New Experimental Environment

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Goals

- Provide a simple environment suitable to illustrate:
  - Subgoals
  - Chunking
  - Reinforcement Learning
  - Episodic Memory
  - Semantic Memory
  - Emotion

Environment Properties

- Indoor, 2 ½ D
- Built on Soar2D framework
- Dynamic entities move in continuous x,y
- Objects and walls occupy full grid squares

Blocks and Ramps

- Blocks are stackable, each is height 1

- Walls are height 2

- Ramps are used to get on top of blocks

- Blocks and ramps can be moved by the Soar bot

Other Objects

- "Chocolate"
  - Intense pleasure
- "Shock"
  - Intense pain
- Defined in map file, easily extensible

Dynamic Entities

- Simple behavior
- Mouse
  - Runs away from Soar bot when it notices it
  - Soar bot receives pleasure if it collides with mouse
  - Eliminated when it falls off a block
- Dog
  - Pursues Soar bot when it sees it
  - Soar bot receives pain if it collides with dog
  - Can be trapped

Soar Bot

- More than one can exist
- Perception
  - Vision
    - Limited vision (cone)
    - Can be oriented different than direction of travel
  - Sound
  - Pleasure/Pain

Soar Bot

- Action
  - Move forward/backward
  - Rotate
  - Pick up/Drop objects (Mice, Ramps, Blocks)
  - Transmit and receive messages to other bots

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