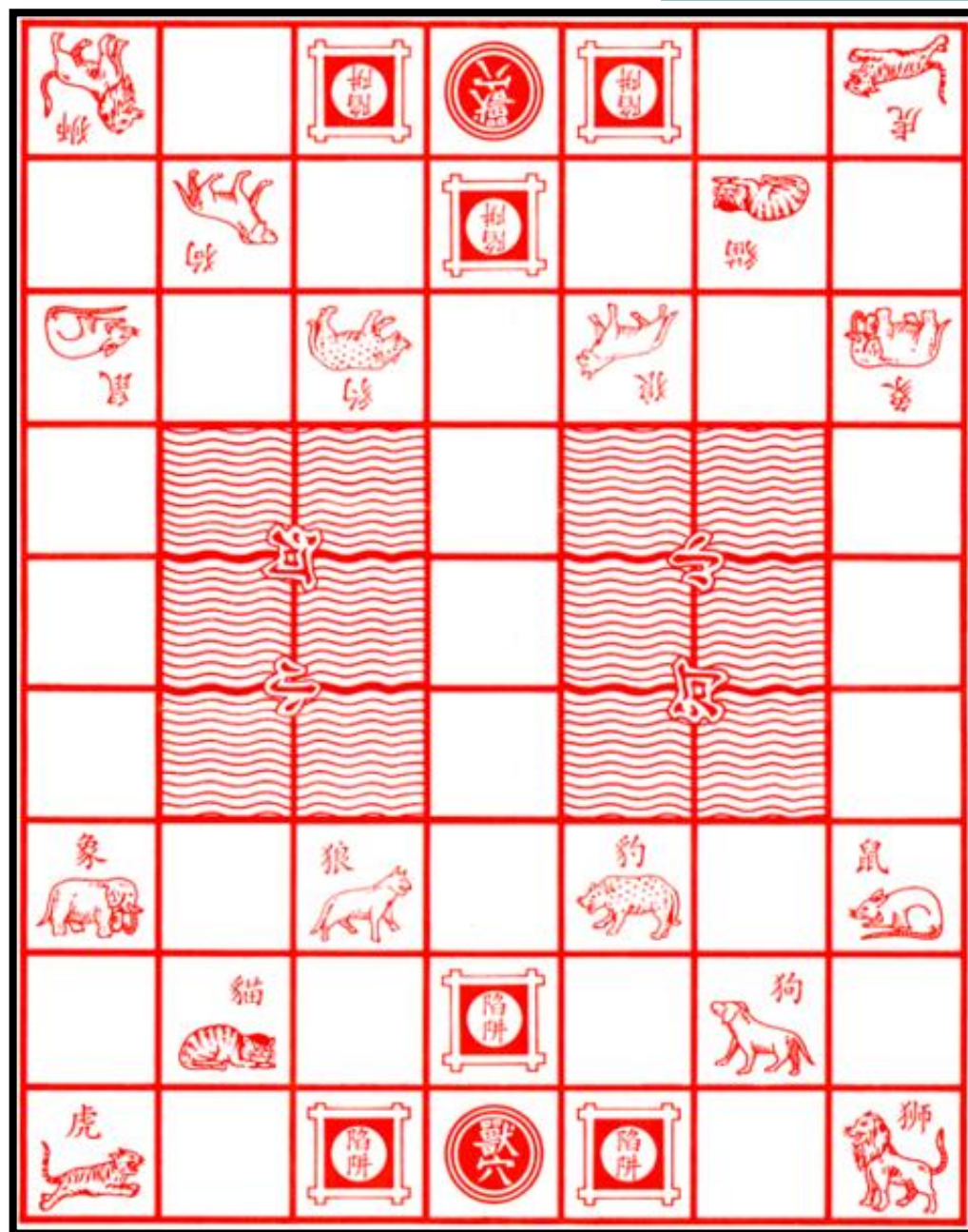
Stratego

- **Stratego** is often cited as a modern game derived from chess, but with imperfect information
 - **Stratego** is a licensed variant derived from **L'attaque** published in Europe in 1910 by Jumbo, designed by Mdme. Hermance Edan in 1908. Milton Bradley licensed and published the game as Stratego in 1961.
 - **Luzhanqi** or Jun Qi for short (lit. “Land Battle Chess” or “Army Chess”) is most probably the most immediate predecessor of L'attaque.
 - **Jungle**, also known as “Game of Fighting Animals” (Dou Shou Qi) or “Animal Chess” is a modern 20th Century Chinese children’s game that is a close cousin of Stratego.









Design Discussion

Chess Design Principles

Design Principles

- Chess is a **symmetric game** with **asymmetric piece abilities**
- Chess is a game of **perfect information**
- Chess is a game with a goal of **player elimination** through a mechanic of **deterministic attrition**

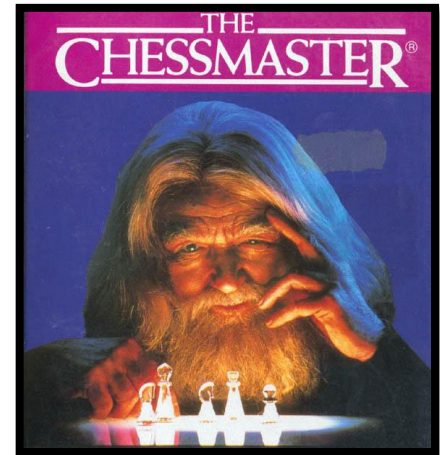
What happens if you change any of those qualities?

Chess Today

Chess in a Digital Age

Computer Chess Descendants

- Simulations
 - Chessmaster
 - Kasparov Chessmate
 - Battle Chess
- Derivatives
 - Archon: The Light and The Dark



Archon



Kasparov vs. The World

- Played in 1999 over the Internet on MSN Games.
- Garry Kasparov played the rest of the world in consultation.
- World Team led by 4 grandmasters with the World Team moves decided by plurality vote.
- Over 50,000 individuals from more than 75 countries participated in the game.
- After 62 moves played over four months Kasparov won the game. In his words:

- "It is the greatest game in the history of chess. The sheer number of ideas, the complexity, and the contribution it has made to chess make it the most important game ever played."
- "I spent more time analyzing this than any other game."



Spiritual Descendants

Computer Game Genre Inspired by Chess

Advance Wars



2001 – Game Boy Advance

Chess

vs.

Advance Wars

-
- Symmetric game with asymmetric piece abilities

- Asymmetric game (different factories/cities between players) with asymmetric piece abilities and asymmetric roles

-
- Perfect information

- Imperfect information (fog of war)

-
- Goal of player elimination

- Goal of player elimination OR state/position achievement

-
- Mechanic of deterministic attrition

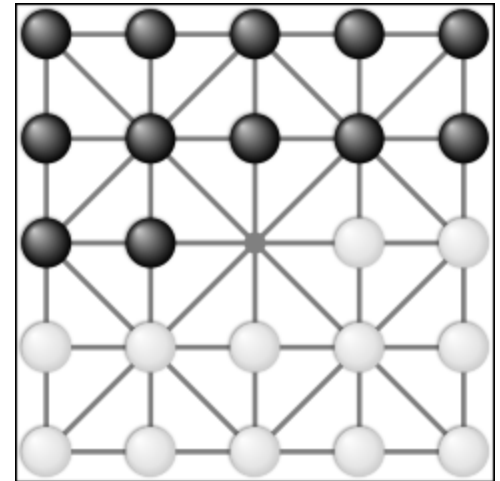
- Mechanic of non-deterministic attrition

Alquerque Group

Alquerque, The Game of The Stone Warriors, Fighting
Serpents, The Sixteen Soldiers

Alquerque

- Earliest record is from 1400 BCE, where a game board was discovered in a temple being constructed in Kurna, Egypt. The board is unfinished because it is believed the quarrymen made a mistake when drawing it.
- In the 10th Century, the Arabic book *Kitab-al-Aghani* refers to *quirkat*, a game that had been played in the Middle East for centuries.
- Muslims brought the game with them when they invaded Spain, at which point the game took its present name.
- The game and some variants were described by Alfonso X (1251-1284) in his *Book of Games*.
- Movement is along one of the given lines, and capturing is done as in checkers (and is obligatory).



Draughts

Checkers Group

Checkers (English Draughts)

- Draughts was invented around 1100 CE in the southern part of France using pieces on a chessboard but with the rules of Alquerque.
- King promotion was a rule that was extant by 1243 CE when Philip Mouskat wrote in his *Chronique* of it (lines 23617-20).
- Capturing was not compulsory until around 1535 when the rule was introduced in France.



Polish/Continental/International Draughts

- English draughts was replaced in France around 1650 by a variety known as “Le Grand Forçat”
- Around 1727, Le Grand Forçat was replaced with the game now known as Polish or Continental Draughts.
- Main rule difference involves Kings, which may move diagonally any number of unoccupied squares or may continue his jump any number of unoccupied squares after the piece jumped.
- Additionally, standard pieces may capture diagonally backwards in addition to standard Checkers capturing.

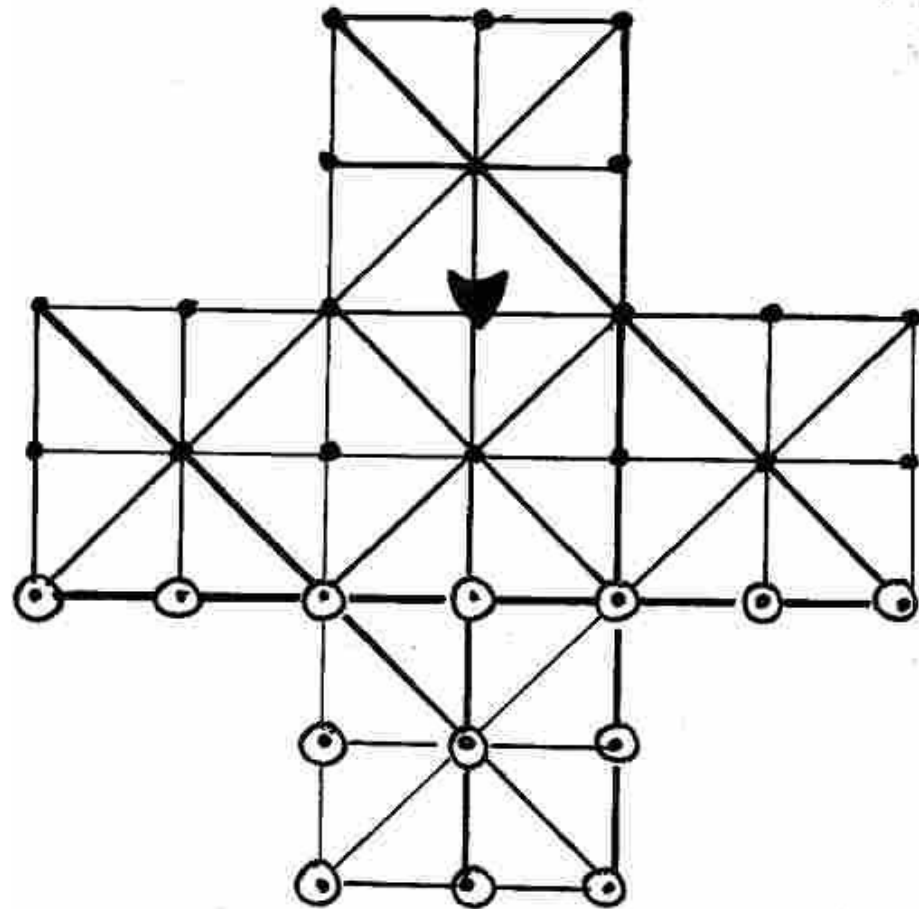


Tafl Group

Fox & Geese, Tablut, Hnefatafl, Cows & Leopards

Fox & Geese

- Originated in northern Europe and represents a battle between unequal forces, like all games in the Tafl Group.
- Halatafl (“Fox Game”) is mentioned in the Icelandic *Grettis Saga* c.1300 CE, which may be an early predecessor.
- During the reign of Edward IV of England (1461-83), a record in the Royal Household accounts noted a purchase of two foxes and 26 hounds of silver for two sets of Marelles.



Next Lecture

Next Lecture

- Position, Mancala, & Pattern Matching Games
 - Go Group
 - Morris Group
 - Mancala Family
 - Pattern Matching Games