

Maryann Westfall  
LCC 6215 Game Design as a Cultural Practice  
**Arcade Games: Mastery and Addiction**  
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During the 1960s, video arcade games became the new form of entertainment. For adults and children, male and female, obsessive-compulsive behaviors were both created and satisfied by these games. What were some of the factors that led to the technological and psychological embracement of this genre of game play, and ingrained it in our culture?

#### TECHNOLOGY IN THE '60S

It was in the early 1960s that major paradigm shifts occurred with regard to computers and their usefulness to our society. Ben Schneiderman introduced direct manipulation as a type of interface that allowed users to interact with a persistent and consistent object. Sutherland's Sketchpad was an embodiment of this ideal. Metaphors were being used on the screen, and allowed novices to use computers. They helped support interaction within domains with which the user was familiar. Kay developed SmallTalk, an example of personal computing that shifted access from the privileged few to the average many.

In addition to these computational milestones, new hardware technologies made it more effective to implement these new ideas. Transistors and time-sharing increased computational speed and capacity. Programming toolkits enabled booting and black-boxing previously-cryptic actions. The multi-modality of the computer arena was enhanced with visual, haptic and auditory inputs and feedback. Hence, computers evolved from inanimate, sterile boxes to entertaining devices not unlike television.

The stage was set for a new genre of entertainment. But who would play, and why?

#### THE AGE OF THE VIDEO ARCADE

Those who first embraced this new entertainment form were young adults, typically college students who had access to the development of the games. These students of computer science, whether formally enrolled students or garage hackers, understood the power of these newly accessible affordances. Pong<sup>®</sup> was one of the first and most basic of games, testing the power of direct manipulation as a superior method of interaction for the average person.

Centipede<sup>®</sup>, Tetris<sup>®</sup>, SpaceWar!<sup>®</sup> and many others soon followed, prescribed by a set of accepted design rules such as rules of engagement, rewards, and single-screen play. Their simplified metaphors, while meant to be representational, bordered on the abstract, allowing understandability to people of different subcultures: everyone could understand the concept of chasing something or being chased.

Based on reward and reinforcement schedules studied in behavior modification, these games were easily addictive. The ease of beginner levels allowed new users time to learn the rules and types of interaction. Strategically balanced with the right amount of reward, new players could quickly find themselves repeatedly trying to attain a goal that was just out of reach. Additional levels of difficulty served as both a reward (for solving the easier levels) and an enticement (challenging the player to go further than they had already gone). The simple paths and interaction allowed for mastering of hand-eye coordination from even the most dexterity-challenged players. User-selectable difficulty ratings allowed games to be customized for the skill level of the user, thereby opening up the genre for most anybody to play.

Audio feed back was often quite illustrative and reinforced the reward schedule, as well as endearing the player to the characters in these games. The simple sounds of PacMan® seem to be intrinsic to the characters, and the musical variations clearly help the player distinguish between “good” and “evil” characters.

Scorekeeping was a type of feedback designed to encourage continuous play. Without this feature, players might lose interest, or have insufficient vocabulary to discuss and compare their feats of endurance with fellow players.