Meaning What We Play

Games, Fiction, and Expressive Processing

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Fantasy  Mystery  Sci Fi / Humor
RPG evolution

- Abstract wargames to detailed simulations (maps, miniatures).
- With *D&D* miniatures move from groups to individuals.
- Maps move from large battlefields to constrained dungeons.
- Complex processes move from the forefront of each player’s mind to the Dungeon Master.
- Room to perform character and story.
Computer RPGs

- The role-playing game form has migrated to the computer, at least in some ways.
- Statistical combat and character development.
- Collaborative performance replaced by rich media.
- We know how to do that, right?
Playing KotOR

- On Dantooine, went south, met the Sandral family.
- Their son, Casus, missing — and they kidnapped Shen Matale in response.
- Their daughter, Rahasia, has fallen in love with Shen.
My daring rescue
KotOR Family Feud

- In my version, Shen and Rahasia moved to the Jedi enclave.
- Then I traveled north, to see rest of area.
- Went to visit Shen’s father, who seemed confused...
A strange conversation...
KotOR’s problems

- Later, I find the body of Casus Sandral, and return to his family, only to find their compound permanently closed.
- I visit planets in an unexpected order, and have strange conversations with Jolee Bindo.
- When I use my spatial freedom, the narrative structure’s inflexibility is often revealed.
- More broadly, the underlying system doesn’t produce the intended audience experience.
- Which brings us to a familiar question...
How to think about digital media’s “inside”?

- Is binary arithmetic central?
- Is uncompiled source code the key?
- In *Expressive Processing* I analyze “operational logics” — sometimes identified using source code, and sometimes higher-level descriptions.
- Operational logics are abstract processes, used by authors to communicate to audiences, that can be implemented many ways.
KotOR’s logics

- **KotOR** uses common operational logics (e.g., collision detection) to represent navigable space.
- **KotOR** uses widespread RPG logics for character and story: quest flags and dialogue trees.
- Logics are exposed in dialogue interface and quest journal, but not identical to them.
Quest flags

- Story broken into quests and sub-quests, flags at progress points.
- Quest state exposed to player in journal (or similar).
- Game scripts update flags and journal.

Journal editor for BioWare’s Aurora tools
Dialogue trees

- Hierarchically-nested PC and NPC options.
- Active section chosen by flags, may set flags.
- Important element of gameplay (quests, battles, rewards, allegiances, etc.).

Conversation editor
RPG story logics

- Quest flags (milestones) and dialogue trees (directed graphs).
- Easy to implement and cheap at runtime.
- Conceptually simple and accessible to non-programmer designers.
- Bug-prone when used ambitiously.
- Vast number of possible positions in simulated graphical world, small number in fictional world.

This is not the answer
Writers already know this

- To create vast literary possibilities, don’t hand-author each option and connection — use rules.
- Which is also understood in another tradition...

A Story As You Like It

100,000 Billion Poems
You are like my father in some ways

WHAT RESEMBLANCE DO YOU SEE

You are not very aggressive but I think you don’t want me to notice that

WHAT MAKES YOU THINK I AM NOT VERY AGGRESSIVE

You don’t argue with me

WHY DO YOU THINK I DON’T ARGUE WITH YOU

You are afraid of me

DOES IT PLEASE YOU TO BELIEVE I AM AFRAID OF YOU

— Eliza/Doctor, Joseph Weizenbaum, mid-1960s
The *Eliza* system

- **Audience input:** “You don’t argue with me.”
- **Substitutions:** “I don’t argue with you.”
- **Keyword:** “you”
- **Decomposition:** “* I * you”
- “Why do you think I don’t argue with you”
- **Operational logic:** conversation as transformation
- Initially quite successful — the “*Eliza effect*” — leading to various responses...
Weizenbaum’s response

It’s disturbingly powerful
Suchman’s response

Expectation is the power
Murray’s response

Perhaps the premier literary artist...
Should we build *Eliza*-style systems?
The *Eliza* breakdown

- In *play* the experience falls apart:
  
  You are going to repeat what I say in the form of a question
  
  WHAT MAKES YOU THINK I AM GOING TO REPEAT WHAT YOU SAY IN THE FORM OF A QUESTION

- The power of initial expectation is great, but *Eliza*-style illusions break down (in a manner that reflects the underlying system shape) unless interaction is severely restricted.

- Unfortunately, with *Eliza*, the underlying system that’s revealed is boring.
The alternative

- Rather than processes for tricking the audience, we can craft processes that express ideas in the work.
- Not a new idea: Dada, Oulipo, Burroughs, Cage, Mac Low, Cayley, et al.
- But rather than shape the work of the author and/or a performance, these shape the experience of the audience.
An alternative to faking it
Meehan’s *Tale-Spin*

- James Meehan’s *Tale-Spin*, the first major story generator (flexible model for fiction).
- Its processes express ideas, in particular...
- An attempt to harness “scruffy” AI/CogSci concepts for expression — specifically, for story:
  
  Tale-Spin includes a simulator of the real world: Turn it on and watch all the people. The purpose of the simulator is to model rational behavior; the people are supposed to act like real people. (Meehan, 1976)

- Processes express relationships with schools of thought and communities of practice.
**Tale-Spin’s simulation**

- Each story begins with a character with a problem (e.g., hunger, thirst).
- A problem might be solved with a simple act (if I’m hungry, and food’s here, ingest it).
- If that’s not possible, plan to change things (a delta-act) to make it so (get food here).
- Often, one delta-act spawns another (getting food here requires knowing where food is) using “planbox” alternatives.
- Logic: planbox-based character planning.
An example

- Tom Bear is hungry.
- Getting berries isn’t already a goal, so added.
- Needs to know where berries are, decides to ask Wilma Bird.
- Goes to Wilma, kind of thing *Mumble* reports:
  
  ... walked from his patch of ground across the meadow through the valley to a river bank.
“Tom asked Wilma whether Wilma would tell Tom where there were some berries if Tom gave Wilma a worm.”

“Wilma was inclined to lie to Tom.”
“Tom asked Wilma whether Wilma would tell Tom where there were some berries if Tom gave Wilma a worm.”

“Wilma was inclined to lie to Tom.”
The *Tale-Spin* effect

- If *Eliza* is boom/bust, *Tale-Spin* has no boom. And play will not reveal its complexity.
- In fact, the audience sees boring stories.
- The main lesson of *Tale-Spin*: if we are creating media (games, fictions) fascinating, successful, *hidden* processes accomplish little.
- This is why “mis-spun” stories are popular:
  
  Henry Ant was thirsty. He walked over to the river bank where his good friend Bill Bird was sitting. Henry slipped and fell in the river. Gravity drowned.
Logics are important for critics, too

- *Tale-Spin* reveals limits of simulation in easily-understood fashion (e.g., decision to lie).
- Interpretations of *Tale-Spin* have been led astray by failure to understand logics:
  - The program goes into a loop because it does not know enough about the world to give Joe Bear any better alternatives. The plot structure is too abstract to limit Joe Bear's actions to sequences that make sense.
  - Instead of trying to create a surrogate author, efforts in computer-generated literature should focus on the computer as a literary instrument: a machine for cybertext and ergodic literature.
But how can audiences understand systems?
Playing *SimCity*

The system gives feedback to experiments
Playing *SimCity*

Very clear feedback
Design of *SimCity*

- “As a player, a lot of what you’re trying to do is reverse engineer the simulation.... The more accurately you can model that simulation in your head, the better your strategies are going to be going forward. So what we’re trying to [do] as designers is build up these mental models in the player.” — Will Wright
- Quite different from *Eliza* effect, but something similar at the outset...
Design of *SimCity*

You’ve got this elaborate system with thousands of variables, and you can’t just dump it on the user or else they’re totally lost. So we usually try to think in terms of, what’s a simpler metaphor that somebody can approach this with? What’s the simplest mental model that you can walk up to one of these games [with] and start playing it, and at least understand the basics? Now it might be the wrong model, but it still has to bootstrap into your learning process. — Will Wright
The *SimCity* Effect

- Like *Eliza*, *SimCity* works on expectation, at first. But play causes them to diverge.

- *SimCity* is designed to transition players, via experimentation & feedback, from assumption to understanding of its procedural city.

- *SimCity* successfully exposes an interesting model to players and makes this the center of innovative gameplay — as does *The Sims*.

- We can expand the possible in digital media by expanding the set of playable models.
A proposed expansion
Prom Week

- How do we get the dynamic social space and legibility of *The Sims* to combine with the specific characters, histories, and language of role-playing games?
- *Prom Week* connects “social physics” and relationship puzzles with unfolding stories
Prom Week: Exposing social state

with Michael Mateas, Josh McCoy, Mike Treanor, Ben Samuel, Aaron Reed, et al
Debbie and Edward’s Angry Breakup
Why would Debbie want to break up with Edward?

- She has the character trait of *jealous*
- Her sense of romance is low with him
- He did something that could be cheating
- And possibly many more reasons...
The Social Facts Database
Initiator’s Volition via Influence

Rules

For:

Responder cheated on Initiator
Responder cheated on Initiator with a friend
Initiator is has low confidence

Against:

Initiator is a cheater
Initiator is not confident
Responder is aggressive
Initiator thinks Responder is really cool
Initiator’s Volition via Influence Rules

For:

Cheat(Responder) and Dating(Responder, Other) +20
Cheat(Responder) and Dating(Responder, Other) and Friend(Initiator, Other) +20
~Trait(Initiator, Confidence) +20

Against:

Status(Cheat, Initiator) -20
~Trait(Initiator, Confidence) -20
Trait(Responder, Aggressive) -10
Cool(Initiator, Responder) > 70 -15
Responder’s Reaction

For:

Responder is inarticulate

Initiator did something bad to responder in the past

Responder is a pacifist

Against:

Responder is domineering

Responder has strong romantic feelings for Initiator
Responder’s Reaction

For:
- Trait(Responder, inarticulate) +20
- Trait(Responder, Pacifist) +10
- SFDB(Negative, Initiator, Responder) +20

Against:
- Trait(Responder, Domineering) -10
- Romance(Responder, Initiator) > 60 -20
Choosing an Outcome

Accept:
Flavorless:

Reject:
Flavorless:
  romance/buddy down

Robert is a pacifist:

Karen has low confidence:
Making and playing *Prom Week* is teaching us another set of lessons
Expressive Processing

- Authors can express ideas through computational processes.
- Audiences can experience these ideas through play, opening new genres.
- Critics can examine the ideas processes express — and their connections to histories, economies, etc.

This is my hope for our field.
Thanks!
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