

# Video Games

Name Song Tianyu number 13211135  
Zhejiang Normal University  
video Games

## 1 Introduction

The term "video game" has evolved over the decades from a purely technical definition to a general concept defining a new class of interactive entertainment. Technically, for a product to be a video game, there must be a video signal transmitted to a cathode ray tube (CRT) that creates a rasterized image on a screen. This definition would preclude early computer games that outputted results to a printer or teletype rather than a display, any game rendered on a vector-scan monitor, any game played on a modern high definition display, and most handheld game systems. From a technical standpoint, these would more properly be called "electronic games" or "computer games." Today, however, the term "video game" has completely shed its purely technical definition and encompasses a wider range of technology. While still rather ill-defined, the term "video game" now generally encompasses any game played on hardware built with electronic logic circuits that incorporates an element of interactivity and outputs the results of the player's actions to a display. Going by this broader definition, the first video games appeared in the early 1950s and were tied largely to research projects at universities and large corporations.

## 2 History of Video games

The history of video games goes as far back as the early 1950s, when academics began designing simple games and simulations as part of their computer science research. Video gaming would not reach mainstream popularity until the 1970s and 1980s, when arcade video games, gaming consoles and home computer games were introduced to the general public. Since then, video gaming has become a popular form of entertainment and a part of modern culture in most parts of the world. As of 2016, there are eight generations of video game consoles, with the latest generation including Nintendo's Wii U and Nintendo 3DS, Microsoft's Xbox One and Sony's PlayStation 4 and PlayStation Vita. PC gaming has been holding a large market share in Asia and Europe for decades and continues to grow due to digital distribution. Since the release of smartphones, mobile gaming has been a driving factor for games to reach out to people not previously interested in gaming, as well as people unable to afford or support dedicated hardware.

### 3 Overview

A video game, like most other forms of media, may be categorized into genres. Video game genres are used to categorize video games based on their gameplay interaction rather than visual or narrative differences. A video game genre is defined by a set of gameplay challenges and are classified independent of their setting or game-world content, unlike other works of fiction such as films or books. For example, a shooter game is still a shooter game, regardless of whether it takes place in a fantasy world or in outer space. Because genres are dependent on content for definition, genres have changed and evolved as newer styles of video games have come into existence. Ever advancing technology and production values related to video game development have fostered more lifelike and complex games which have in turn introduced or enhanced genre possibilities (e.g., virtual pets), pushed the boundaries of existing video gaming or in some cases add new possibilities in play (such as that seen with titles specifically designed for devices like Sony's EyeToy). Some genres represent combinations of others, such as massively multiplayer online role-playing games, or, more commonly, MMORPGs. It is also common to see higher level genre terms that are collective in nature across all other genres such as with action, music/rhythm or horror-themed video games.

### 4 Methods/Techniques

Although departments of computer science have been studying the techni-

cal aspects of video games for years, theories that examine games as an artistic medium are a relatively recent development in the humanities. The two most visible schools in this emerging field are ludology and narratology. Narrativists approach video games in the context of what Janet Murray calls "Cyberdrama". That is to say, their major concern is with video games as a storytelling medium, one that arises out of interactive fiction. Murray puts video games in the context of the Holodeck, a fictional piece of technology from Star Trek, arguing for the video game as a medium in which we get to become another person, and to act out in another world.[49] This image of video games received early widespread popular support, and forms the basis of films such as *Tron*, *eXistenZ* and *The Last Starfighter*. Ludologists break sharply and radically from this idea. They argue that a video game is first and foremost a game, which must be understood in terms of its rules, interface, and the concept of play that it deploys. Espen J. Aarseth argues that, although games certainly have plots, characters, and aspects of traditional narratives, these aspects are incidental to gameplay. For example, Aarseth is critical of the widespread attention that narrativists have given to the heroine of the game *Tomb Raider*, saying that "the dimensions of Lara Croft's body, already analyzed to death by film theorists, are irrelevant to me as a player, because a different-looking body would not make me play differently... When I play, I don't even see her body, but see through it and past it." [50] Simply put, I

udologists reject traditional theories of art because they claim that the artistic and socially relevant qualities of a video game are primarily determined by the underlying set of rules, demands, and expectations imposed on the player. While many games rely on emergent principles, video games commonly present simulated story worlds where emergent behavior occurs within the context of the game.

The term "emergent narrative" has been used to describe how, in a simulated environment, storyline can be created simply by "what happens to the player." [51] However, emergent behavior is not limited to sophisticated games. In general, any place where event-driven instructions occur for AI in a game, emergent behavior will exist. For instance, take a racing game in which cars are programmed to avoid crashing, and they encounter an obstacle in the track: the cars might then maneuver to avoid the obstacle causing the cars behind them to slow and/or maneuver to accommodate the cars in front of them and the obstacle. The programmer never wrote code to specifically create a traffic jam, yet one now exists in the game.

## 5 Conclusion

We have seen how we can connect existing academic works with one short and simple definition of a videogame. We have also seen that this definition could easily be completed,

for example with what the video game heritage teaches us. To conclude, we can add that knowing what a videogame is, is obviously very useful to know what a good videogame is. This could be the next step and it could be verified thanks to the videogame heritage. Then, it could give us criteria to analyse videogames and ideas to improve videogames. Finally, we could build a new design method that would be based on this work.

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