Language, Storytelling and Videogames

Visit from the students of the ENS de Cachan, Paris

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Federico Peinado

- Computer Engineer (UCM 2002)
- European Doctor (UCM 2008)
- Lecturer on
  - Systems Programming
  - Videogame Development (Master) www.videojuegos-ucm.es
- Other interests
  - Computer Science Museum *García Santesmases* www.fdi.ucm.es/migs (History of Videogames)

Not only the typical *games*!

NIL Research Group

- Natural Interaction based on Language [nil.fdi.ucm.es](nil.fdi.ucm.es)

- Publications since 1998 on
  - Natural Language Processing
    - Text Comprehension & Generation
  - Information Retrieval
    - Text Mining, Summarization, etc.
  - Knowledge Representation
    - Ontologies & Semantic Technologies
  - Artificial Intelligence & Computational Creativity
    - Evolutionary Algorithms, Case-Based Reasoning, etc.
  - Affective Computing & User Modelling
  - ...

Story Generation

- ≈ *Poetry Generation* (Gervás, 2000)
- Evaluation of Basic Plots (Peinado, 2008)
- Extraction of Structural Schemas from Simple Plots (León, 2010)

Not the typical *stories...*

Once upon a time... there was a princess. The princess said not to go outside. The princess went outside. The princess heard about the lioness. The lioness scared the princess. The lioness kidnapped the princess. The knight departured. The knight and the lioness fougth. The knight won the fight. The knight solved the problem of the princess. The knight returned. A big treasure to the knight!

(Peinado, 2008)

John was in the bus stop. A man was in the bus stop. John realized that it was late. He was surprised. John asked the time to the man, and he said that it was two o'clock. John supposed that he was going to die. Some time before, John had agreed with a godfather that he would pay him some money before 2 o'clock. John wanted to ask for help to the man in the bus stop. The man in the bus stop, then, said that it was too late, and he killed John.

(León, 2010)

Interactive Digital Storytelling (IDS)

- Reviews of the State-Of-The-Art

- Role-Playing Games & The Game Master Paradigm

- Emergent Gaming

- Remote Control of Narrative Environments

- Characters with Beliefs, Feelings, Desires and Intentions
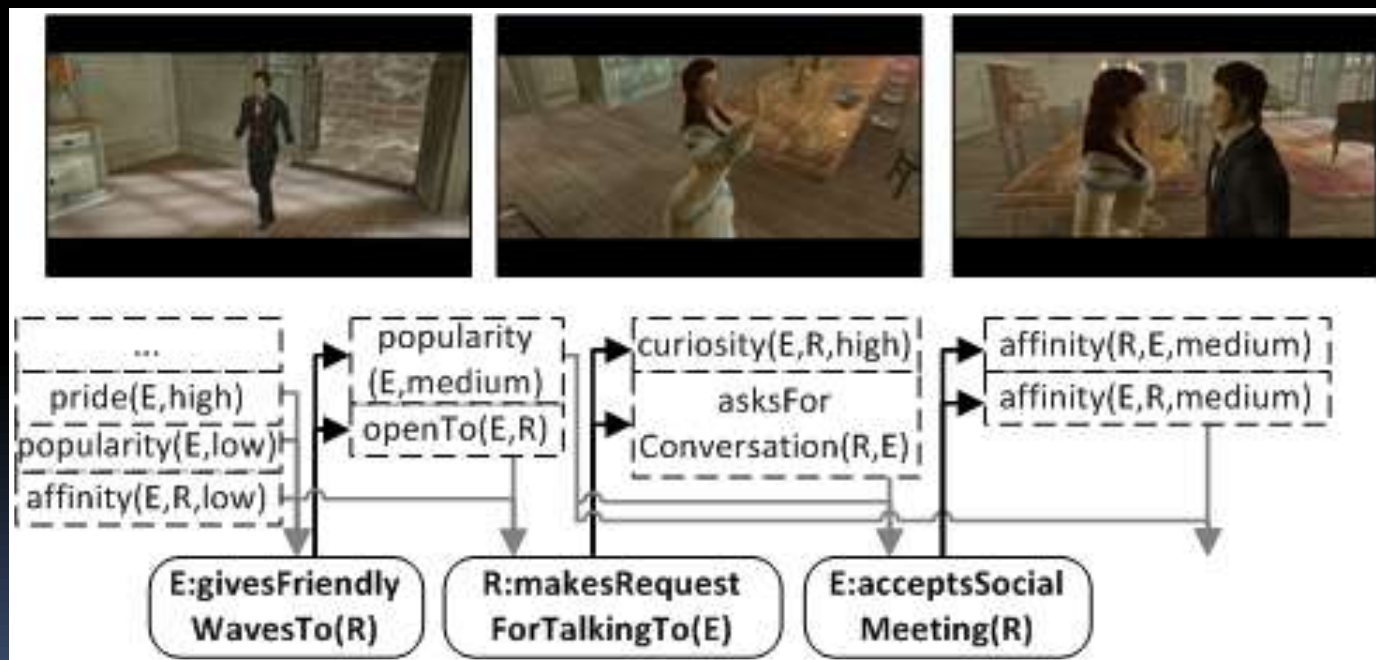
What is IDS?

...

Interactive

Digital

Storytelling

Example: *Interactive* Affair

- Planning with *literary feelings* operators
  - Madame Bovary (Flaubert, 1857)

(Peinado, Cavazza and Pizzi 2008)

Rodolphe

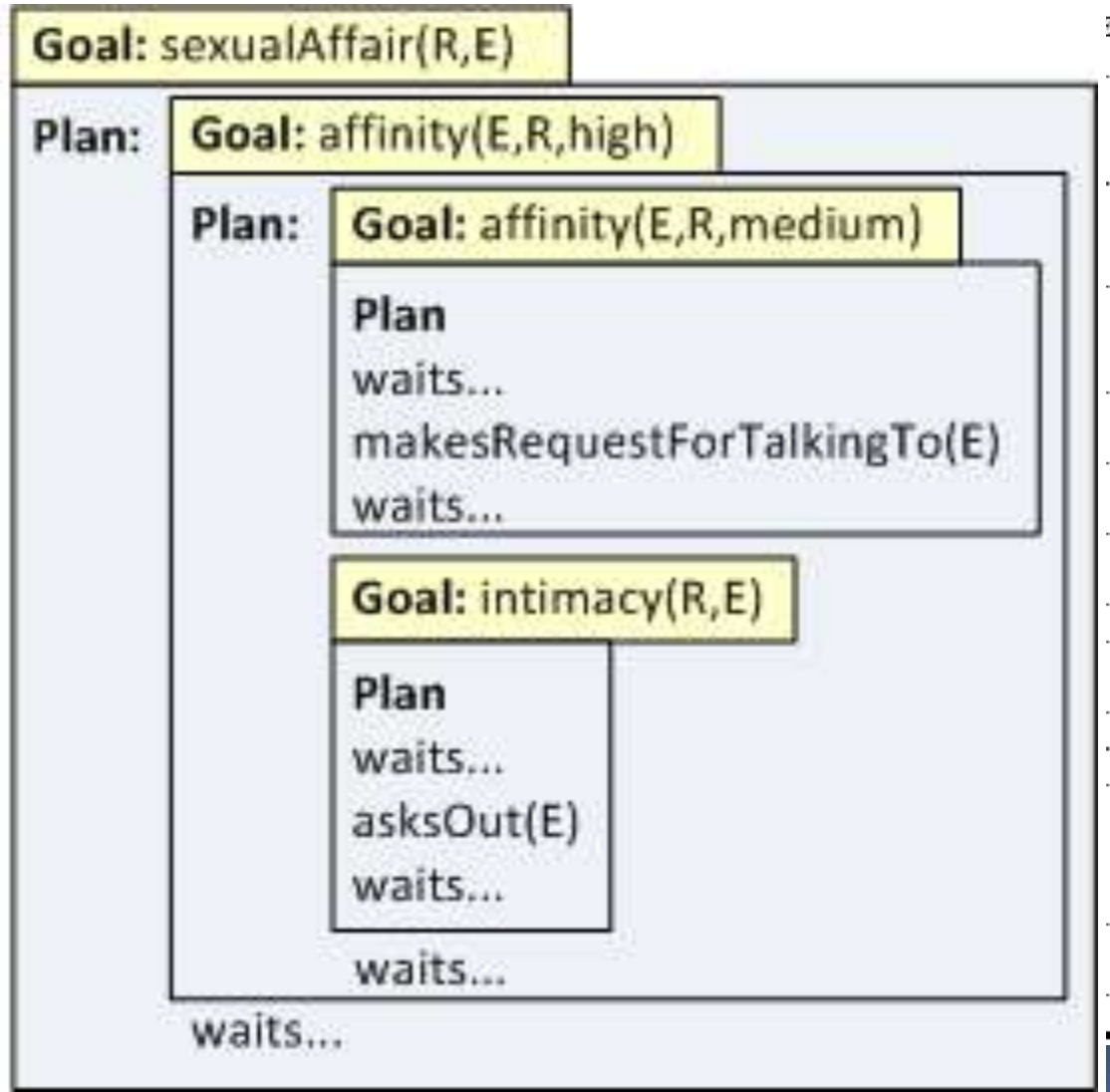| Perceptions	Feelings | Beliefs	Desires ▶ Goals	Actions [Plans]
…	…	sexualAffair(E)	
E:disappointedIn(C)	| E:angerTowards (C,medium) | E:pride(high)	▶ sexualAffair(E) └▶ E:affinity(R,high) └▶ *E:affinity(R,medium)* └▶ E:intimacy(R)	[*waits*, makesRequest ForTalkingTo(E)]
E:givesFriendly	| E:openTo(R)		[*makesRequest...*

Beliefs

pride(E,high)
affinity(E,R,high)
wifeLoyalty(E,low)
intimacy(E,R)

...

Rodolphe (R)

Feelings
affinity(R,E,medium)

Goal: sexualAffair(R,E)

Plan: **Goal:** affinity(E,R,high)

Plan: **Goal:** affinity(E,R,medium)

Plan
waits...
makesRequestForTalkingTo(E)
waits...

Goal: intimacy(R,E)

Plan
waits...
asksOut(E)
waits...

waits...

waits...

Emma

Perceptions	Feelings | Beliefs	Desires ► Goals	Actions [Plans]
...	...	satisfaction(high)	
disappointedIn(C)	angerTowards (C,medium) | unaware pride(high) | unaware	popularity(high)	givesFriendly WavesTo(R)

Beliefs
popularity(E,low)
affinity(R,E,high)
intimacy(R,E)

Emma (E)

Feelings
pride(E,high)
affinity(E,R,high)
wifeLoyalty(E,low)
intimacy(E,R)
...

Desire: satisfaction(E,high)

Desire: popularity(E,high)

Reactions
* givesFriendlyWavesTo(R)
* acceptsSocialMeeting(R)
* saysSomethingInConfidence(R)
...

Desire: womanhood(E,high)

Reactions
* makesLoveDeclarationTo(R)
* acceptsOut(R)
* isKissedBy(R)
...

| joyOfLove | satisfaction(high) C.popularity(low) | | |

Authoring Tools for IDS

- Like the *Level Editors* of Game Designers
  - □ World Simulation
  - □ User Interaction
  - □ Narrative Elements
    - ▪ Events
    - ▪ Characters
    - ▪ Discourse
    - ▪ …
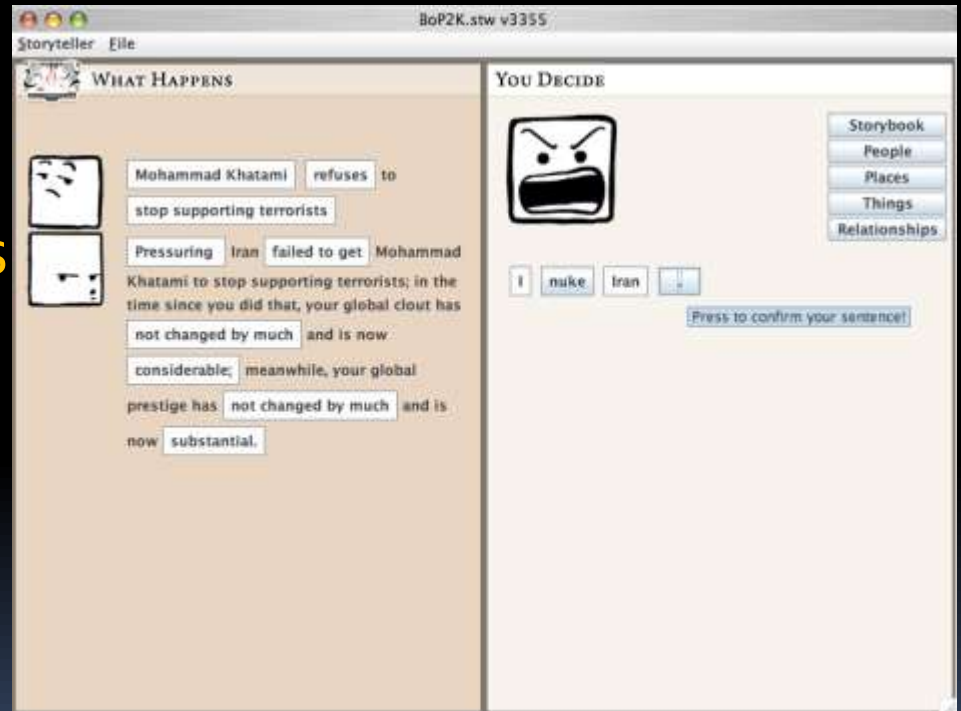
Storytron *(Crawford, 2009)*

Research Stay Proposal

- **A Contribution to the Development of an Author Toolkit for Modeling Narrative Events and Non-Player Characters' Behavior in Videogames**

- New IDS architecture (design / prototype)
  - Author toolkit for interactive stories
    - Events & Characters
  - Java, Swing, XML, Eclipse and similar technologies
  - 4.5 months = Architecture, model and GUI
  - 6-8 weeks = Only one of these

Opinions, Doubts, Suggestions...

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