Why Study Older Games?

- Greater consensus on which games were truly great, and hence worth studying.
- Games were typically more simple, and hence design choices are more evident.
  - It is easier to understand the complete range of design tradeoffs in older games.
- Lessons learned from analysis of older games are still applicable to new game design.
  - While graphics have changed substantially, the design choices involved in creating excellent gameplay have not changed as much.
- Portable games still have many of the same hardware limitations as older games.
- The kinds of games that one can design with Game Maker are most similar to older games, rather than newer console games.
- Big difference: older games do not provide as much insight into the design of the fictional elements of games.
Centipede

• Traits of classic arcade games:
  – Single screen play
  – Infinite play
  – Multiple lives
  – Scoring/high scores list
  – Easy-to-learn, simple gameplay
  – No story

• Many elements borrowed from pinball
  – Infinite play, multiple balls, scoring/high scores
Centipede: Input

• Ability to use a trackball and dedicated fire button greatly enhanced gameplay
• Can see this in Guitar Hero, and Dance, Dance Revolution
  – Novel controllers can provide enhanced gameplay
  – Controllers have to be well-tuned to the gameplay
Centipede: Interconnectedness

• Different elements of the gameplay combine together very well

• Combination of:
  – Centipede crawling towards the bottom of screen (and variations on this)
  – Spider
  – Flea
  – Scorpion
  – Mushrooms

• Movement of centipede and flea are predictable, but spider is less predictable

• Spider can eat mushrooms: kill or let live?

• Definitely emergent gameplay
Centipede: Escalating Tension

• Elements of the gameplay combine to create increasing levels of tension in the player.
  – Increasing numbers of mushrooms over time
  – Centipede released in multiple segments as game gets harder
  – More poison mushrooms, hence the centipede dives more often
  – Action at the bottom of the screen once the centipede reaches there

• These all combine to create increased difficulty for the player, and hence increased tension.
Centipede: Tension

• One of the key aspects of Centipede’s design is that there are interludes in the tension.
• It’s not always a steady ramp-up.
• For example, there is a brief period after a centipede is eliminated before the next one appears.
• If you die, the game gets a little bit easier for awhile, then starts escalating again.
• Enhances the tension effect by ramping up, then releasing, then ramping again. The delta between states is more noticeable.
Adventure on 2600

• Four key ideas here
  – Translation of text language (verb-noun) into graphical language (move, pickup, drop)
  – Use of multiple screens to create a larger game world
  – Use of non-regular topologies to increase difficulty of navigating through the game world
  – Use of two-step process for dragon eating cursor
Non-Regular Topologies

• Show diagrams from pages 705-712 on the document camera
• Note the various forms of non-regular topology
• Also note how the maze is spread across multiple screens, to increase difficulty.
Dragon Eating Cursor

• This is a two-step process
  – Initial collision
  – Delay
  – Dragon eats cursor
• Allows the player to potentially escape, if they are fast enough
• Adds interest and skill into this collision
  – Would be easy to implement this using Game Maker
Eastern Front (1941)

• Key ideas
  – Design process
  – Combat system
  – AI
  – Tuning
Design Process

• Crawford did significant initial design work in his head, and on paper.

• Once you have a firm grasp on the design issues, it’s much more flexible to resolve design issues mentally, and on paper, before doing expensive implementation.
  – Once you have implemented, you have an investment of time in the implementation, and you’re less likely to make radical changes since you don’t want to throw work away.
Design Process

• Crawford also advocates writing mini design essays
  – Have a difficult element of your design? Write your thoughts down on paper.
  – Serves to make your ideas more concrete, and exposes weaknesses in your thinking.
  – Collection of essays combines to record your ideas on the game
    • Can also be useful for communicating ideas to other team members
Design Process

• A key focus was on the player’s experience in playing the game
• What would the player do? What were their key actions?
• Ties back to the notion of interaction being a conversation – what expressive power do you want to give the player?
• A powerful way of starting to ask design questions.
Tuning

- Crawford and Robinett both stress the importance of tuning a game
- Very difficult to get a game right initially
- Need to have people play your game, see how it goes, then adjust the game to improve the gameplay
- Many aspects of gameplay are impossible to get exactly right without having many people play your game.
- In your projects, you should set aside time to have others play your game, and do fine tuning.