Intelligent Virtual Environments for Agents
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Overall Aim and Hypothesis

Aim

To allow agents to participate in a richer, more complex and more intelligent way in their environment in the framework of an explainable and plausible cognitive model.

Hypothesis

- Current agents are limited by their environmental interaction.
- We can attempt to change this by improving the way in which agents interact with their environment.

Herb Simon (1969)

"Complexity of an ant's behaviour walking along a beach has more to do with the complexity of the environment rather than an inherent internal complexity of the ant itself."

Definitions: Agent

Russell and Norvig *Artificial Intellligence – pg 31, 1995*

*"An agent is anything that can be viewed as perceiving its **environment** through sensors and acting upon that **environment** through effectors."*

d'Inverno and Luck *Understanding Agent Systems – pg 2, 2001*

*"... agents have been proposed as **situated** and **embedded** problem solvers that are capable of functioning effectively and efficiently in a complex **environment**."*
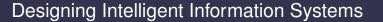
Wooldrdige *Multiagent Systems - pg 29, 1999 - editor G. Weiss*

*"An agent is a computer system that is **situated** in some **environment** and that is capable of autonomous **action** in this environment in order to meet its design objectives."*

Definition: Environment

Requirement for Virtual Environments

Definition: Intelligent

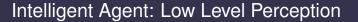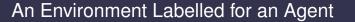# Designing Intelligent Information Systems

Classical AI vs Situated Cognition

Virtual Environments

Environmental Representation Options

Intelligent Agent: Low Level Perception

An Environment Labelled for an Agent

Labels, Names, Categories and Plans

An Environment Labelled for an Agent

Summary