Interfacing External Simulations: The ACT-R Driver Model

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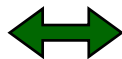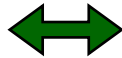
A Tale of Two Environments

- **The LISP environment**
  - originally created to interact with ACT-R
  - cars, road points, etc. put in as dialog items
    - looks pretty bad
  - full vehicle dynamics
  - standard protocol files to replay in C++ environment

- **The C++ environment**
  - originally created for simulator data collection
  - cars, road, mirror, etc. rendered with OpenGL
    - looks pretty good
  - full vehicle dynamics
  - standard protocol files for data collection & replay

Dario Salvucci, Drexel University. ACT-R Workshop, July 2003.
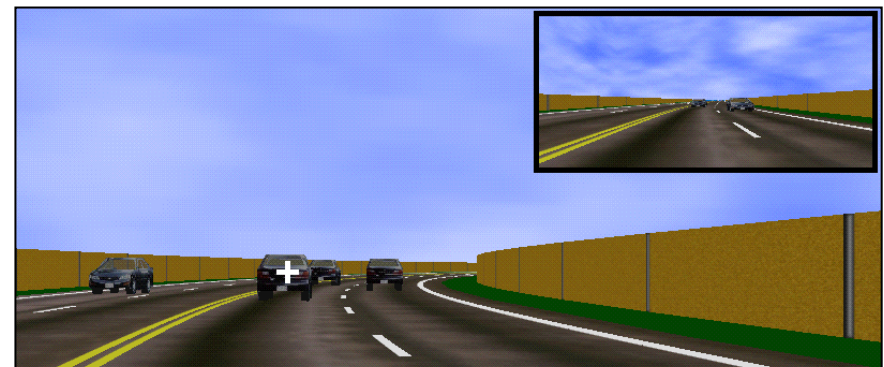
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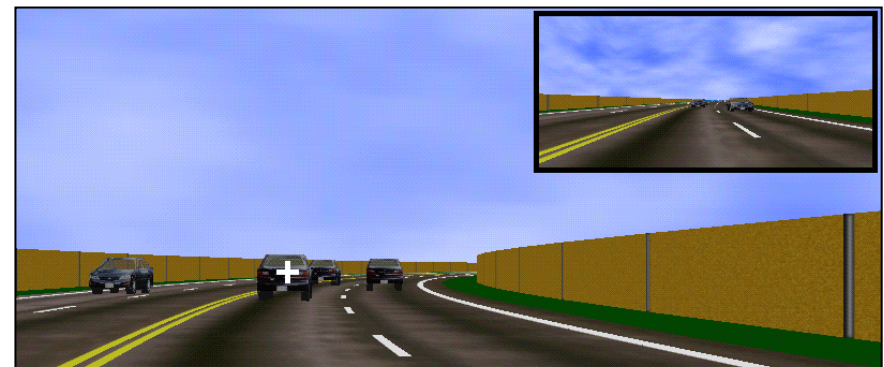
A Tale of Two Models

- **The ACT-R / LISP model**
  - the most true / plausible model of behavior
  - includes all procedural & declarative knowledge
  - full P/M functionality
  - approximately real time

- **The C++ model**
  - a close approximation to the ACT-R model
  - includes all procedural & declarative knowledge
  - limited P/M functionality
  - much faster than real time

Issues

- **Maintaining 2 versions of the environment**
  - so far, hasn't been a big problem... but could be
- **Maintaining 2 versions of the model**
  - we know which is the *true* model
  - how do we know when the C model is close enough? or, can we trust the C model's predictions?
    - perform all validations for both models? maybe...
- **Bottom line**: So far, we've had good reasons for maintaining *both* models & environments, and we expect to continue this for a while...