Lecture 3
CS148/248: Interactive Narrative

Process Intensity

- Process intensity - term coined by Chris Crawford
  - Refers to the “crunch per bit” ratio
    - How much processing does the computer do on the data?

- Instantial assets – data displayed by computer
  - Sound files
  - Bitmaps
  - Text
  - Animations
  - …

Instantial assets: a temptation

- When first learning to program, instantial assets provide immediate reward

- But, instantial assets
  - Don’t make use of the unique properties of computational media
  - Limit possibilities for interaction
  - Create an authorial bottleneck
  - Are computationally “opaque”
The conversation model of interaction

- Listen – what is the range of possible utterances (verbs) provided to the player?
- Think – how deeply does the system process the player’s utterance (understanding)?
- Speak – what is the range and complexity of the system’s responses to its understanding of the player’s utterance?
- Interaction is a combination of the depth of the listen/think/speak loop and the speed of the loop

Instantial assets limit interaction

- More degrees of interactive freedom require more complexity of response
  - As the interactor can say more, the program needs to be able to think and speak more
- Responses generated from instantial assets…
  - Limit response to combinations of assets
  - Require more assets as the range of response grows
  - Can be an authorial bottleneck
- Instantial design tends to limit interaction or collapse response

Computational opacity

- The meaning of instantial assets are opaque to code
  - Example: code that triggers video clips can’t reason about or manipulate the meaning of the clips
- This opacity limits the code’s ability to resequence these assets in meaningful and interesting ways
  - Assets must be designed for sequencibility or…
  - Assets must be “opened-up” to the code
But instancial assets aren’t “bad”

- Can tap into rich meaning systems
  - Complex connotations, emotional flavor…
- We don’t know how to procedurally generate rich instancial assets
  - This can quickly become an AI complete problem
  - Purely procedural work may be overly abstract
- Need to appropriately balance the use of instancial assets and procedurality
  - Develop strategies for manipulation of instancial assets

Which bits are crunched?

- Wardrip-Fruin distinguishes between process intensive display of static data vs. behavioral process intensity
- Contemporary games contain many more assets than games 20 years ago
- Much of the computational effort may be spent on displaying this data
- But does this count as an increase in process intensity?
  - And are possibilities for interaction being increased?
- Design challenge: harnessing increased process intensity to support meaningful interaction

Two analytic frameworks

  - Structural – what are the “pieces” of an interactive dramatic experience?
- Murray (1998): the pleasures of interactive story
  - Experiential – what does an interactive story feel like?
Laurel’s treatment of Aristotle

Dramatic properties
- Enactment
- Intensity
- Catharsis
- Closure

Structure
- Action (plot)
- Character
- Thought
- Language (Diction)
- Pattern
- Enactment (Spectacle)

Murray’s experiential categories
- Immersion
  - Engagement; acceptance of internal logic
- Transformation
  - Masquerade; variety; personal transformation
- Agency
  - Action with effects relating to player intention

Combine agency with Aristotelian categories
- Agency chosen as primary
  - Immersion - engagement and identification
  - Transformation - change in the protagonist
  - Agency – not implicit in Aristotelian categories

- How does the category of agency relate to the Aristotelian categories
Structural prerequisites for agency

Maximize agency when material and plot constraints are balanced

Classic adventure game

Modern storygame (RPG and openworld)
Example: Classic FPS

- Plot Constraints
- Action (plot)
- Player character
- Thought
- Language (Diction)
- Pattern
- Enactment (Spectacle)