COSMOPOLIS
An MMOG Test Bed for Social and Behavioral Models

USC GamePipe Laboratory
Michael Zyda
Scott Easley
Marc Spraragen
Balakrishnan Ranganathan
CMU CASOS
Peter Landwehr
1. Cosmopolis for the public
2. Recontextualization: Cosmopolis for researchers
Outer Game

World-Building MMOG

Player-ruled cities

Newsfeeds
Demo: World-Building
Subgames

Varied gameplay

Accessed individually or through outer game

Payoffs can be tied to outer game
Demo: WarPipe Action Subgame
Multiple Player Type Appeal

Achievers
Explorers
Socializers
Casual Gamers
Player Killers
Cosmopolis for Researchers (1)

1. A large, diverse community record
   1. Completely free and downloadable
   2. Single world with quantized interactions
   3. Support for large-scale events
   4. Rich and comprehensive logs

2. Customizable experiment environments
   1. Humans and/or agents
   2. Linked or isolated
   3. APIs, custom data access, etc.

3. Multi-purpose platform
4. Inputs

- Economy / GDP
- Newsfeeds (behavior-affecting)
- Staged events
Demo: Moroccan Crisis
1. Access and formats
2. Visualizations
3. Analysis and inferences
• USC is partnering with Carnegie Mellon’s CASOS group for social and behavioral model experiments in Cosmopolis.

• The Construct Modeling Engine
  • Multi-agent
  • Transactive Knowledge
  • Homophily
  • Configurable
Demo: Western Bar
Scenario: Teams Poker and Construct

•H: Transactive knowledge of partner quality results in better choices and greater success in team-based activities.

•In Cosmopolis:
  •Players choose and rank partners in a poker variant
  •Provide players with ranking information partly informed by ex-partners’ rankings.
  •Get players via game incentives, research incentives, and general interest in the game
  •Log successes, partnerships, rankings, and data presented.

•In Construct:
  •Implement simulation: X agents that interact (are partners) split into Y groups
  •Interaction teaches each player facts about the other player and their opinions
  •Different players make more or less use of facts in making partner choices
  •Examine how different populations use transactive knowledge

•Validate Construct’s results against Cosmopolis
Researching the Data

1. Access and formats
2. Visualizations
3. Analysis and inferences
Limitations

1. Purely agent-based background processes not really suited for our platform
2. In-game, players don't necessarily think like terrorists or other real world archetypes—they play to complete game objectives
Next Steps

Playtesting

Research Partnerships

AI API
The USC GamePipe Laboratory

• Michael Zyda, Director
• Zyda@usc.edu
• http://gamepipe.usc.edu