16-867 Human-Robot Interaction

Week 2: Foundations: Communication
Addendums to last time

◊ Food policy
  ◊ No noise, no smells, no peanuts
◊ Laptops sit in the back
◊ TA: Kim Baraka
Ancestry of Interaction Studies

♦ Barnlund (Prof. Speech Communications, SF State)
  ♦ “the assumptive world of the individual”
Ancestry of Interaction Studies

◊ Barnlund (Prof. Speech Communications, SF State)
  ◊ “the assumptive world of the individual”
  ◊ “differences in perception make communication inevitable”
The Door Study
Ancestry of Interaction Studies

◊ Barnlund (Prof. Speech Communications, SF State)
  ◊ “the assumptive world of the individual”
  ◊ “differences in perception make communication inevitable”
Ancestry of Interaction Studies

◊ Barnlund (Prof. Speech Communications, SF State)
  ◊ “the assumptive world of the individual”
  ◊ “differences in perception make communication inevitable”
  ◊ “communication is initiated, consciously or unconsciously, to change the other person”
The Asch Experiment
Pitfalls of Interactive Communication

- Verbal – nonverbal discrepancy
- Attitude of infallibility
- Manipulative purpose
- One-way communication
- Threatening context
- Evaluative context
Elderly social robot crossing borders

- Use local experts or in-person visits
- Requirement of empathy through listening
- Speak and understand English and possibly Spanish
- Communication style issues
- Non-verbal social gestures very important and different
Intermission

◊ Let’s build teams!
  ◊ Program: HCII, Masters/PhD/Senior, etc.
  ◊ Programming YES/NO or expertise level
  ◊ Interested topics: _______________
  ◊ Optional: Robot platform available
Intermission

- Now that you have teams:
- Draft project statements are due Feb 1
Kenneth Burke

- Major literary theorist and philosopher
- Born in Pittsburgh 1897-1993
- Dramatistic Pentad is his most well-known analytical development
Formalizing Interaction: Burke
Formalizing Interaction: Burke

◊ Rhetorical

“the basic stratagems which people employ, in endless variations, and consciously or unconsciously, for the outwitting or cajoling of one another”
Formalizing Interaction: Burke

✧ Rhetorical

“the basic stratagems which people employ, in endless variations, and consciously or unconsciously, for the outwitting or cajoling of one another”

✧ Symbolic

“modes of expression and appeal in the fine arts, with purely psychological or psychoanalytic matters”
Formalizing Interaction: Burke

◊ Rhetorical

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◊ Symbolic

“modes of expression and appeal in the fine arts, with purely psychological or psychoanalytic matters”

◊ Dramatism: Motive-Contextual
Formalizing Interaction: Burke

◊ Dramatism: Motive-Contextual

Dramatistic Pentad

“not terms that avoid ambiguity but terms that clearly reveal the strategic spots at which ambiguities necessarily arise”
Formalizing Interaction: Burke

- Act
- Agency
- Agent
- Scene
- Purpose

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Formalizing Interaction: Burke

Act

What is being done

Agency

Agent

Scene

Purpose

Agent

Purpose

Scene

Agency
Formalizing Interaction: Burke

| Act | What is being done |
| Agency | Means by which an action occurs |
| Agent |
| Scene |
| Purpose |
Formalizing Interaction: Burke

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Act | Agency | Agent | Scene | Purpose
---|--------|-------|-------|--------
What is being done | Means by which an action occurs | Person performing the act | Scene | Purpose
# Formalizing Interaction: Burke

**Act** | What is being done
---|---
**Agency** | Means by which an action occurs
**Agent** | Person performing the act
**Scene** | Setting/background for action
**Purpose** | Birthday
### Formalizing Interaction: Burke

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- **Act**: What is being done
- **Agency**: Means by which an action occurs
- **Agent**: Person performing the act
- **Scene**: Setting/background for action
- **Purpose**: Reason or rationale behind the action

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Ambiguity: War

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# Ambiguity: Voting

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Roboceptionist

Agent

Act

Agency

Purpose

Scene
Apply the Pentad...
Your definitions of substance

◊ Taking a subject back to the ground of its existence
◊ Relationship of an agent to all other agents
◊ Means by which to explain the interrelatedness of different parts of the pentad
◊ Human motives
◊ Underlying thing
◊ Relationship to surroundings
◊ Essence or aspect of something
Substance (Burke)

◊ Geometric Substance
◊ Familial Substance
◊ Directional Substance
◊ Dialectic Substance
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund

Material
(product itself)
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund

Material
(product itself)

Topic
(product + designer)
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund

Gaia
(product + cosmos)

Interaction
(product + user)

Material
(product itself)

Topic
(product + designer)
An Analytical Cross of Interaction
Prof. Dick Buchanan, Burke, Barnlund

Material (product itself)

Interaction (product + user)

dialectic/metaphysical
Gaia (product + cosmos)

Reductive/geometric

Topic (product + designer)

Entitative/directional

Familial
Consider the iPhone...

- **Material**: (product itself)
- **Interaction**: (product + user)
- **Topic**: (product + designer)
- **Gaia**: (product + cosmos)
For Wednesday

◊ “Human-Robot Interaction: A Survey,” Goodrich & Schulz