

A [Really Fast] Tour through Some PA Applications

ICT Workshop on
Empirical Research with Pedagogical Agents

22 October 2014

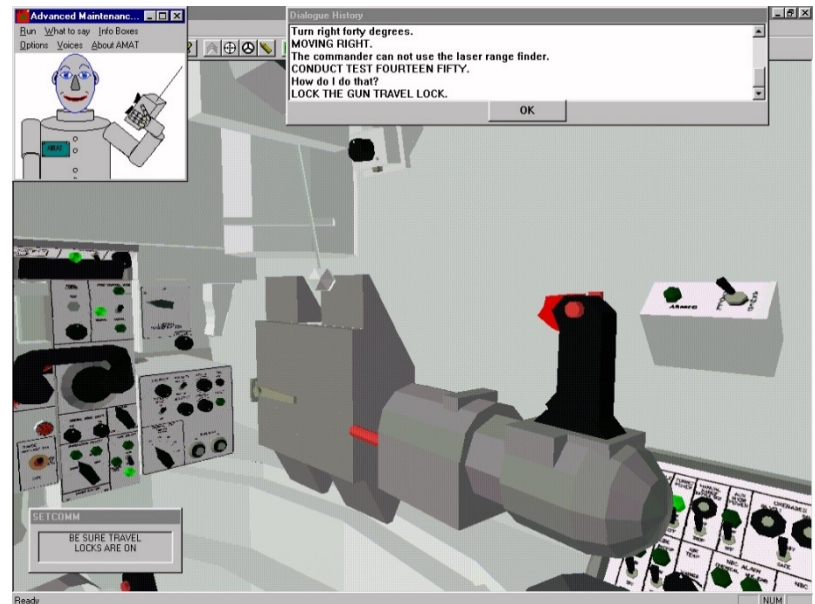


SOARTECH

Modeling human reasoning.
Enhancing human performance.

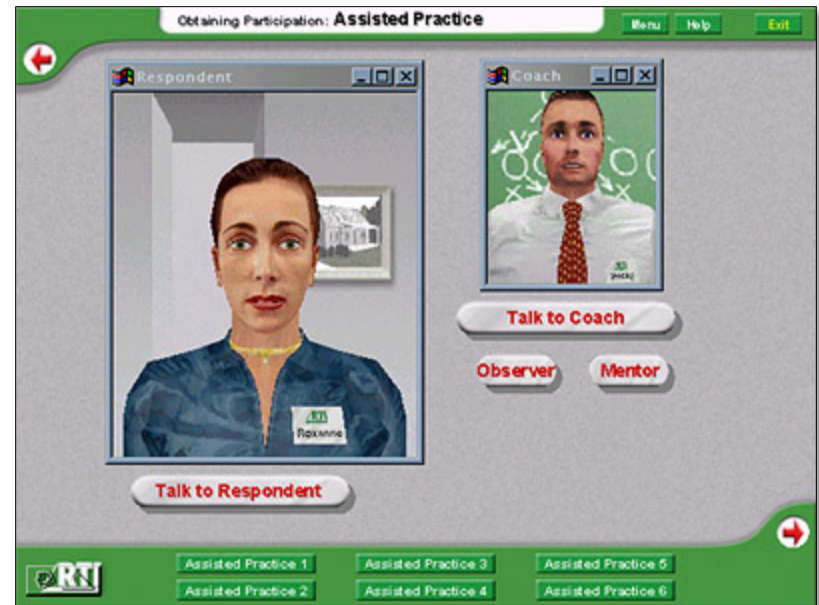
Maintenance Training Assistant

- **What:** Assistant for repair of the M1A1 tank.
- **Why:** Guide user on diagnostic tests to replace bulky TM.
- **Relevance:** First use of a PA.



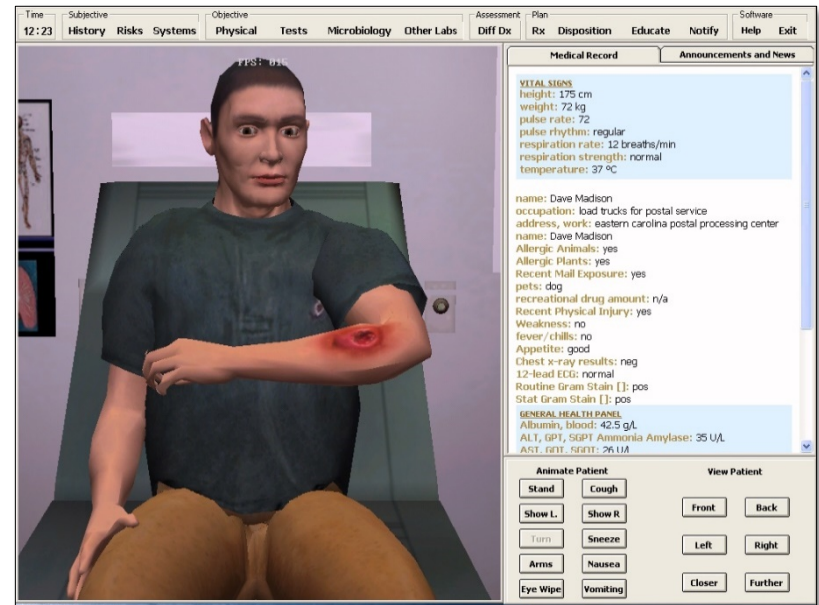
Door-to-Door Survey Training

- **What:** Simulate first 30-60 seconds of a household interview.
- **Why:** Research on survey non-response suggested the need to identify and address respondents' concerns immediately with appropriate, tailored language.
- **Relevance:** Coach agent could demonstrate, mentor, observe.
- **Issue:** Too advanced for Census bureau at the time...



Virtual Bioterrorist Agent

- **What:** Provide clinicians with practice in diagnosing and treating emerging infections and potential incidences of bioterrorism.
- **Why:** Practice on skills that are uncommon but potentially life-threatening.
- **Relevance:** Coach agent could demonstrate, mentor, observe.
- **Of interest:** Begun pre-9/11.



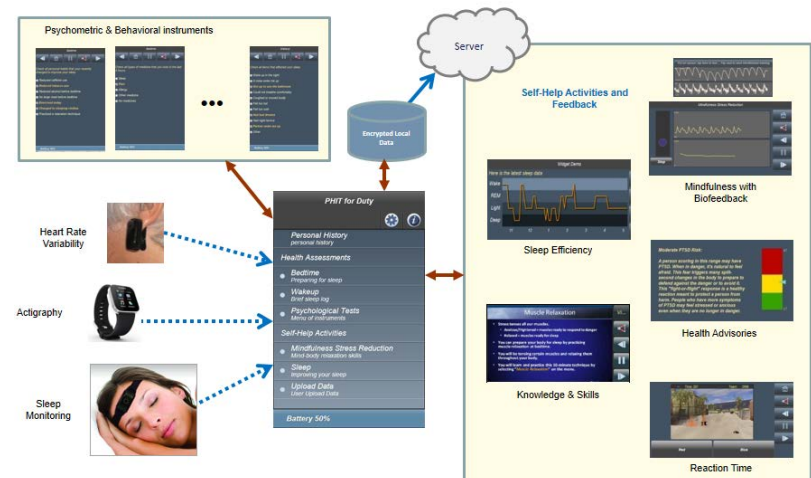
Virtual Pediatric Standardized Patients

- **What:** Simulation intended for medical school students rotating through pediatrics to train and assess their basic communications and procedural skills while interacting with kids.
- **Why:** Key training that cannot be accomplished using standardized patients.
- **Relevance:** Different agents to represent age, gender roles.



PHIT for Duty

- **What:** Mobile application integrating health and behavior assessment with self-help intervention activities for psychological health.
- **Why:** High incidence of psychological problems in post-deployed personnel.
- **Relevance:** Task manager schedules screening, assessment, self-help intervention.
- **Issue:** Now usurped by Apple Watch and other gadgets?



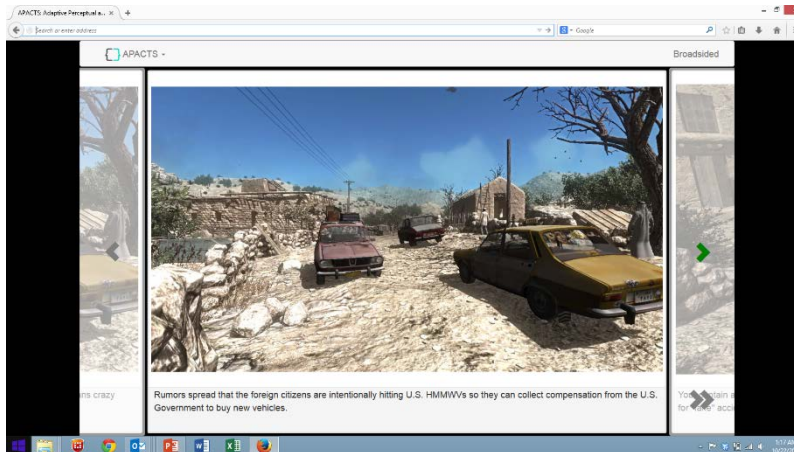
Virtual Small-Unit Training

- **What:** Realistic interactions with virtual characters such as teammates, adversaries, and other non-combatants.
- **Why:** Replace scripted or human-controlled entities.
- **Relevance:** Several dozen Soar agents.



APACTS

- **What:** Rapid development tool for executing dynamic social and tactical scenarios.
- **Why:** Focus on sensemaking and social affordances.
- **How:** Allow user to annotate social and tactical cues and choose alternative paths leading to different scenario outcomes.
- **Relevance:** Integrating a pedagogical agent for assessing student proficiency and enabling individualized adaptation.



Lessons Learned

- The choices among technologies are complex.
 - Video is typically more compelling but surely not as flexible as graphics.
 - Same with prerecorded vs. generated speech.
- There is no shortcut to a successful application.
 - Simulation environments, behavior representation, animations, language models, branching dialog are all needed.
 - Authoring tools help, but no way to replace blood, sweat, & tears.
- Engagement (“buy-in”) is critical.
 - May or may not involve rapport-building.
- For training and assessment, the tie-ins to learning objectives should be overt and concrete.
 - During ‘play’ a PA should rarely intervene, but instead act as observer or teammate (?).
 - During review a PA can take on a coaching role.