CS344M
Autonomous Multiagent Systems

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Good Afternoon, Colleagues

Are there any questions?
Logistics

- Reading responses getting better
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  - Be specific about where in article you’re referring to
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  – Warren Powell, Friday at 11am (PAI 3.14)
  – Princeton University
  – “Unifying the Jungle of Stochastic Optimization”

• Role of a survey article
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- NYT Rodney Brooks article
Some Definitions

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(pic from pursuit slides)
Multiagent Systems

- Study, behavior, construction of possibly preexisting autonomous agents that interact with each other.
  - incomplete information for agents
  - no global control
  - decentralized data
  - asynchronous computation
Why Multiagent Systems?
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(7)

- Some domains require it. (Hospital scheduling)
- Interoperation of legacy systems
- Parallelism.
- Robustness.
- Scalability
- Simpler programming.

“Intelligence is deeply and inevitably coupled with interaction.” – Gerhard Weiss
Organizations

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Organizations

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- **Scientific community**: full solutions (perhaps with varying information) combined
Discussion

When would you use market vs. hierarchy?
Issues and Challenges

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- Engineering
Dimensions and issues

- cooperative vs. competitive
- communication
- trust
- recursive modeling
- coalitions
- game theory
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Pursuit Activity

Group 1: homogeneous, non-communicating

Group 2: homogeneous, communicating

Group 3: heterogeneous, non-communicating

Group 4: heterogeneous, communicating