Interactive Narrative

Background & Highlights

Historical Examples

- Text-based adventure games

- Hypertext fiction / Literary background

- MUDs

Modern Inquiry

- Modern Computer Games

- Story Generation

- Oz Project & Believable Agents

- Animation concerns

- AI automated agents / Emergent Narrative

Alternative Approaches

- Theatre / Improvision

- Filmic Approach

Interactive Narrative?

- Literary critics postulate different levels of interaction with a text

- Technological advances mean that interaction is literal and follows on Barthes' observation about the author's death

Interactive Narrative?

- New possibilities for user involvement and generation of content

- Can lead to story creation, which presumably is a highly engaging and creative act, thus a worthwhile goal

Historical Examples

Eaten by a grue?

- Text-based adventure genre kicked off with early parser-based games e.g. Zork 1
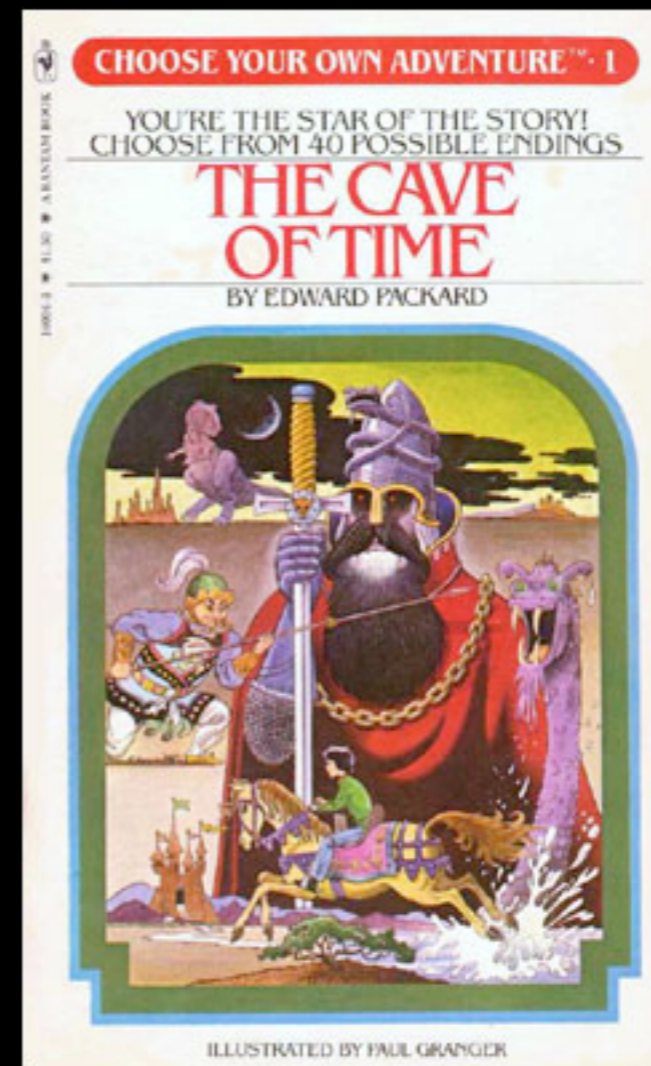
Interactive Fiction

- First confluence of computer games and literary narratives

  - Text adventures

  - Story navigation

  - Puzzle solving

- Peaked in 1980's

Analog Parallels

- Choose Your Own Adventure books
  - Bantam 1979-1998
- More serious works
  - Oulipo (1960's-now)
  - Hypercard (1987)

Click-click-hypertext

- Bush's 1945 'memex' introduced the concept

- Nelson coined the term and did the early work (1965-1974)

- Berners-Lee @ Cern invents the WWW (late 1980's)

Hypertext Fiction

- As early as 1994, Douglas Cooper's 'Delirium' demonstrated 4 parallel story threads

- From the literary camp, researchers such as N. Katherine Hayles, George Landow, Juan Gutierrez herald the revolutionary aspects of this type of literature

MUDs

- Player interaction heats up

- Persistent worlds, multiple connections

- First MUDs almost all Tolkienesque/D&D fantasy worlds

MUDs

- Variants cropped up - sci-fi, other cult classics, also research interests, social settings

- Early examples ran on academic networks around 1977-1979 (MUD1, Oubliette, Avatar)

- TinyMUD - 1989, DikuMUD - 1991

MUDs

- These interactive textual environments often hosted role-playing and cooperative storytelling

- Modern MMORPGs can be seen as descendants

- Sherry Turkle investigated identity issues

Graphical Adventures

- 1983 - Sierra On-Line creates "King's Quest 1"

- Many Lord of the Rings adaptations

- Parser-driven era lasts until 1993 (Gateway II: Homeworld)

Early Issues

- Issues around this time dealt with puzzles versus fiction as evidenced by criticism such as "Crimes Against Mimesis" (archived at http://www.geocities.com/aetus_kane/writing/cam.html)

- Some of the earliest consideration of player agency versus author privilege

Inspiration for...

- Survival Horror (Alone in the Dark, Resident Evil, Silent Hill)

- Platform-Adventure (Metroid, Castlevania)

- Action role-playing (Baldur's Gate, Secret of Mana)

- First-person action-adventures (Metroid Prime, maybe Half-Life?)

- Deus Ex, System Shock also take cues

Interactive Fiction

- Emily Short (Galatea, Savoir-Faire, Metamorphoses)

- "I start by asking myself, 'What does the player do in this game? What kind of interaction is he allowed? What influence do these actions have during crisis points in the plot?'"

Short quote

- "But the point is that I always try to design in such a way that I know what the player's going to be allowed to change, when, and how; and teach the player in advance what he needs to know in order to participate in the story."

- (http://www.mobygames.com/featured_article/feature,27/section,192/)

Modern Inquiry

Story Generation

- Grasbon & Braun 2001 - story functions

- Chris Crawford 1992 - Erasmatron -> Storytron -> Swat (released this year?)

- "Interactive storytelling" is his term, which tries to distinguish itself from IF by focusing on drama and dynamic circumstances rather than puzzles

People Games

- In Chris Crawford on Game Design he coins the term People games, which should focus on goals of a social nature that focus on character interactions.

- Goal: Computer games as a viable medium of artistic expression

AI research comes in

- Knowledge Representation/Ontology approaches to generate stories at a high level

- Production-rule based (rete) pattern matching

- Basis for Facade etc.

Oz Project

- School of Computer Science, CMU

- Mateas, Stern, Bates, Loyall, Reilly et al

- Focus: Interactive Drama

Interactive Drama

- We use the phrase "interactive drama" to mean the presentation by computers of rich, highly interactive worlds, inhabited by dynamic and complex characters, and shaped by aesthetically pleasing stories. People interacting with these worlds will be called "interactors." A similar notion, which has influenced our work, has been presented by Laurel (Laurel 89, Laurel 91).

Oz System

- Oz system allows authors to create and present these dramas, using a presentation layer and a drama manager

Young

- plan-based interactive narrative architecture

  - centered around accommodating user's actions

Weyhrauch

- drama manager uses game theory to select appropriate story events

  - centered on sustaining dramatic progress

Stern and Mateas

- story engine selects events at run-time based on notion of beats

  - focuses on adapting the narrative according to user's interactions and author's story goals

Believable Agents

- nature of character / interactive personalities

    - language use and generation

    - nature of interactive worlds

    - portrayal of emotion is key

    - dramatic presence is also relevant

Animation / Low-level

- Anticipatory AI and Compelling Characters - Bruce Blumberg

- besides generating narrative arcs and character actions, there are other big issues such as path planning, squad planning, and goal-directed behaviour

However...

- compelling and emotional characters require proper body language and anticipatory behaviour

- e.g. looking around, displays of fear, bravado, shifts in weight

Importance

- provide clues as to motivation, action, emotion

- this is taking advantage of what traditional animators know about conveying these clues

Autonomous Agents

- M Cavazza's work on AI-based World behaviour

- Riedl, Stern, Dini: Storytelling vs Simulation

- Tradeoff of control vs coherence

- *Sims*-like characters, personal goals

Sims

Emergent Narrative

- emotional intelligent characters (Aylett, Louchart et al. 2005)

- Aylett - user's experience maps to narrative

  - social simulation

- constraints satisfaction (pedagogical constraints, temporal constraints)

What emerges?

- Weyhrauch (1997) - plot points, system interventions

- IDA (Magerko 2005) - human authored story directs autonomous characters

- Mimesis (2003, 2004) - generative planning approach to create interactive stories

- Facade - reactive planner dynamically assembles a story organized around beats

More proposals

- Riedl (2005) - automated story directory generates a high-level narrative to coerce the player's experience towards

  - Conflicts cause re-planning, new storyline

  - Nonconflicting actions allow autonomous NPC actions

Still open

- How to manage the conflicts between authorial intent (or at least the desire for coherence) and player control

Alternative Approaches

Theatre / Improv

- Aylett's theory of emergent narrative is in the style of improvisational drama

- Episodic, "In character", unscripted

- sub-plots arise from interactions between characters

- Provides inspiration for handling narratives

Filmmaking

- Seif El-Nasr's work focuses on improving engagement using filmic dramatic techniques -> Mirage project

- draws on Stansloviski's, Benedett's acting, screenwriting, directing theories

Filmic contributions

- How to ensure dramatic arc contains important plot components?

- Timing, pacing, magnitude?

- solutions: use of Ticking Clock, Character arc

Summary

- Literary background includes popular culture and more academic critical approaches

- Text, adventure background

- Now rooted in autonomous, believable agents, well-animated and motivated

- Still open questions surrounding control vs coherence, narrative vs interaction