



>> dan boutros

# DIFFICULTY IS

## Designing For Hard Modes In Games

### DAN BOUTROS

is a consultant and freelance game designer, currently directing an unannounced DS puzzle game. Email him at [dboutros@gdmag.com](mailto:dboutros@gdmag.com).

**DIFFICULT MODES IN GAMES ARE RARELY DISCUSSED AS AN** important factor in our business. In some games, they are well-thought out additions, built for the hardcore players. In other games, these modes are an afterthought, provided to appease a publisher, or as an attempt to provide direction to multiple audiences attracted by the same product. For almost all developers though, difficulty modes are tackled at the end of the project when the game is being tuned, and they are tough to implement well without significant time and thought.

For this piece, I'll aim to explore some methods and philosophies behind how difficult play has been successfully implemented in games overall, either in terms of general difficulty, or within an optional objective that recontextualises play (such as Rare's super-tough multiplayer bonus unlockable objective in *GOLDENEYE* for the Nintendo 64).

We'll explore where certain methods have worked, failed, and where they are simply not relevant anymore. Since difficulty is so subjective, I'll focus arguments around the following ideas:

"A player must always feel like the failure of a challenge is entirely his own responsibility, and not a fault of a poorly designed product."

"The player must understand how and why he failed, so that he can learn from his mistake and increase the feeling of failure being his responsibility."

Choosing a high difficulty is the act of wanting to be tested on the part of the player. The reward of passing a test is a feeling of worth and accomplishment—and to make a test enjoyable is to make it challenging, while also achievable. Tuning difficulty

in a quick and dirty way can also change the game's play fundamentally—this is something many developers don't factor into their decisions enough.

### TUNING FOR TOUGH

Many games have sought to copy Rare's N64 *GOLDENEYE* model for greater difficulty—double damage from enemies = harder game—but within the context of other factors, doing this can actually change the consistent play type of the game, and thus change the experience in a fundamental and arguably unsatisfying way.

Let's say there's a fictitious FPS called *NaziShoot 2000*. In this game's normal difficulty mode, the player can usually get shot, have a second to think, recover, then react. In tough mode, players cannot risk being shot as the increased damage and AI kills them almost instantly. This forces players to move and act more conservatively. In an ideal-world's well-designed tough game, it would be possible to play through and not die, if the player used the utmost care and thoughtfulness. However, this game had to hit a deadline so the tough mode had to be evolved from the normal mode, and tuned to a formula. In this memorizing bottleneck scenario, surprise snipes to the head, and learning from trial and error become the dominant way to play.

And there is the difference: whereas one mode is a reactionary and lightly memory-reliant experience, in the tough mode, the game becomes very classically rooted in trial and error, using memory play as the core consistent play type. The only way a player can survive with meager resources and a damage disadvantage is by trying, dying, remembering, and restarting.

This is a classic tenet of the old school 2D arcade shooters. In a 3D game where an additional axis dramatically adds to your

# DIFFICULTY IS

things-to-worry-about radar, control complexity is usually increased, and gameplay acts—core gameplay sequences such as a shooting something and then grabbing a power-up—are spread across a longer timeline because of the physical world's scale increase. If the player can be killed in one hit, or by other fatal game features, this can often result in an intense feeling of frustration, and quite possibly lead to dissatisfaction with the game overall.

## DIFFICULTY TUNING ROUNDUP

There are many elements of gameplay that are worth tweaking for harder difficulty modes, provided there is time to test each of these thoroughly against the other modes, and with players of varying skills. I'll investigate a few here.

**Time limit.** This is a classic difficulty tuner for racing games, and a few platform games—essentially inspiring the player to get to the end of a level or challenge by X time. This usually forces the player into optimal route-finding play and looking at their navigational tools differently. Had *PRINCE OF PERSIA: SANDS OF TIME* embraced non-linearity, we may have had a time limit goal challenge to recontextualize the levels in some very interesting ways. Generally, most racers have a medal-based reward structure where the gold medal will be a very tight time to achieve. Games that have other play types involved in the racing—*F-ZERO* has combat for example—end up forcing the player to also optimize those play types, alongside finding the ideal path.

**Damage Dynamics.** This is the easiest thing to tweak when making a game harder—just make everything hurt more. The problem is that without careful tuning of other factors, such as enemy placement and resources, this can bring about one-hit kill syndrome, which in a 5–10 minute stretch of play can come across lazy and unfair. It's also the easiest way to change the feel of the game from an evaluate/solve game to a predominantly memory-play based affair.

The enemy AI in *HALO* shows increased aggression at higher difficulty settings.



The best difficult modes in games tend to share the same formula for upping the difficulty, which is contextual to the level portion. Sometimes this involves more enemy spawns, and most of the time there's additional damage—and in some places, less ammo.

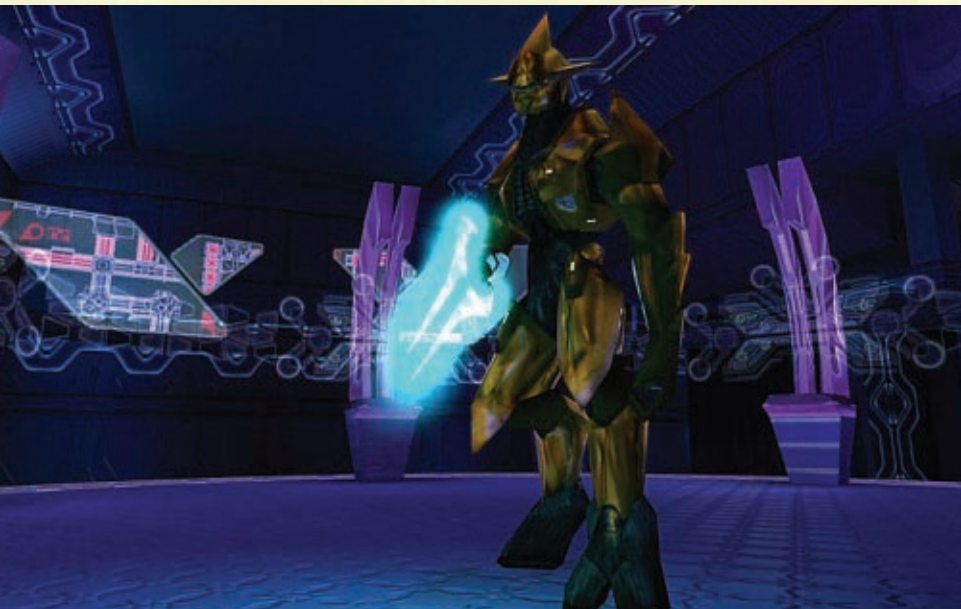
**Siman says.** If the game is dependent on button presses, like *DDR*, *BEATMANIA*, or *GUITAR HERO*, then demanding more presses per time unit makes sense as a difficulty increase. Pressure is increased through the players having to parse what they see, and combine that with what their currently engaged feet, fingers, or other digits are already doing.

**Increased AI aggression.** *HALO 1* and *3* are perfect examples of how to pull this off, as are the Infinity Ward installments of the *CALL OF DUTY* series. Sometimes, the enemy just behaves more aggressively, forcing the player to act more quickly and confidently, rather than wait around trying to aim a perfect head shot. In *HALO*, the grunts will do suicide kills in the harder difficulties.

Make your enemy AI take more risks, but on the flipside don't make the enemy AI be able to see the player from a million miles away with the aim of a laser-eye-surgeried hawk, or you'll get a *MEGA MAN*-style scenario in which players feel cheated through an unknown and unseen kill, such as from an off-screen bullet. In some contexts it's realistic, but in most games of this sort that I've played, it's rarely fun. It could just be me, but it made me stop playing *MEDAL OF HONOR: AIRBORNE*.

**Reduced neutral zones.** This is when safe areas and unused areas are removed or replaced with hazards, such as spikes you can't stand on or instant-kill zones. The Challenge levels in Valve's *PORTAL* are a great example. This has the added side-affect of pin-holing the player's focus on very few options, and with good level design can create a high-pressure puzzling environment.

**HUD restrictions.** In some games, challenge can be tuned by altering the interface. Games with multiple feedback systems work best, as numbing or reducing just one of your in-game senses can cause player decision-making to be more tense. The *METAL GEAR SOLID* series has done this since the beginning, where harder difficulties would remove the in-game radar, meaning the player had to rely not only on their memory of the



# DIFFICULTY IS

game's layout but also their reflexes and knowledge of the AI behaviors to survive.

*Resource stinginess.* The RESIDENT EVIL series chose to limit ammo as difficulty levels ramped up. This results in extreme tension, helping to add to the horror, but also greater pressure on the player to be resourceful. Many skillful Professional Mode RESIDENT EVIL 4 players rely on sharp-shooting kneecaps to bring the enemy to its knees, then finish it off with the knife to get through the game on a minimal bullet-budget.

## THE ILLUSION OF FAIRNESS

It's a common perception that the key to keeping a challenge fun for many is to make it feel fair to the player. Of course, classic video game scenarios—such as one man against an army of aliens, or a flying saucer against numerous battalions of space ships—is completely unfair.

Few games, if any, are “fair.” The illusion of fairness to the player is what's important, and this comes in the form of convenience mechanics. This includes things like health packs placed before and after sections with large enemy counts, generously placed ammo pick-ups, strength/weakness matrices for certain weapons a player may have versus present enemies onscreen, and smart checkpointing that checks in regularly, usually before and after these kinds of areas. Above all this, communication and feedback to the player is necessary. Here are some examples.

*Physical feedback.* This is the staple of many FPSes, but RESISTANCE: FALL OF MAN lacked it [the game has since been patched for Sony's new rumble controller], and in my opinion really suffered for it. Aside from obvious elements like weapons firing and vehicles moving, most games nowadays tend to use

*Hazard feedback.* Flashing red markers onscreen and other screen filter effects are great for games where your avatar is in 3D space and can be attacked from all angles. HALF-LIFE pioneered this with 4-way red flashes to indicate if damage was greeting you from the sides, behind or in front, but later games like CALL OF DUTY enhanced it by specifying exactly which angle.

*Loss feedback.* This is somewhat rare in games. Usually, this feature is considered taken care of if the game is tightly designed. Some games, such as the critically acclaimed racing game BURNOUT, use an instant replay function. TEAM FORTRESS 2 also does a great job of telling players how they died. Upon being killed, a player's assailant is displayed onscreen immediately crushing any illusions that the player was robbed of a victory by a poorly built game—an illusion suffered by many sore losers [myself included].

## SAVING AND CHECKPOINTS

Checkpointing can polarize players' opinions, when points are spread further apart as a measure of difficulty. Some feel that it's more “hardcore” to play through a large number of acts, for a longer period of time than normal, and eventually succeed. Others feel that save and checkpointing should remain a convenience mechanic and be offered generously, with an “every 5–10 minutes” philosophy at the core.

The truth is, wider checkpointing tests patience and memory as much as it does skill, which can frustrate and put off players. CALL OF DUTY 2 had the best checkpointing implementation I experienced in the new generation, which was expanded even further with CALL OF DUTY 4. Not only was each intensely exhilarating section in veteran mode beatable within 5–10 minutes (in CALL OF DUTY 2, specifically), players would also get

save-able checkpoints which appear before and after a cut-scene, saving players from classic tedium moments such as the “Look at all dat juice” scene from GEARS OF WAR.

This infamous portion of GEARS OF WAR placed players against a group of the tough Theron Guard enemies as they laid siege to a pumping station. Dying in battle restarted the player a long walk back before the action began, replaying a verbal scene in which one of the characters utters the immortal line, “Look at all dat juice.” Repeating this became annoying after a while.

Optional quests are quite a common design choice when providing for hardcore players, as are special missions, or optional pick-ups in the environment. Younger-skewed games, like JAK AND DAXTER, RATCHET & CLANK, and LEGO STAR WARS tend to reward players with an auto-save when finding optional pick-ups. GEARS OF WAR also does this with its COG Tag bonus system.

The great thing about doing this is that players are still rewarded for the task they performed, but if they die, they don't need to do it again—they only need focus on the challenge of core play.

Some games, including many PC FPS, rely on players to use the game's save-anywhere feature, and skimp on checkpoints. Others choose to space checkpoints far apart, also forcing players to redo all the sub-tasks in between, meaning maximum frustration for completists who wish to challenge their skills more than their patience. BLACK by EA Criterion is one of my most remembered offenders in this respect.

Treasure's IKARUGA challenges players to navigate dense curtains of fire while maintaining awareness of their ship's polarity.



feedback in the controller to communicate how close you are to death. For example, if the controller is at a light stage of rumble, the player is being attacked, but is not about to die, or the enemy is attacking from afar with weak munitions. If the rumble is intense, chances are that the enemy is attacking at close range, or with an attack that is bringing the player nearer to death.



In that game, upon walking down a hill, shooting across a field, entering a compound, killing everyone and destroying the place, only to be shot and killed on my way out, I would have to not only restart the whole sequence (20 minutes of play), but also collect all the optional objective items again, costing me that same large chunk of time each and every try. Eventually I found an optimal route and a superhuman level of patience, but until that point, I utterly hated the experience for one section of what is otherwise a very well-crafted game.

The common rationalization designers give when confronted with these criticisms is usually, “the player doesn’t have to do all that. It’s their fault because we made that optional,” but what they forget is that the players most likely to undertake harder skill modes are precisely the ones most likely to force themselves to get all these things and perform all these acts. In essence, the designer is trying to justify these choices with semantics, when what they’re really doing is forgetting the truth about their audience. It’s a key part of understanding the whole point behind these modes.

### ENEMY COUNT

This can also be regarded as bullet count in top-down shooters, or basically any increase in kinetic or AI-driven hazards.

Obviously, the more of any of these elements a player has to deal with, the quicker they have to think, and the greater the sense of pressure and stress, thus the more satisfying it feels when success is earned. But balancing the pressure with actual achievability is quite difficult.

IKARUGA has arguably done this well. IKARUGA is a top-down 2D shooter with a simple mechanic that also made it equal parts puzzle game. The ship has black and white sides, switchable with a button press. White can absorb white bullets and do double damage to black ships. Black can absorb black bullets and do double damage to white ships.

In easy mode, when a player shoots an enemy, it dies and that’s it. In normal mode, enemies you kill with the same color bullet as your ship explode in a hail of bullets. In hard mode, all enemies explode in a hail of bullets. At each stage of difficulty, the puzzle element is changed slightly so that players have to alter their memorized plans of action and possibly adapt their reflexes to be a little quicker. This also adds to the overall stress aspect.

GRADIUS, R-TYPE, and other scrolling shooters have a memory-play aspect in terms of knowing the level’s shapes and movements, coupled with testing of reflexes at great speeds. This is the simplest level of difficulty adjustment, as mentioned

The STREET FIGHTER series popularized complex button sequences as a risk/reward relationship in fighting games.

at the start of the article. The odd additional turrent or enemy in a PC FPS can yield somewhat similar results, while tweaking the player's existing memory map of a level.

Scrolling shooters tend to be perfect for this feature, as their levels are small and the bullets can behave somewhat organically within a fixed environment, blending memory play with reflex play, though players do tend to share optimal solutions for playing through these games.

## INPUT COMPLEXITY

STREET FIGHTER was one of the first games to create a risk-reward relationship between input complexity and onscreen actions. For some time, Zangief's spinning piledriver was the holy grail of hand-eye coordination, requiring a full circular movement of the joystick followed by a punch in close range, which would reward the player by depleting almost a third of the opponent's energy bar.

The risk was getting in close to the opponent, coupled with the fast spin of the stick, which if done too slowly or out of range, would cause Zangief to jump and leave him vulnerable. In comparison, Ryu and Ken's fireball motions were simple, requiring only a quarter circle motion and press of the punch at any distance. The by-product of using input complexity as a difficulty barrier is that it doubled additionally as an entry barrier for new players, meaning an instantly limited audience, though culturally, its relevance changed gaming for the next ten years.

Interestingly, David Sirlin, lead designer of SUPER STREET FIGHTER 2 TURBO HD REMIX has decided to change some of the move inputs from the original game to be more accessible—and this includes Zangief's spinning piledriver. Sirlin believes the difficulty should come from the think-on-your-feet strategy aspect, rather than the player's ability to swirl inputs.

"I think [SUPER STREET FIGHTER 2 TURBO HD REMIX] is much improved with the easier commands," says Sirlin. "Instead of T.Hawk and Fei Long being practically non-characters [as they were in the past], they are fairly easy to start playing and much more fun. The strategy in STREET FIGHTER is much better—not much worse—when both players can execute the moves. It's not like being good at the game has gotten much easier just because special move commands are more forgiving. It's more like being able to play it at all in the first place is easier.

When the best players in the United States play the in-development version of this game, they say that it's more strategically interesting than before. The new commands for moves are only a very small part of that. But what's more important than any of that are the actual balance changes that allow the previously weak characters to compete more fairly with everyone else. There are several match-ups that were simply boring because one character had a very dominant pattern to rely on. Most of these have been greatly toned down so that new mind-games take the place of old, robotic patterns.

New STREET FIGHTER players will, I hope, discover a much more interesting path to improvement by focusing on these strategic match-ups, rather than simple move execution."

## LEGENDS OF DIFFICULTY

Bungie's HALO series is often praised for its excellent execution of difficult play in the form of its Legendary mode. Not surprisingly, the team took a very well-thought out approach to introducing and tuning difficult play. HALO 3 gameplay designer Francois Boucher-Genesse explains that it's not just a case of one formula fits all.

"It's not like we just cranked every enemy's health by 200% and called it Legendary," he said. "There was a good amount of



Street Fighter 2 Turbo HD remixed has altered control input for ease of play.

custom changes made per mission as well. In that sense we encourage players with previous HALO experience to play at least on Heroic, since they get to see the game in its full scale."

"A really similar formula was used for every HALO game," continued Boucher-Genesse. "What did make a difference was the time spent tweaking and fixing issues to make the game fun on every difficulty level. All titles had more bad guys, stronger and more accurate enemies with faster projectiles. And they used similar numbers for each of these parameters."

When your company budgets for tuning of difficulty levels, the result is extended longevity for the game, and increased enjoyment for players at all levels. It goes without saying that games should be appropriate for their target players on all levels, providing challenges for each skillset. One important thing to remember, which has been creeping into games recently, is that players aren't often able to determine their own difficulty levels. They may think their skill level is far above or far below the actuality.

In METAL GEAR SOLID 3, players are asked if they've played a previous iteration of the series, and are assigned a difficulty level based on this. This is a pretty good way to go, and CALL OF DUTY 4 takes it further. Players go through a training course in the beginning of the game, which also gauges their ability, recommending a difficulty level at the end. Most players will take this recommendation when it's directly from the game universe, rather than making a choice on a list before ever having touched the game. With all the elements in place, the life of a game's single-player campaign is extended enormously. ❖