

ACT-R 7 and Recent Updates

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Outline

- Version change
- Utility rewards
- Environment tools
- AGI additions

ACT-R 7

- ACT-R 6.1 is now ACT-R 7
 - Renamed the loader load-act-r.lisp
 - The logical host is now ACT-R
 - Removed the 6.0 backward compatibility switch
 - Removed the MCL device
 - Uniformity in production action syntax
 - All these actions: =, +, *, and @ have same syntax

ACT-R 7 Version Numbers

- Unlike 6 and 6.1, 7 has real version numbers

7.0.11-<2054:2016-07-15>

Architecture.Major.Minor -<Repository:Release Date>

- Backward compatible within a major version
 - A model written for 7.y.x will run in 7.y.z if $z \geq x$
 - Minor version number typically additions to the system
- Major version changes mean may not be compatible
 - Written for 7.y.x may not run in 7.z.x where $y \neq z$
 - Significant change or addition

Version Test Command

- Written-for-act-r-version
 - Checks a specified version against current and prints a warning if not compatible
 - Recommended as a top level call in models/modules that are being distributed

```
(written-for-act-r-version "7.0.12" "Special new Module")
```

```
#|Warning: Current ACT-R minor version 11 is older than minor version  
12 specified in 7.0.12 for Special new Module.  
Some features may not be implemented. |#
```

Other Version Tests

- Keywords for version on **features**
 - :ACT-R-7.0.11 :ACT-R-7.0 :ACT-R-7
- System parameters

```
> (ssp :act-r-version
      :act-r-architecture-version
      :act-r-major-version
      :act-r-minor-version)
("7.0.11-<internal>" 7 0 11)
> (ssp :check-act-r-version "7.0.10")
(T)
> (ssp :check-act-r-version "7.0.12")
(NIL)
```

New Utility Credit Assignment Option

- Currently (sgp :ul t) all selected productions
- New (sgp :ul complete) only productions for which all actions have “completed”
 - Production must have fired
 - All requests signaled as complete by the receiving modules
 - Productions that are not complete remain in the history list for later reward

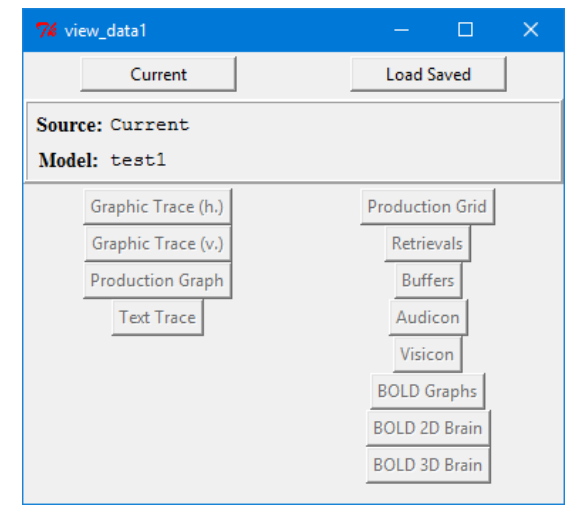
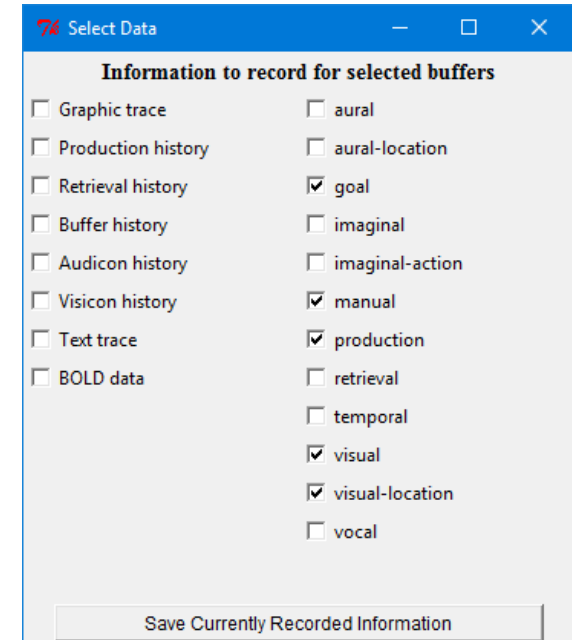
Avoid “bad” Reward Killing the Messenger

- A production that provides a reward gets its own reward (maybe not with complete)
- New production parameter to avoid that

```
(spp <production-name> :fixed-utility t)
```
- Removes that production from utility learning calculations

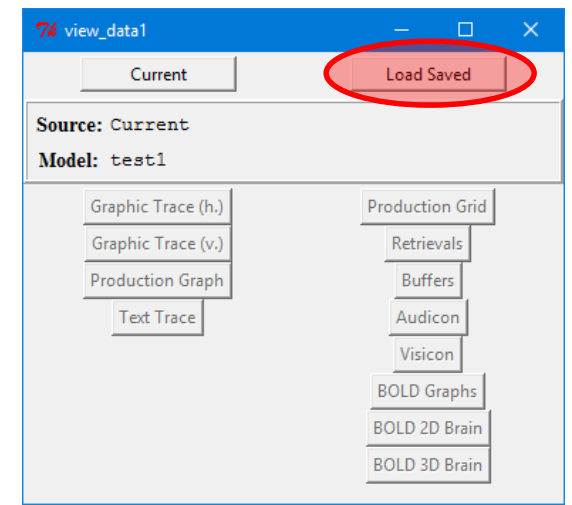
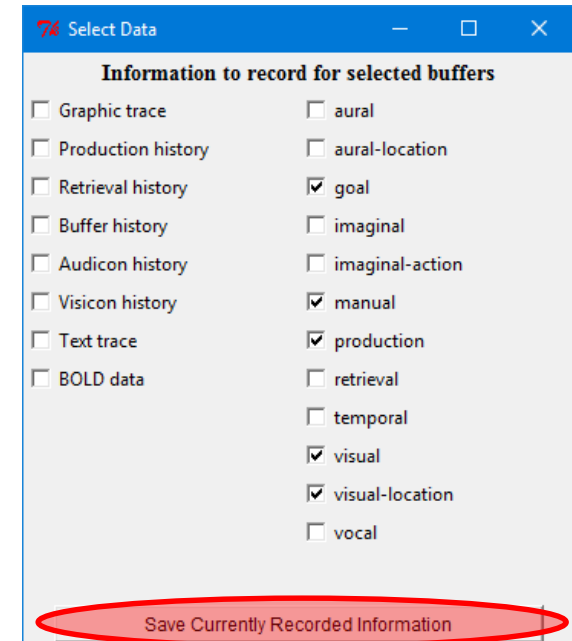
Environment History Tools

- Redesigned interface
 - Select data button
 - Enable dialog for all options
 - View data button
 - Buttons for opening individual tools all together
- Added new tools
 - Visicon & audicon history
 - Text trace recording



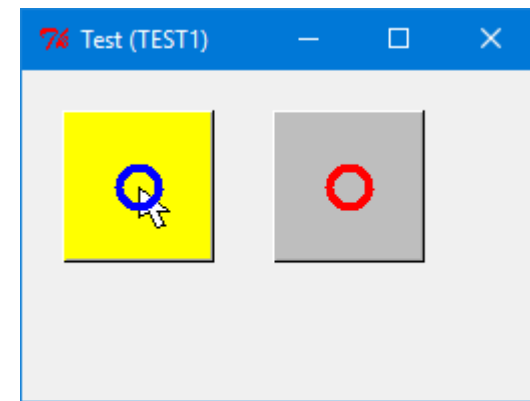
Environment History Tools cont.

- Save and Load
 - After running a model all recorded info can be saved to a file
 - Those files can be loaded to view the information later
 - Multiple different data sets may be loaded for comparison



Environment Experiment Windows

- Use simulated buttons
 - Still work for humans and models
 - Show appropriate color on all systems
 - Fixation ring and simulated mouse show in front of button
- :show-focus parameter
 - Can be set to a color name instead of just t
 - Useful for multiple model situations
 - Only supported in Environment right now



New AGI Commands

- Allow creation and modification of text, buttons, and lines
 - create-{text | button | line}-for-exp-window
 - modify-{text | button | line}-for-exp-window
- Examples with a simple 2 player game
 - examples/model-task-interfacing

Using Extras

- New command: `require-extra`
 - Specify the directory name

```
(require-extra "blending")  
(require-extra "emma")
```

- Put it at the top-level of a model file
 - After `clear-all` best so that modules can be created
- Loads all of the necessary files if not already