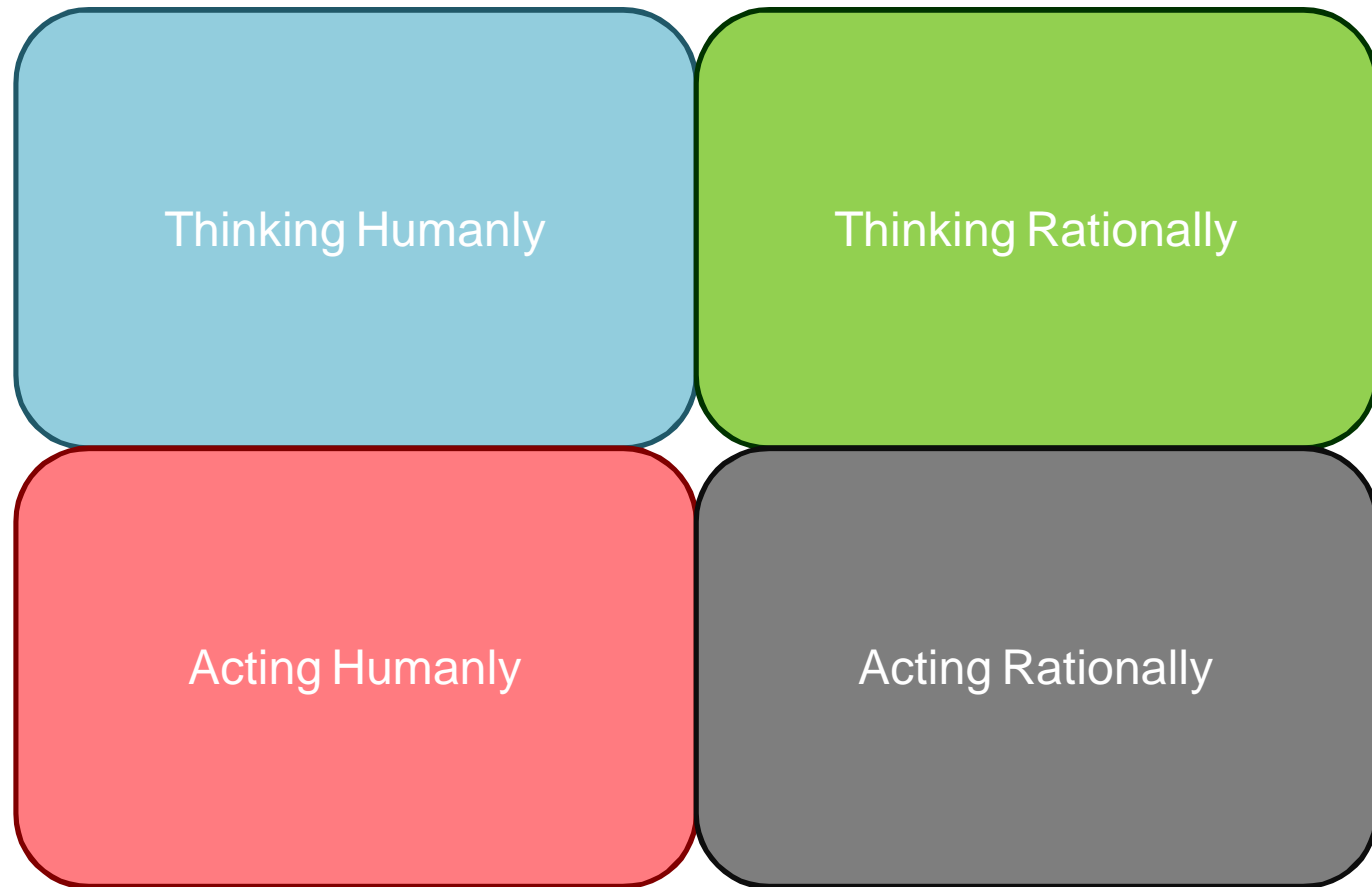




ARTIFICIAL INTELLIGENCE AND NEGOTIATION

Artificial Intelligence and Negotiation?

- What is artificial intelligence?



Artificial Intelligence and Negotiation?

- What is negotiation?



Negotiation is a process in which a joint decision is made by two or more parties. The parties first verbalize contradictory demands and then move towards agreement by a process of concession-making or search for new alternatives [2]

Negotiation is a basic means of getting what you want from others. It is a back-and-forth communication designed to reach an agreement when you and the other side have some interests that are shared and others that are opposed [3]

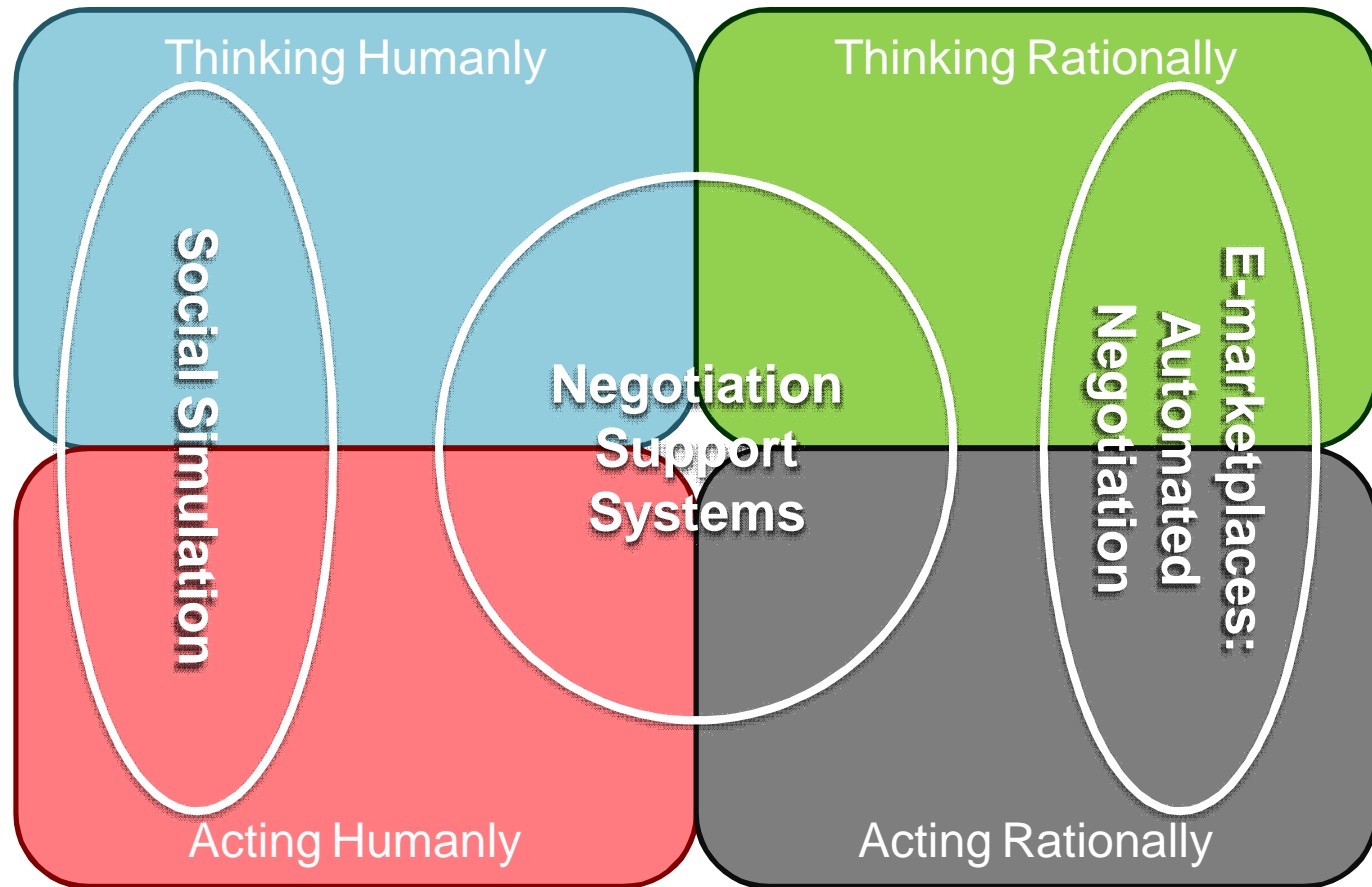


Artificial Intelligence and Negotiation?

- Are both disciplines compatible?
 - Yes!!
 - Goal: Grant software with the capability to negotiate and understand negotiation processes
 - Means: Computational negotiation models
 - Preference/Utility Models
 - Negotiation Protocol
 - Negotiation Strategy

Artificial Intelligence and Negotiation?

- Synergies between both fields:



Artificial Intelligence and Negotiation?

- E-marketplaces: Automated Negotiation
 - Thinking Rationally & Acting Rationally
 - Goal: Optimality according to the available information
 - Pareto Optimality
 - Nash Bargaining Point
 - Examples: Ebay, Amazon, etc...
 - Approaches:
 - Algorithmic Game Theory
 - Bounded Rationality Approaches & Heuristics
 - Mechanism Design

Artificial Intelligence and Negotiation?

- Social Simulation
 - Thinking Humanly & Acting Humanly
 - Goal: Mimick human behavior to provide predictions
 - Emotions, cultural factors, social identity theory, etc.
 - Examples: Supply chain simulation
 - Uses:
 - Pilot experiments
 - Train real negotiators
 - Predict the effect of new environmental conditions

Artificial Intelligence and Negotiation?

- Negotiation Support Systems
 - All-rounder!
 - Goal: Support one/all parties to reach an efficient agreement
 - Examples: AutoMed, Persuader
 - Approaches:
 - Enforcement/Recommendation
 - Best Response Mechanism
 - Reasoning about the opponent