

Perspectives on Design: Interactivity, Graphic Realism

Prof. Jim Whitehead
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Game Concept Document

- Basic idea: a pitch for your game
- Aiming for 5-7 pages
 - 7 pages is maximum – can be shorter if you're able to describe the game in less space
- Need to describe the game idea
- Characters in the game, with artwork (can be rough, sketch is fine)
- Levels, what the concept is for each level
- Basic notion of interactivity (what do you do in this game?)
 - How do you win the game?
- Due Friday.

Power-Ups to Project

- +5 for Games 4 Girls project
- -10 individual project
- +5 for no blowing things up
- +15 for *really* new genre
- +10 for *non-trivial* educational game

Interactivity

- What was the essential element of computer games that made them so compelling, and allowed the industry to grow so quickly?
 - Not video, audio, or text by itself, since these all predated video games by many years
- Interactivity!
 - Computing power makes this interactivity possible

Interactivity

“Just as the schwerpunkt of computers is processing, so too the schwerpunkt of all software is interactivity—and this goes double for games.”

“Graphics, animation, sound, and music are all necessary to gaming, and they’re all important, but they’re not the schwerpunkt. Interactivity (sometimes called “gameplay”) is the real schwerpunkt of games.”

Chris Crawford on Game Design, p. 74.

Interactivity (Definition)

- Crawford uses a conversational metaphor
- Interactivity is, “a cyclic process in which two active agents alternately (and metaphorically) listen, think, and speak.” (p. 76)
- In computer games, the computer takes the role of one agent, and hence interactivity for video games becomes:
 - “How can we program the computer to be an entertaining conversational (metaphorically speaking) partner?” (p. 77)
 - Computer must
 - Listen well
 - Give the player the opportunity to say anything relevant to the situation
 - Must think well
 - Must speak well

What is high interactivity?

- What is high and low interactivity in a game?
 - Is a fast-paced action game more interactive than a complex, slow-moving strategy game?
 - Not necessarily. If two people talk quickly, does that make their conversation more interactive?
- High interactivity comes when both sides are engaged in high-quality listening, high-quality thinking, high-quality speaking.

Interactivity questions

- Crawford states that you can estimate the interactivity level of any game by asking three questions:
 - How much of what the player might desire to say does the game permit the player to actually say?
 - How well does the game think about the player's inputs?
 - How well does the game express its reactions?

Applying the questions

- Fast-paced action game:
 - Game allows player to say a limited number of words (move up, down, left, right, fire, etc.)
 - Player can say these words quickly
 - Processing is simplistic: just move around on a map
 - Expressiveness is complete, within the very limited confines of the world.
 - Conclusion: small amount of interaction

Applying the questions

- Civilization
 - Pace is slower, but player has wide range of things they can express
 - Game executes complex set of algorithms.
 - Listening and thinking are much deeper in this game
 - Expressiveness is also quite high – many possible pieces to move, possible interactions among pieces
 - Conclusion: Civilization is clearly a very interactive game
- OK, so are real time strategy games like Age of Empires or Empire Earth more interactive than Civilization?

Process Intensity vs. Data Intensity

- Process intensity is the degree to which a program emphasizes processes instead of data.
 - Process is algorithms, equations, branches
 - Data is reflected in data tables, images, sounds, text
- Analogies
 - Language: nouns vs verbs
 - Economics: goods vs services
 - Physics: particles and waves
 - Computers: bits and cycles

Crunch per bit ratio

“Because process intensity is so close to the essence of “computeriness,” it provides us with a useful criterion for evaluating the value of any piece of software. That criterion is a vague quantification of the desirability of process intensity. It uses the ratio of operations per datum, which I call the *crunch per bit ratio*.” (p. 89)

Graphic Realism

- Crawford lists as a common mistake, “obsession with cosmetics” (p. 107)
- Five common motivations for putting good graphics and sound in a game:
 - To further the gameplay
 - To permit the player to show off the superior cosmetic capabilities of his new computer
 - To show off the superior technical prowess of the programmer
 - To keep up with the competition
 - To provide the player with images and sounds that are intrinsically pleasing
- Crawford: The first reason is the only good reason for pursuing cosmetics.

