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Defining Challenge

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My wife has recently been teaching me to play shogi, a Japanese board game that is very similar to chess. Like chess, shogi is played on a grid with pieces representing units on a battlefield, and each class of unit has different movement characteristics. Though the basic goal is to lock the king into a vulnerable position, shogi strategy quickly diverges from chess because it allows pieces to be replaced on the board after being captured, as well as providing rules that allow pieces to transform into more powerful units. Furthermore, there are illegal moves in shogi that will cause the player to lose immediately if performed. Consequently, players must not only consider possible moves by their opponent, they must also be careful to adhere to the rules of the game. Though shogi shares a common ancestry with chess [1], the type of challenge it presents to the player can be very different.

Like traditional games, video games are designed to entertain players by providing some sort of challenge. Traditional games often pit players against each other, and the game itself acts only as a context by which players can challenge each other. Many sports also add a mechanical aspect to the challenge; in basketball for example, the player must not only combat members of the opposing team, he also faces the physical obstacle of accurately making a basket.

However, unlike many traditional games, video games are often single player experiences; instead of confronting a specific opponent, players are often asked to perform a difficult action within a given set of rules, or to decipher the rules of the game through experimentation.

Consider a classic like Super Mario Bros. In this game, the player must deftly manipulate the controller in order to move his game avatar (Mario) through each level without error. Throughout the game the player will encounter various enemies and traps that must be successfully avoided in order progress to the finish, but each of these obstacles follows a familiar pattern. A similar strategy can be used for defeating almost all of the game’s enemies, and though actually finishing the game may be a difficult task, the path to the finish line is clear from the very beginning. The designers of Super Mario Bros. intend their game to be challenging mechanically (the player must have the coordination required to move Mario with the controller) but do not
wish to challenge the player by obfuscating the rules of the game.

Video games are a flexible medium, and many titles are built around the idea that deciphering the rules of the game is a challenge in and of itself. Consider the popular adventure game Myst. Unlike Super Mario Bros., Myst has no mechanical challenges: it does not require deft manipulation of a controller (or, in this case, a mouse), nor does it make the long-term goal of the game clear. While Mario presents straightforward challenges that require raw dexterity, players in Myst are encouraged to explore and experiment within the game world until they find a way to progress. In fact, controlling the character in Myst is exceedingly simple: the player simply needs to click on items on the screen in order to manipulate them. The challenge that Myst delivers is similar to a riddle: though manipulating objects in the game is simple, figuring out which items can be used in conjunction with specific locations represents a significant challenge. The format of each puzzle is different, and so instead of repeating a similar pattern until it is mastered, the player is constantly asked to learn a new set of rules and apply them to a new puzzle.

Myst and Super Mario Bros. are both very challenging games, and they are both a lot of fun. Using these two titles as extreme examples, I think it is safe to declare that all video games can be generally defined in terms of two types of challenges:

- Puzzler: challenging the player to figure out what to do in order to progress, or
- Mechanical: challenging the player to actually perform the actions required to progress.

Actually, most modern games feature both types of challenges, but usually one form takes a leading role over the other. Some game genres are almost entirely defined by one type of challenge; the rhythm genre, for example, requires the player to hit predictable buttons in time with music in order to achieve score. For rhythm games, there is never any question as to how the game is played, and skill is a matter of dexterity. The challenge is entirely mechanical. In chess, the challenge is completely puzzle-oriented because the actual movement of the game pieces on the board is a trivial task, while deciding which pieces to move requires careful strategy.

Dividing games into groups based on the primary form of challenge is a convenient way to learn about what sorts of games appeal to different types of people. For example, games designed for personal computers have traditionally featured puzzler challenges over mechanical challenges: Myst and most other Adventure games were created with PC users in mind, as were other puzzle-centric genres like Real Time Strategy games (Age of Empires, Warcraft, etc). These games often appeal to players who do not wish to participate in mechanical challenges and are looking for titles that can be played at a slower pace. Traditionally, PC users have tended to be adults, and usually their computers were not purchased for the express purpose of playing games. Video game consoles, on the other hand, have traditionally targeted children and young adults with fast-paced action-oriented games that require mastery of special game controller.

Many video games that have attempt to meld mechanical and puzzler challenges have failed.
This may be because players familiar with one type of challenge are likely to be quickly frustrated when they encounter the other type. Shogi would probably not garner much popularity if the rules required each move to be followed by the successful entry a Simon button sequence. The developer who attempts to mesh these two styles of challenge must design his game such that both types of players are comfortable with the format of the challenges that are presented.

There are, of course, some successful games that feature a significant amount of both mechanical and puzzler challenges. *Half-Life 2*, for example, features a complex and highly mutable game environment that effectively combines both challenge formats. Players are encouraged not only to master the complex actions their avatar can perform, but also to consider their environment when trying to solve problems. Often a solution that requires more critical thinking than dexterity is available. *Half-Life 2* succeeds in this area because it allows players to choose to solve problems however they like, and does not usually lock them into one challenge format.

![armchamps2](image)

There are also a small minority of games that present an entirely different sort of challenge: endurance. These titles do not require exploration or problem-solving typical of puzzler challenges, nor do they feature complex mechanical challenges. Instead, this set of games
rewards players for doing something simple for a length time. A quintessential example of this sort of game is *Arm Champs II* [2], an arm wrestling game. In this game the player must “arm wrestle” with a computer opponent by pressing a mechanical hand down. As the difficulty increases, the strength of the mechanical hand also increases. There is no trick to learn here or special method by which players can get better; the game simply rewards those who can depress the hand longer.

Another, less obvious example of an endurance-oriented challenge is the online hit *World of Warcraft*. *World of Warcraft* (or *WoW*) is an online role playing game that allows players from around the globe to play simultaneously within the same game world. There are all kinds of mechanical and puzzler challenges going on in *WoW*, but the primary problem for *WoW* players is time. *World of Warcraft* heavily rewards players who spend more time playing, and the strength of a player’s in-game avatar is largely a function of how many hours he has put into the game. Of course, this sort of design has a purpose: *WoW* players pay a monthly subscription fee, so it is in the developer’s best interests to keep players playing for as long as possible [3].

Unlike many traditional board games, video games can provide a wide spectrum of challenges. Video games can capture the planning and strategy required for a killer shogi move as well as the timing and targeting required to throw a ball through a hoop. However, the tastes of gamers splits evenly along this division, and designing games that successfully incorporate both mechanical and puzzler challenges is difficult. However, broadening the types of challenge offered to the player will also broaden the audience for video games; if traditional games like chess, shogi, baseball, and basketball are any indication, both forms of challenge have plenty of fans.


[3] In a rather controversial article, David Sirlin argues that this aspect of World of Warcraft is damaging to the player. http://www.gamasutra.com/features/20060222/sirlin_01.shtml

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