

Introduction

Undoing is a constant objective of gaming. To configure and reconfigure, put the Rubik's cube back together, rescue the princess from her captor, return to the door before the timer-switch that opens it runs out, rebuild the stars your father felled while drunk, and fight the boss again after dying last time.

In the process of undoing something, **we do things**. To put a plate away after using it, I wash it. Using water and soap, whereas I made it dirty by using it to eat. Finally, it's back where it started, just like I found it.

Computers configure users. The user occupies the grammatical position of the second person. As Microsoft used to ask "Where do **you** want to go today?" Software includes an opening which will be the agency of a user. Agency is a locus of attention, a zone with expectations, and a body entitled to do things.

To retract actions and restore a previous state in a very direct way, this is the logic of undo. There are other ways to correct, fix, and change. But the function of undo is to entirely negate a user action in

order to restore an earlier state. A tiny temporal manipulation, a hop back in time to the moment before things went wrong. Undo functions make present the past by recording what has taken place.

As a software feature, undo can be designed in different ways. It supplements saved versions of a document to allow flexibility in the editing process. It permits us to recognize and correct what we understand to be our failures. For more PC applications than you might think, the shortcut key is control z.

Now I'd like to discuss a few moments of doing to better understand undoing in games.

Dragon's Lair, 1983

Decide immediately. You have only 5 options, less than 3 seconds, and one chance. Choose wrong, you die. Try again. It's stressful. You will probably choose wrong a lot. There's usually no way to know in advance which choice will be right. Retreat and you may die, but you won't always win if you stay to fight. When the player is dropping in coins for new lives, this arcade game is money.

Moments of play demand instant player input. Once you've memorized the moments, and their sequences, you might begin to make some progress.

Half-Life, PC, 1998

You are a physicist fighting aliens and soldiers in dangerous places. It is very easy for you to die. Save often.

Play is intuitive, a first person shooter with a physics that is predictable and clear.

The game automatically saves for you at certain points, and you can do a quick-save at any moment by hitting F6, or you can press escape, go to the main menu and create a save game.

Quick saves help, but sometimes the saved state is already pretty bad. Better try an earlier state, from the auto-save or even earlier.

The player is not embedded in the game's world time, but can always occupy the opening of the avatar, plug in, and get to gaming.

Prince of Persia: Sands of Time, PlayStation2, 2003

You are very agile, very tough, and spend little time in combat. Most situations are puzzles with specific motions possible. You can jump to

this ledge, you cannot grab onto this one. When you make a mistake, you're probably falling to your death. But you can rewind the action and prevent the jump that sent you off the side of the castle. Your life is not fragile. You need not memorize. Saving is **not** for **survival**, but to let you stop playing and come back another day.

Rewind unifies many of the temporal functions at play in the game. In contrast, reversed time in film has been used to expose the cinematic apparatus, the arbitrariness of the camera and of editing in the production of moving images. Here, the reversed video represents the complex and multiple temporalities and doings of gameplay with a single, unifying world time.

The speed of falling, the immobile walls, the power to slow down play or freeze enemies, the timer switches, the gently swinging ropes, the lumbering monsters, and the quick blows of the sword become one continuous time in reversal. But some things are not included in this apparently symmetrical form of time's passing. We do not hear sound effects or music, there is no extra-diegetic action, and in-game dialogue cuts off.

TiVo, ca. 1999

The box records live TV shows and lets you choose from all recorded shows, pause playback, and advance or rewind at three speeds. Shows are stored as digital video files, and can, to some extent, be transferred between devices. It is a system for the capture, conversion, and management of TV as content for a watcher who controls. Once trained in the use of your freedom, you never have to miss a thing.

Click, DVD, 2006

Adam Sandler is a neurotic workaholic architect trying desperately for a promotion to partner. When he gets a universal remote control that controls his universe, he makes some bad choices and ends up fast forwarding through most of his life. Dog walks, showers, sickness, meetings, conversations with his wife. Only reawakening for his promotion. This is not a time travel movie, there is no paradox of which version of himself made the choices. Skipping so much of life was just stupid.

Braid Xbox Live, Arcade, 2008

You are like Mario, but in a business suit with his hair dyed orange. It's a regular platformer. You can rewind time in the whole game, but with various twists. Rewind in world two, and the character does not release objects at the moment they were acquired in forward time. Rewind in world four, and when you stop, a shadow of you begins to do all the actions you just undid. Undoing is always some kind of doing, and hurtling up and down a ravine is part of the silly fun of Braid.

A challenging game, but relaxing to play. No timer. No terminal death. Play at your leisure.

Magic: The Gathering, Card Game, 1993 to present

You draw and play cards from your deck, trying to reduce the life of your opponent to zero before he does it to you. I say he, because the game is an overwhelmingly male activity. Most cards modify the rules of the game in peculiar ways, some have names that suggest they modify time or undo actions. Of these, the majority give extra turns, return played cards to the deck or hand, or allow you to search your deck for the card you need.

There is no outside to this game whose manipulation of rules constitutes the material of its fictional world. A time twister is a spell you cast to change what spells you have available to cast.

There is no single world-time. Phases of each player's turn, the duration of turns, and the play of cards are all manners in which temporality functions in the game. Mana is accumulated, tokens spent, damage dealt, sorcery cancelled, control shifted, actions denied, and patience sometimes rewarded in its long battle against luck.

Facebook, Website, 2003

You're a regular person with friends, interests, photos, videos, and comments, reflecting (and in part embodying) your social life. Everything you do happens now, and many actions are labeled with the local date and time. You can erase your status updates, delete posts on your profile written by others, and disassociate your name from photos where you've been tagged. Most things you can undo. The persistent world has no formal time limits and no save games, only regular data backups.

Conclusions:

Jesper Juul's book Half-Real lays out a number of diagrams relating "play time" to "fictional time".

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On the one hand, play time is neither as singular or linear as these diagrams suggest. We get up and come back, we replay and reboot after crashes. On the other, play time is entirely different from the experience of playing, where anticipation, the grind, exploration, confusion, and intensity take turns occupying our not entirely playful awareness.

There is a split between fiction and play, but there are also splits within each.

Bernardo Rondeau writes of the video game as an engine of control.

The gamer,

may use his hands seemingly under the guidance of his eyes and ear – routing commands to expedite engagement with the monitor's data – in forging ahead, controlling, his fate in the computerized environment of his choosing. He is ascending levels, finding clues, hoarding points, prolonging "life." Digitally, he is eternal, free. But in fact, he is following orders. Instructed by a manual or onscreen directions, he is using the Video Game as it is has been designed.

Sounds like Prince of Persia, where puzzles with one solution have already been solved by the Prince who starts the game recounting these deeds he's already done. What, then, are sandbox games?

Control in Rondeau's argument is authoritative discipline. Two principle techniques, the carrot and the stick, of this disciplinary power are inducement and death. Undo's provide some numbness to inducement, a facility for resisting temptation. But it's death that undo rearticulates most dramatically.

Auto, quick saves, and rewind plot a trajectory in the practice of time in video games. Where players could modify their course through world-time only with new lives or saved games, correctional time becomes scalably modular (a few seconds or a few minutes of undoing, whenever you need them) and diegetically explicable. Control shifts from a clear and internalized rule to, what Deleuze calls, "a self-deforming cast that will continuously change from one moment to the other, [...] a sieve whose mesh will transmute from point to point."

From the perspective of game design, this scalability allows high precision challenges, which require extremely good luck. Of course, a strong undo function lends itself much better to games people own than games they put in money to play.

Insofar as control and game design configure a user, undoing increases the range of what a player is able to configure. Death of the avatar is not a limit to the player. Memorization is outmoded by instant correction. Those moments of intensity which require immediate action come upon us viciously in a game without saves.

With saving, immediacy can be scheduled, but with undo it can be continuously shifted.

Undo is a user affordance, a function of temporality, and another instance of doing. But it is also becoming a part of cultural commonsense, the living machinery of ideology, where undoing will continue to take on meaning by means of what it does.