Patrick
Holleman

REVERSE DESIGN

Final Fantasy VI

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Reverse Design

Final Fantasy VI

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Final Fantasy VI

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Introduction

This book is the first entry in the *Reverse Design* series, which began in 2012. The goal of this series has been (and continues to be) to do book-length primary research on some of the classics of videogame design. Although the field of videogame design analysis has expanded enormously in the intervening years, that goal remains important. There are a lot of great game design books out there, but most of them focus on the fundamentals of videogame design. Those lessons are essential, of course, because it's impossible to pursue any vocation without good fundamentals, but I find that, even today, few books focus on the design of one classic game. To me, the abstract study of game design theory and fundamentals is incomplete without the concrete study of game design history focusing on the classics. It's like a musician studying scales but not Beethoven. Where single-game analysis does exist, it tends to exist in the short video format. Given the visual nature of videogames, it should be no surprise that video has become the most popular format for their examination. Having made some of those videos myself, I know that videos have certain strengths and weaknesses. Video is a great medium for talking about the design of 3D environments, physics, and the visual language of games. Video tends to be less successful when it comes to looking at large visualizations of data, like tables, graphs, and charts. Those visualizations, especially when they involve a large amount of complicated data, don't play well in a 10–15 minute video format. Thus, this book (and five other books in this series) fill the specific niche of documenting, in rich detail, all of the design decisions that went into classic videogames.

I chose *Final Fantasy VI* as the first book in the series because, whatever else might be true about it, it is a classic. Since the game came out almost 25 years ago, many millions of people across two generations of players have sung its praises. The game exhibits quite a few design ideas that ought to be documented as fully as possible so that we might understand why the game has endured for so long. I also

chose *Final Fantasy VI* (hereafter *FFVI* except at the beginning of a sentence) for a practical reason: there is an enormous amount of information available on the game. I would not have been able to do this project without the incredible data sources provided by Kris DeHart, Jeff Chan, MasterZED, Meeple Lard, and many more, including a few IGDA colleagues. With such a wealth of information, it has been possible to glean quite a few lessons about the game that would have been impossible to know from merely playing the game normally. Those lessons can tell us a lot about the practice of videogame design as a whole.

What Makes *FFVI's* Design Special?

The foundation of *Final Fantasy VI* is its large roster of playable characters. Everything else in the game was designed to accommodate this. A number of current and former Squaresoft employees have spoken to the fact that the game's 14 characters were the first invention of the team. Of course, it's very likely that some work had already begun as this was happening because many design features from older *FF* games carried over. What we're interested in, however, is what's different about *FFVI*. What makes the game special? The features unique to *FFVI* are all design ideas created to accommodate a roster of 14 playable characters. There were three primary design ideas:

1. The diminution of character classes.
2. The emphasis in design on entire dungeons as the meaningful level of content, rather than individual battles, forcing the party (or multiple parties, as happens) to play the "long game."
3. The centering of the narrative upon a villain who operates like a main character, as well as a central theme rather than a central plot.

The Diminution of Character Classes

The most historically significant design concept is the first one, the diminution of character classes. Meaningful character/job classes were one of the most durable ideas from tabletop RPGs, appearing in virtually every RPG that featured more than one playable character. These character classes force the player to make tactical decisions. Do I use a fragile mage for more damage? Do I use a heavily armored knight to outlast the opponent? Do I bring two healers, sacrificing damage to ensure victory in the long term? Even when the player is able to choose party composition or is able to change the job classes of party members on a whim, there are always tradeoffs to be made for the use of one job class instead of another.

In *FFVI*, these tradeoffs largely disappear. As the player gets deeper into the game, the significant differences between job classes disappear. Talented mages, which in other games had low defense, can often wear heavy armor in *FFVI*. Rugged fighters can learn magic and use it well. In fact, because of the second point

mentioned above—the "long game"—it's almost *essential* that every character class learn magic. Every single character in the game has a nearly identical pool of health points (for survival) and magic points (for casting spells), from the beefy martial artist to the 10-year-old painter. By the end of the game, and without over-leveling, it's possible to beat the final boss with any combination of characters with ease.

The diminution of character classes was an intentional decision on the part of the designers, and there are two reasons for it. The first is that there is little value in a game with fourteen characters, only a few of which are actually usable. There are only so many roles a character class can fill, and as such, the difference between those roles would come down to effectiveness. Why use Strago when Celes is so vastly better? As far as stats and armor go, Celes and Strago aren't markedly different if they're at the same character level. By the end of the game, there's not a huge amount of difference between the best "light" armor of Strago and the best "heavy" armor of Celes. Their magic stats, HP, and MP are all closely comparable. Celes has an advantage in weapons; Strago has an advantage in his special ability. A player who likes to use Strago out of personal preference will find no practical reason why he or she should not do so. Any group of characters can form the main party and do well at it, and this is because of the diminution of character classes.

The second reason for the diminution of character classes is that, at several points, the player must use more than one party, and for the final dungeon must use 12 out of 14 possible characters. (Technically, the player can use fewer than 12 characters, but it's a bad idea.) Accordingly, if every character class were subject to unique, complicated rules, restrictions, and tactical drawbacks, it would be inordinately difficult to organize those multi-party adventures. In order to be useful to a player who has limited time and attention, the characters must be different but not too different; thus, we arrive again at the diminution of character classes. The diminution of character classes is actually a design trend composed of many other smaller design decisions, so naturally there are numerous things to discuss, and no single chapter summarizes that trend entirely. Those smaller ideas consist of standardization of stats, non-linear distribution of gear, and an emphasis on a universal skill: magic.

The Long Game

The discussion of multi-party dungeons brings us to the second element central to the design of *FFVI*, the use of dungeons as the level of content delivery. This terminology is a little confusing because of its compression. Basically, this means that individual random battles in dungeons are rarely significant. In other RPGs, even in other *Final Fantasy* titles, there are usually a number of special encounters that require extra attention and strategy. Legendary enemies like the Mecha Head, the Great Malboro, the War Mech, and Mega Tonberry all appeared as random encounters in earlier *Final Fantasies*, and terrorized players with their surprising power. *Final Fantasy VI* doesn't really have that kind of encounter. Within any given dungeon, the encounters tend to be of a similar difficulty.

Across the course of the game, random encounters evolve quite a bit, although not in the way that most people would expect. Most people probably expect that enemies get harder because their underlying stats like strength, defense, and magic power grow. Enemy stats do grow, but that growth is only a minor factor in the growth of the difficulty. If we compare the growth enemy and player statistics across the course of the game, there's very little variation. Using a statistic that measures the survivability of players and enemies, it emerges that most monsters stay within a narrow statistical band, and there is no clear growth across the course of the game. With characters of level equal to their opponents, it should usually take about the same number of attacks to finish an encounter. The same strategies for winning battles that the player uses in the beginning of the game are still valid at the end.

Meaningful increases in difficulty do not come from the inflating durability of enemies, but rather from increased activity and threat from enemy abilities (but not because of pure stat inflation). The change in dungeon difficulty arises out of the increased need for players to heal their party, more often, more fully, and in new ways. In the second half of the game there are no purchasable items that will fill this need, so the player must rely on the same MP pool for healing that also supplies their attack magic. Items that restore MP are either scarce or expensive. There are battle strategies that can refresh this MP pool, but they're not universally effective and leave the characters open to additional (and often exponentially deadlier) attacks. Thus, a player's strategy for a dungeon isn't based on individual encounters, but instead focuses on the party's ability to make it from beginning to end, or from save point to save point.

This is what I call designing (or playing) the "long game" in a dungeon. Especially when it comes to the final dungeons of *FFVI*, where multiple parties are in play at once, this kind of meta-battle strategy becomes especially important. The player needs to organize multiple parties not just by power, but by their ability to survive the long-term attrition of encounters. As we'll see in the section of this book on dungeons, the constituent design ideas are the standardization of stats, the caster's advantage, and a regularization of a meta-stat I call real durability.

Organizing a Charming Chaos

The final design principle that makes *FFVI* special is the way its story is organized. It is no easy task to write a plot for a dozen or so characters who existed in substantial form even before the script was begun. For another thing, it's not easy to write for so many characters when the total length of the dialogue runs less than 20,000 words, as it does in *FFVI*. For a third and even more onerous hurdle: the second half of the game is non-linear, and all of this has to take place in such a way as to make the game not just readable, but playable as well! To address this, the design team made two interconnected decisions. The first decision was to have the villain act like a main character. Kefka is on screen an awful lot; he speaks more words than almost all the party members. Most of the sub-plots and quests feature Kefka, or the results of his actions. Most of the party members are affected

directly by Kefka's aggression. The other decision was to center the second half of the game around a theme (hope and resolve in the face of catastrophe) rather than a plot. The quests in the second half of the game are largely personal, rather than quests for important macguffins or decisive military engagements as we tend to see in other RPGs.

In order to make this happen, the second half of the game needed its own organizing factors. One of those factors was the expert use of NPC dialogue. (In truth, both halves of the game are well done in this regard.) *Final Fantasy VI* uses its NPCs to masterful effect, reinforcing the themes of the game not just with individual bits of dialogue, but with a shifting trend among an entire population. This population also serves to organize gameplay by use of what I call ironic communication, or NPC irony. NPC irony involves veiled directions from the designers couched in narrative format so as not to break the spell of the imaginary world. A full survey of the categories for NPC communication is in Chapter 4.

Another design decision that affects the organization of the game is the way that the non-linear half of it is constructed. Being that there is a definite goal (to defeat Kefka), how can all the disjointed quests form an artistically complete whole? *Final Fantasy VI* solves this problem through a level-up system that is both "tall" and "wide." Those terms are comprehensively defined for their RPG context in Chapter 3, but the basic idea is that non-linearity has its own strengths. Distributed throughout the second half of *FFVI*, in no particular order, are dozens of pieces of gear and magic necessary for the final dungeon. The characters that the player needs to reclaim are similarly scattered across the world of the game. The strange thing is that because these things are not in a linear order, they give the second half of the game artistic fullness. That is, because every dungeon, chest, and encounter can be equally important in terms of the gear and magic they give or the characters they return to the party, those dungeons are really memorable. Combined with a long climb to the higher character levels, the game feels diverse, meaningful, and climactic for reasons discussed.

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1

When Narrative Has to Fit the Design

Quests and Quest Structures. 2
Who Said That?. 3

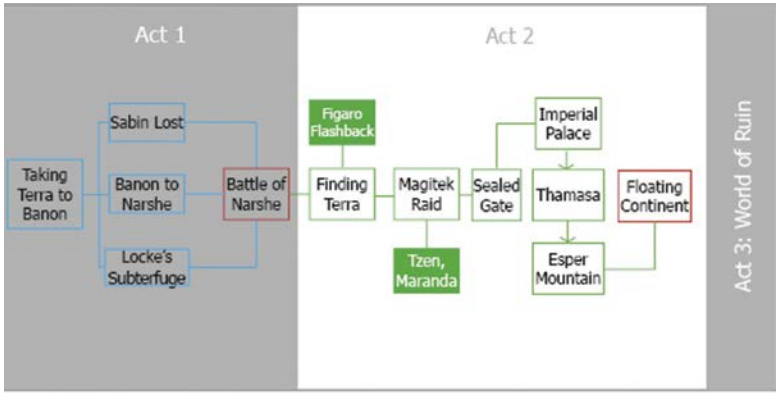
The Short Version: This section deals with the construction of plot when it has to meet the demands of a game, much of which has already been established before writing began. With statistical analysis of the script and who speaks it, obvious design choices appear. *Final Fantasy VI* was created around a roster of characters developed well before most of the other aspects of the game. Moreover, there are a number of tropes common to the *FF* series that had to reappear. What the *FFVI* team did to work around this was center their plot around a villain and an event, so as to allow 14 different characters to have individual stories without making the game seem disconnected. This also made communicating the thematic messages of the game easy without seeming overbearing or last-minute.

This is not a literary critique of the plot of *Final Fantasy VI*. Rather, this is a look at how the design team chose to structure their plot and develop their characters to accommodate the videogame, which was the real product. The general thesis of this section is that everything in the game was done to accommodate the cast of characters, many of which were developed before the plot of the game was written. I'd argue that as far as this is the case, the plot came out well, being written and influenced by numerous people from the development staff.

In recent years, the gaming public has looked back fondly on *FFVI*, and the *Final Fantasy* games of the 1990s more generally. It wasn't always this way. For a long time, Western critics of the series contended that the plot and characters of *FFVI* were juvenile and saccharine. For these critics, "serious" games began with titles like *Ico* or *Bioshock*. Granted, the *Final Fantasy* team didn't have the kind of creative latitude, industry development and standards, or money in 1994 that the *Ico* or *Bioshock* teams had in the mid 2000s. This is not an apology for the shortcomings of *FFVI*, but rather an admonition that we really ought to examine how *FFVI* does a lot with a little. In many cases, *FFVI* can convey meaning, emotion, and experience very judiciously. Because the creators had fairly tight restraints on the product they had to make, they were very creative and often quite sly about how they made their game artistically appealing and complex. The goal of this chapter is to try and identify all those great tricks, so that all of us can understand more about what makes a great game, and so future designers can use these tricks to make their games better.

Quests and Quest Structures

To understand the story elements of *FFVI*, we must start by looking at the story and script from the highest level. In the most general sense, what is the story about and how does it communicate its message to the player? Since the game is a role-playing game (RPG), one thing we can be sure of is that there is an overarching quest and it's probably made up of several smaller quests. What is the quest? Saving the world is the quick answer and there are certainly elements of that in the game, but I think that the story of *FFVI* subverts the traditional save-the-world-from-destruction trope to a certain degree.



II divide the whole game into three main parts. Each part begins with someone waking up. Terra wakes up in Arvis' house, after the prologue, beginning part one. Locke wakes up in the same bed, after Terra is revealed to be an Esper, beginning part two. Part three is more obvious: the beginning of the World of Ruin. But that also begins with someone waking up: Celes, on the Solitary Island.

The world ends halfway through the game. It's not a literal, end-of-everything Armageddon, but the plot does see the world take a big step in that direction.

Kefka probably *could* have ended everything, or at least every human life, but he doesn't. (There's a good reason for that in Kefka's character section.) Still, as several characters and non-playable characters (NPCs) remark, the world is only getting worse after the catastrophe. The end may be soon.

Another way to look at this question is to examine how many quests are about saving the world. This is an RPG after all, and there are quests whether they're announced or not. As I see it, there is no point in the game where the quest is to save the world from destruction. Certainly, the second half of the World of Balance is about saving the world from oppression, but hardly destruction. Gestahl wants to rule and says as much. The destruction of the world, on the other hand, is a split-second decision by Kefka who didn't know (and didn't care) what the results of his actions would be. If he hadn't decided until that moment to end the world, how could there ever be a quest to prevent him from doing so?

The final quest, to kill Kefka, would seem to be the world-saving heroic act. I contend, however, that it's actually not. Killing Kefka means removing a crazed demigod from power, but there's absolutely no guarantee that this will restore balance to the world. Rather, just before the final showdown, each character tells Kefka what gives him or her the strength to go on living in a ruined world. Inasmuch as this is the structural "conclusion" of the game, it stands to reason that the game is "about" the characters finding their strength and reasons for living in a broken world. In a sense, the quest is not to save the world but to struggle with and overcome the tragedies and monsters that inevitably arise in it.

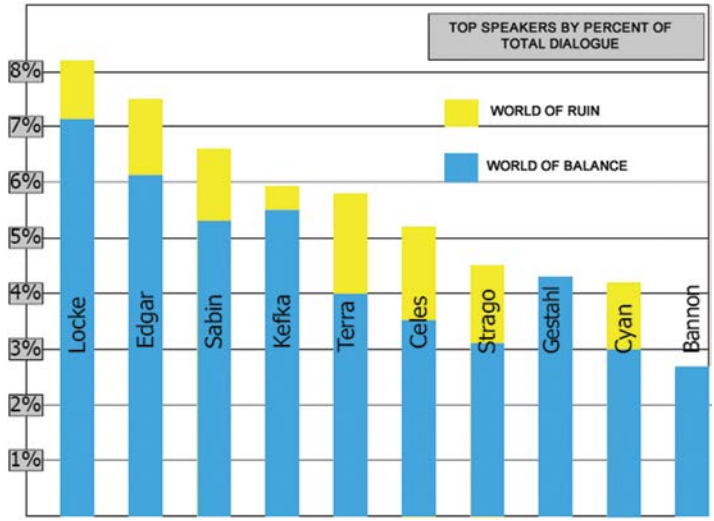
Several former Squaresoft employees have said over the years that one of the first steps in creating the game was creating the roster of characters. This suggests that the story is really about the characters, their reaction to a central event (the unbalancing of the world), and their struggle to maintain hope and resolve. There's no meaningful distinction between the construction of the narrative and the design of the game; they were built together in order to accommodate the characters. The rest of the design reflects this as well.

Who Said That?

Another way to look at the story objectively is to look at who tells it. There are 14 playable characters (12 of whom say something meaningful), two important antagonists, and a host of supporting characters. Surely the proportions of their speech should tell us something about how the story was not just written but designed for the game.

A quick note on my methods: I counted all mandatory script scenes in the World of Balance and everything in the World of Ruin (since very little is mandatory, but there isn't much of a game otherwise). That means I've left a few things out here or there that I considered to be outside the scope of the "script." Thus, I do not give my exact word counts. What I do preserve are the proportions. Even If I were to add every conceivable jot of character dialogue here, the proportions would change very little. One final note: I used the original Woolsey translation.

While there are differences in nuance between that and the Game Boy Advance (GBA) port, there aren't substantial differences in length.[1]



I'd wager that most people didn't expect to find that Locke speaks the most. Certainly, few think of him as the main character. It does make sense from a certain perspective that he speaks the most: he shows up early in the plot and is very talkative. The same is true for Edgar, who shows up early and frequently acts as a leader; it makes sense—he's a king, he's got a lot of practice at it. On the other hand, Shadow shows up very early, but he's extremely laconic, so his totals are low. Who is the main character? It's not clear from this angle.

The most interesting aspect of this analysis, to me, is that Kefka is the fourth highest source of dialogue. In the World of Balance where most of the plot happens, he's the third highest source of dialogue. (He'd probably maintain his third spot if he appeared anywhere besides the final dungeon in the World of Ruin.) He's also the first named character to appear on screen in the prologue. This doesn't happen too often. Consider how few Sephiroth's, Exdeath's, Ultimecia's, or even those of Zemus were. Kefka is unusual among *Final Fantasy* villains and among RPG villains in general.

Why make Kefka such a dominant presence in the game? One reason must be that with 14 playable characters, it's difficult to center the plot on one issue that would be meaningful for each member. Kefka's big personality, his grandiose and cruel actions, and his trademark laugh give the player and the characters focus. A cold, calculating villain picks his battles and doesn't fight everyone. Kefka, being like a literal psychopath, is wild and unpredictable. He's chaotic, talented, and dangerous. It's not hard to believe that everyone in the party—even members of his own faction—have problems with Kefka. It's not hard to believe that everyone

in the world would be right to fear him. You cannot be on Kefka's side. What side is he even on? Kefka embodies disaster: impersonal, chaotic, and incomprehensible. Much like a disaster, he brings disparate people together, including the 14 player characters.

Kefka also frames the theme of the game in a question during the final encounter. He says, "Why do people rebuild things they know are going to be destroyed? Why do people cling to life when they know they can't live forever?" It's kind of a daunting question, isn't it? I'd challenge anyone to pick a quote from a videogame that's as obviously (and effectively) directed at the player. I'd also challenge them to find a villain who can say it so convincingly in-character. It's a rare feat. It's not really fair to say of the game that it's another in a long line of generic, world-saving adventures. The heroes are not succeeding in brilliant fashion; they're making do with the situation presented to them. (The NPC chatter reinforces this thematic approach quite obviously.) This is clearly reflected in the quest structure of the second half. Virtually every character has a quest about dealing with something they've lost, and it's definitely the characters that make the story, Kefka included.

> *Fun trivia bits!* About 0.5% of the script was delivered in written notes; about 0.6% was delivered as song. Espers spoke about 3.8% of the dialogue, while other non-humans spoke about 2.3%. How about this bigtime effort: dead characters spoke 2.3% of the dialogue, despite their obvious impairment. About 7.7% of the script—a relatively large chunk—was spoken by an actor only identified by quotation marks, so as to allow any party combination to speak the same words. Last but not least, omniscient narration gives us roughly 2.45% of the script.[2]

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2

Examining the Balance of Plot, Exploration, and Combat

Wide and Narrow Levels . . . 10

The Short Version: The first half of this section attempts to quantify the three constituent elements of *FFVI*: plot, exploration, and combat, and weigh them in proportional measure. This measurement is based on the notion that in *Final Fantasy VI*, like many RPGs, the overall structure of the game is that of linked quests. From the measurement of these elements on a graph, the pacing of the quests becomes very clear and its pointedness is explained. The second part of this chapter analyzes the how the level-up system is both wide and tall, two technical concepts which help tie the second half of the game together structurally.

We'll get to characters (and music!) in the next section, but before we do, there's one last way to analyze how the plot fits in with the game. As I see it, there are three elements to an RPG, and while they frequently overlap, it's fairly easy to distinguish them. Those three elements are plot, exploration, and combat.

Plot is fairly obvious: it is the story that the game tells to frame the events of the narrative. Some games don't have plots, but most RPGs do. Obviously, it is possible to have many diverging plots in one game; to some degree, the second half of *FFVI* dabbles in multiple storylines, but not in an especially complicated way. When quantifying plot, I counted all the script words spoken on a given quest.

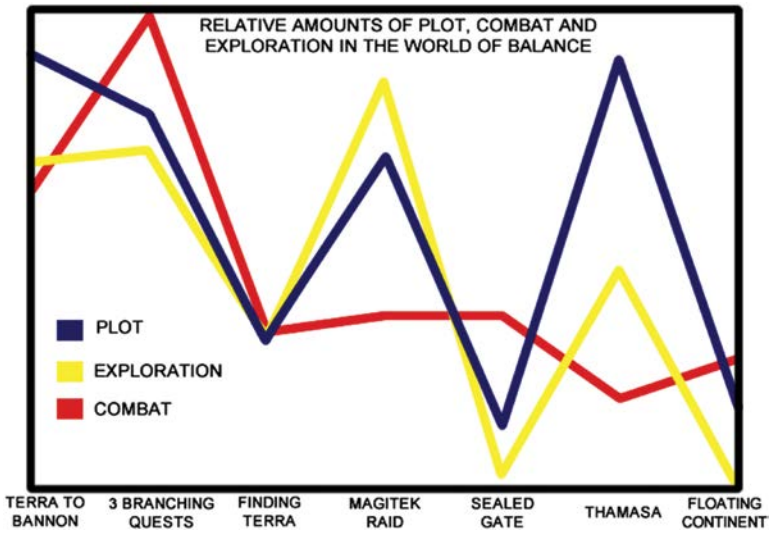
As to how I divided quests, I usually looked for a moment in the script where the stated objective changed.

Exploration is all of the non-combat action performed in the world. Exploring towns, viewing optional scenes, talking to NPCs, and many other things are all exploration activities. There is often a lot of overlap between exploration and plot, but not too much in *FFVI*. Moreover, even in games where there is overlap, it is still possible to quantify and analyze the design choices made to create exploration.

Combat seems simple enough: How much fighting is involved in each quest? This turned out to be trickier to tabulate than I expected. How do you assess how much "fighting time" each dungeon represents? There are actually numerous ways to do it, although each of these ways brings up more questions than results. For the purposes of the pacing graph, however, we want to know about is quest design, not dungeon design because we're still analyzing how the plot, exploration, and combat interact to form our perception of the game's overall experience. (An analysis of the dungeon design, which was often deceptively elaborate, follows in Chapter 6.) To analyze how the combat is constructed to form quests, I analyze it using what I call measured time (this is a meaningful term, I promise; see below). *FFVI* measures time by using a step count, which is also used to figure out when to start a random encounter. Dungeons are constructed on an invisible grid, each block of which represents a step for the party. The distance from the entrance of any given dungeon to its exit is a concrete number of steps, given the ideal path. Thus, you can rate a dungeon based on the minimum number of steps that it takes to go through it.

Unfortunately, nobody travels the perfect path through a dungeon or, at the very least, they don't do it their first time through a dungeon. There are often distractions like puzzles and treasure chests. *Final Fantasy*, as a general rule, is not as puzzle-heavy as something like *Legend of Zelda* or *Lufia*. In fact, in the first half of the game, there is only one dungeon with real puzzles—the Cave to the Sealed Gate. Accordingly, when fashioning a combat "score" for each quest, instead of relying upon puzzles to inform me of the accurate length of a dungeon, I rely on treasure chests.

FFVI's treasure chests are unusually rich; there are a lot of them and they frequently yield something very useful. (This is especially true in the second half of the game, but the first half has its fair share of great loot.) Players learn quickly that it helps to go off the critical path to get a chest because they know that its contents could be extremely useful. What I have noticed is that because of the usefulness of chests, every chest in a dungeon makes a player more eager to search for the next chest. Accordingly, I gave extra combat weight to dungeons with more chests. Finally, I added extra points to the combat score for having more bosses in a quest. In any case, the graph is below, and we'll break down its meaning and trends.



Of course, the "scores" on the graph were adjusted so that they all fit in the same space—that's why there are no numbers. There's no way to make these three elements equivalent in a strict mathematical sense, and I don't even try. The point of having them all on the same graph is to show how the designers chose to use each element in what *relative proportion* for each quest. For example, you can see that the quest to find Terra has relatively less of all three game elements. There aren't too many dungeons, not a huge amount of exploration, nor much plot. This I attribute to pacing. If every quest were longer than the last, the game might feel tedious. The same pacing move happens when the party journeys to the Sealed Gate. The designers are making the middle of the World of Balance flow by alternating short and long quests. One other important thing to note is how the combat score actually has a downward trend from beginning to end. Exploration and plot jump up and down quite a bit, but the combat score starts high, climbs to its highest point in the second quest, and then descends, plateaus, descends again, and never makes it back to previous levels.

I admit that my scoring system has its flaws, but I don't think that fact alone accounts for what the graph shows. Rather, I think it actually shows that earlier dungeons are designed to be bigger (and have more battles), but not harder. Later dungeons are shorter but much denser with treasure and difficult encounters. Ultimately, this is a design feature that has to do with real durability (RDur) and damage against the average enemy (DAE), a couple of statistics that describe exactly what these dungeons are doing. But that's in Chapter 7—we're still talking about story and presentation right now.

Of course, those who have played the game (and perhaps some who haven't) will immediately recognize that this kind of three-pronged analysis can't really be made to work on the second half of the game. While there is plot, it's not linear. Moreover, the gameplay structure of the World of Ruin is flexible as well. The player's ability to choose the structure of the second half means that in order to analyze how the World of Ruin is constructed, we must use a different technique.

Wide and Narrow Levels

Why is it that the World of Ruin (the second half of the game) feels artistically complete? Why does it feel like half the game when it's only 25% of the script? Is it just all the dungeons you have to do? I'd say no; there is something else at work. In the mid and late 90s, there were numerous mediocre Japanese role-playing games (JRPGs) that attempted to follow in the wake of *Final Fantasy's* success. Generally, these games were able to get right the large worlds, well-drawn characters, and even interesting combat concepts. Those games usually failed because the end of the game was a series of gigantic, interminable dungeons that added nothing to the game except boring length. How did Squaresoft avoid that?

To understand how *FFVI* is different, we have to understand how players perceive the game, retrospectively. Specifically, we have to understand what stands in for the natural increase in player skill. A player of a real-time action game (including genres like first-person shooter [FPS] and fighting games) remembers the game they've played in two ways. First, they have a general impression of the experience. This impression is what they'll probably form their first opinion about. Second, and perhaps more important, is their skills; players remember a game through, and because of, skills. More than one accomplished designer has argued that videogames are nothing more than learning experiences and that games are engaging because learning cumulative skills is inherently fun. If that's true, what players remember of an action game in the long term is heavily influenced by the skills they acquire while playing it. Of course, the more skills they learn, the better the game will seem, retrospectively. (Sometimes this is confounded by other factors.) Playing through the game again will remind them of how much they've learned, how much they've mastered. The greater the distance between the player's first fumbling attempts and their current level of mastery, the greater the retrospective impression of the game will be for them. "Wow," they tell themselves. "I sure came a long way. What a game!"

Games like *FFVI*, which lean heavily simulated skills, cannot be remembered quite in the same way because the player does not gain most of the skills, the characters do. (This is what is meant by "simulated skill;" it is any skill a character learns rather than a player. I.e., the player doesn't have to learn a button combination to cast Fire 3—Terra learns it when she reaches level 43.) Generally, the acquisition of skills by characters is not a process of mastery, but a process of discovery. The player has to locate and unlock character skills and equipment, which are simulated substitutes for mastery. Hidden spells like Melton, hidden weapons like Illumina, hidden characters like Gogo—these are the trophies of a

game rich in simulated skills. The player has to work hard to find these assets for their party. Thus, when the player is remembering the game and thinking about the artistic completeness of what they finished, they remember the things they discovered rather than the things they mastered.

There's a problem for games like *FFVI*. Even mediocre action games will clearly leave the player more skilled at the end than they were at the beginning, and this accumulation of player skill is gratifying. Every twitch of the thumbs causes the player's brain to recall all the skills that went into the action he or she is performing now. RPGs do not share this trait. In a mediocre RPG, a player replaces all of their gear with gear from the next shop. I.e., the player replaces all of his leather armor with iron armor, and then iron armor with silver armor, and so on. Finally, the player replaces all of that gear with treasure found in the last couple of dungeons. This is the worst kind of linearity. Because the best gear (or most of it) in this circumstance is simply plopped in front of the player, their impression of the game will suffer, in retrospect. For one thing, the game is too easy; it's just a series of inflating stats that are placed, unavoidably, in the way of the player's party. What is the player going to remember about their agency in the game? That they pressed "A" at all the right times? They didn't have to be clever or curious, or work hard for their skills and gear. That can be really disappointing. How does this affect the design of the World of Ruin in *FFVI*? The second half of the game is non-linear, so the designers are already at a disadvantage when trying to make their game feel complete. Only a few quests in the second half (like Cyan's) build on other quests. How did the designers make them feel like they add up to a cohesive whole? The answer has to do with the way that level-ups are structured.

First, I want to define what I mean when I say "level-up." I define a level-up as a permanent, periodic increase in simulated skills. Let's break this down term by term. Level-ups are permanent; once Sabin goes from level 21 to level 22, he's not going back down to level 21. Periodic means that Sabin gains levels at regular intervals when he has gained enough experience points. The differences between levels are fairly regular; after level 30, each level-up only requires 4%–6% more experience than the previous one. The last item in the definition is an increase in simulated skills. At level 22, Sabin has just a little bit more HP and MP than he does at level 21 and does slightly more damage with all his attacks. Those are all simulated skills for surviving and casting magic, but Sabin's character level is only one small facet of how powerful he is. This is the basic damage formula for *FFVI*:[3]

$$\text{Damage} = \text{Battle Power} + ((\text{Level} * \text{Level} * \text{Attack})/256) * 3/2$$

This is for the "fight" command, but almost all of the damage formulae are similar. While Sabin's fight damage goes up with his level, it only goes up a little bit. Stats other than his level affect his fight and special ability more than his character level does.

The most important thing to understand about this is that the other parts of the formula are also level-ups. If a level-up is a permanent, periodic increase in simulated skills, finding new weapons is a level-up, too. In every town (for most of the game), there are new weapons and armor that replace the old weapons and armor. Each new weapon increases Sabin's simulated fighting skill just the same as an increase in character level would. In fact, there's even a statistic used later in this book called LEQ which measures this. Battle power, as described in the equation above, includes weapon power. If Sabin were to go from his first weapon in the World of Ruin to his last weapon found in the World of Ruin, the increase in damage would be equivalent to about six character levels gained. Because these weapons come so regularly, we can safely say that (at least for most of the game) they too are a permanent, periodic increase in simulated skills. If you think they aren't permanent, just remember that players equip their characters with new weapons in succession. The increase in damage output from the Dragon Claw is permanent until it's replaced by the greater increase of the Tiger Fangs. It's the same as saying that the increase in stats of level 21 is permanent until replaced by level 22; there's no functional difference. Even when players move gear from one character to another, those levels aren't lost, they're just re-allocated from a pool of levels that can be disbursed to many characters. Thus, gear is effectively permanent until replaced by something clearly better, which happens on a regular basis.

Final Fantasy VI's levels are memorable because there are a great variety of them and the player has to be curious and creative in order to access all of their power. There are a number of interlocking systems at play in *FFVI* that serve as paths toward level-ups. Character levels are one, and they are acquired through experience points. Purchased gear is another way to increase a character's level, acquired through another kind of experience system: GP (or Gil in later versions). The "magic points" (later AP) system also works as a kind of experience system for learning magic. Last but not least, there is also the Esper stat-boost system, which appends bonuses to core character stats like vigor and stamina. This system is the most complex, because it requires players to plan and ration their level-ups in strategic ways.

There are also other systems outside of battle that behave in the same way, requiring the player to be clever in his or her search of level-ups, rather than merely grinding. The most obvious example of this is the search for gear. In the World of Ruin, where there is no fixed quest order after the acquisition of the airship, the available dungeon loot greatly expands the player's path to power. For the most part, this is because most of that loot is of permanent use. In many RPGs, the best loot is acquired near the end of the game and it replaces all the gear that came before it. *FFVI* avoids this pattern in more than one way. While there are two sets of armor that are the "best" in terms of protection, there are many sets of armor that almost as good, but those pieces of armor are scattered about the entire world. In a bad RPG, all of the best armor and weapons would be in the second-to-last dungeon. In *FFVI*, there is no real

second-to-last stop to provide this gear. If there were such a dungeon, it would destroy pacing of the second half of the game. Why would the player do any of the other optional content, when they can simply do that one dungeon to get all the gear they need? Instead, what you see is a division of permanently useful gear into a number of dungeons, starting even before the retrieval of the second airship (Table 2.1).

Table 2.1 Endgame Loot from World of Ruin Quests

Quest	Level	Weapons	Armor	Accessories	Espers
Figaro Cave/ Basement	27	Soul Sabre	Regal Crown		
Daryl's Tomb	29		Genji Helmet, Czarina Gown	EXP Egg	
Narshe	30		Ribbon, Ice Shield		Tritoch
Umaro's Cave	33		Minerva	Gauntlet	Terrato
Mount Zozo	34		Flame Shield, Thunder Shield, Red Cap	Gold Hairpin	
Owzer's House	36				Starlet
Cave on the Veldt	36	Striker, Tiger Fangs	Behemoth Suit		
Cyan's Soul	39	Aura	Flame Shield, Genji Glove		Alexander
Gogo's Realm	43		Genji Armor, Red Jacket, Thunder Shield		
Ancient Castle	45	Gradeus, Scimitar, Doom Darts, Wing Edge, Punisher		Gold Hairpin	Odin/ Raiden
Phoenix Cave	47	Wing Edge, Valiant Knife	Flame Shield	Ribbon	Phoenix
Fanatics Tower	52	Stopper, Pearl Lance	Force Armor	Gem Box	

The correlation between dungeon level and the gear available within is not nearly as strong as it would be in a strictly linear game, so there's no covert linearity lurking in an allegedly open environment. The later dungeons tend to have a little bit more gear, but not definitively higher-quality gear. This is most obvious with the Ancient Castle, which is enormously rich. It's certainly no picnic, but it's a short dungeon and doesn't require the player to be at a very high level.

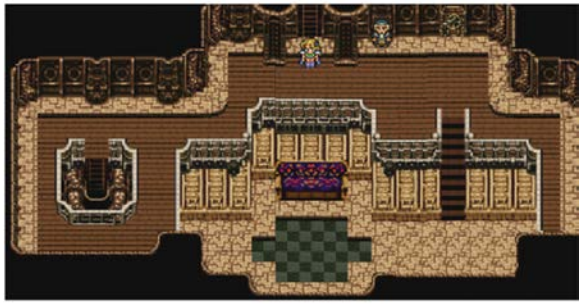
It's relatively easy to exit and has a save point mid-way through. It also has an enormous amount of powerful loot—especially weapons. After the player finishes this dungeon, their party will have a significant increase in power.

To demonstrate the psychological results of a dungeon like the Ancient Castle, let us imagine a fictional player. He or she enters one of the non-linear dungeons of the World of Ruin and gets badly beaten by the monsters there. He or she then resets the game, goes to a different dungeon, and finds a bunch of loot. Remember that most of the dungeons in the World of Ruin have at least one piece of gear or an Esper that teaches spells which are viable for endgame content. Returning to that first dungeon with new gear and spells, the players succeeds with an inflated sense of accomplishment. "This used to be so hard," he chuckles. Linear games can't really match this. Players can't skip to later dungeons and can't foresee the difficulty that they have to overcome. This makes the levels that the player gains seem fuller and more meaningful than they might in a more linear game.

This scenario illustrates the meaning of the terms "wide" and "tall" levels. A level up system can be tall or short. Final Fantasy games feature 99 possible character levels, compared to something like Baldur's Gate, which comes with a cap at level 20. *Final Fantasy VI* therefore features a "tall" level-up system, in that the player builds upon the same stats and equipment slots over and over up to 98 times. *Final Fantasy VI* also has "wide" levels. As explained above, all those pieces of gear and spells are level-ups, too. Instead of upgrading that gear and those spells in a boring linear fashion, they have to deeply explore the world of the game to find them. What's more, there's a great variety in those spells and gear. There are numerous combat spells like Fire 3 and Ultima, but there are also utility spells like Haste 2 and Osmose. There is armor with ultra-high stats like the Genji Armor, but there are also great accessories like the Economizer and Ribbon, which make many parts of the game more convenient for the player. That's the meaning of width in a level-up system.

Final Fantasy VI is both tall and wide in its level-up systems. The height gives the game structure because in order to take on certain tasks (especially the last few dungeons), the player needs to acquire power over a long period. The width of the level-up system gives the player freedom because of all of the potential ways in which the characters can become more powerful. Freedom and structure are not mutually exclusive; *FFVI* balances them to create an open-ended second half that still feels climactic in the end. I'd like to point out one last idea that the *FFVI* designers included to make their level progression seem wider. It's an obvious feature, but one that probably doesn't register as being a kind of level-up, at first. On the next page is a picture of the airship before and after retrieval of all the characters.

BEFORE



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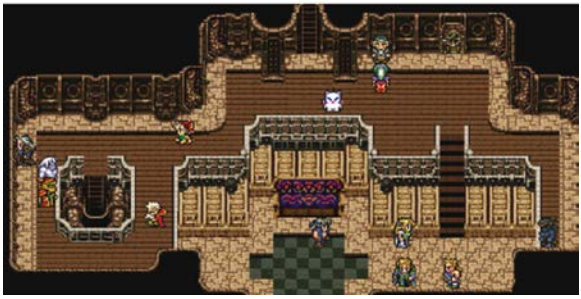

Because the player has to use 12 characters for the final dungeon, every character acquired in the second half of the game acts as another reclaimed set of levels—especially considering that the reclaimed character comes back with the party's current average character level. Thus, every character that enters the party increases the ability of the player to make it through the final dungeon by a significant amount. This is a kind of meta-level-up, but it does help to structure the second half of the game in a way that's meaningful beyond mere plot.

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Characters and the Music That Explains Them

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The Short Version: This section assesses the center around which the game was created: characters. Each character has a job class, all of which are discussed. These classes, however, are often defined by superficial or irrelevant characteristics because of the diminution of character classes. This is explained for each character, below. Additionally, a synopsis of the personal motivations, thematic concerns, and role-as-actor in the plot is provided. These character elements constitute a large measure of the plot, especially as it unfolds in the second half of the game. The character themes of composer Uematsu, are also closely examined (with links to audio) for each personage. These musical themes are often wrought with incredible skill and great subtlety, and so embellish and elucidate themes relevant to the character's place in the game as a whole.

Having established that they wanted to make a game that was centered on a large playable roster, the *FFVI* team was faced with a problem. How can a design team do all those characters justice without blowing up the scope of the game? To give each character a reasonable amount of time in the spotlight, the structure of the World of Ruin became fairly non-linear. There are obviously a few events in the beginning that have to happen in sequence, but after acquiring a new airship,

there is no mandated order. As many television shows remind us, if you don't have a strong plot, you can get away with it by having strong characters.

The *FFVI* team wasn't just writing a drama, however, they were making a game. Their two biggest concerns were: "How do we make everyone useful?" and "How do we make everyone interesting?" They couldn't, of course, but by making some fairly revolutionary design decisions, they came very close. The biggest decision was to diminish the differences between character classes. Cyan is a heavily armored melee fighter, and Strago a frail, gimmicky magic user, but with their best items, they have almost the same defense. Terra and Celes are magic users, but they also can equip heavy armor and all of the game's most powerful weapons. The point of this was to make it so that players didn't have to change their strategies markedly when the plot moves characters in and out of the party, as it often does. Play can continue more or less as normal. Of course the other decision has already been discussed—that the game is centered on characters rather than a linear plot, particularly in the second half. That being the case, there's a lot to deduce from each character's design choices.

With many of the character design summaries, I have included some discussion of the music by composer Nobuo Uematsu. I did this because music and its usage are part of the design. Less obvious is how Uematsu's score is able to brilliantly embellish themes and nuances intended in the game's script. Uematsu did this because he's a brilliant musician, but I also think he had more opportunity than his counterparts in TV or film. Television and film productions require the music to be written after the final cut is made, at which point the composer must hurriedly write music that matches the on-screen action. Videogames require some of that kind of music for cinema scenes too, but most of the music in a game is not like that. Most game music is a background track that has to play for an unspecified amount of time because there's no telling how long a player will be in an area. All videogames also go through a rigorous period of playtesting that lasts for months. Thus, game composers have a lot more time to think about the meaning of the scenario they're writing for. Character music is particularly in this regard, which I hope to illuminate below.

Terra

Terra is statistically a mage. Her weapon and armor selection, however, defeats this; she's able to equip heavy armor and most of the best weapons. Her biggest advantage—perhaps the biggest advantage in the game—is her ability to use the Morph command, which effectively doubles her damage output for several turns. Inasmuch as she's a powerhouse in Esper form, she's the character the player should want with him or her in tough fights. I'd argue that the Morph command is the only overpowered ability in the game.

Although Terra is often considered the main character, she doesn't speak nearly the most words, ranking fifth behind Kefka. She does, however, speak the second-most words in the World of Ruin, right behind Celes. Certainly, she becomes a

much more rounded character than the stock magical waif she is in the beginning. Inasmuch as she embodies the themes of hope and resolve in spite of disaster and loss, she does so in the second half. Terra's musical theme is a variation on the main theme of the game (also called Terra), also in the same key, A minor.

Locke

The chatty thief, Locke's weapon selection saves him from being a poor choice for the main party. The advantages you might expect from a thief—stealing items, high evasion, fast battle speed—aren't terribly good in the context of *FFVI*. That's probably just part of the diminution of character classes, however. The Steal ability is only useful if you're using it all the time. Outside of the final dungeon, there aren't too many enemies who are in any way marked for theft. In other words, it's fairly random which enemies have good loot. It comes down to the neophyte player stealing early and often, and finding out that it can result in good gear.

Locke's constant (and often over-wrought) chatter annoyed me, although I recognize that he enjoys general goodwill from the fandom. He's far and away the most talkative character, especially in the first half of the game. More than a decade later, though, I realize that this is an intentional effect. For all of Locke's bravado and bluster, when he finally revives his deceased girlfriend, he's completely unable to speak a word to her. Brought to life by an Esper, she lives long enough to tell him she loves him and forgive him for not saving her, and then dies. Stunned, he says only her name three times. Ask yourself, if your love had 60 seconds to live, would you be eloquent? All during this scene, composer Nobuo Uematsu plays one of his best tracks, "Forever Rachel," which reprises Locke's theme, but changes it from G major to G minor. To this day I'm still amazed how uncanny (and moving) it is to hear this back-to-back with Locke's theme.

Edgar and Sabin

Edgar the engineer and Sabin the monk are very popular among new players of *FFVI* for an obvious reason: they have MP-free attacks that can hit all enemies on screen or hit one enemy with damage that ignores armor. I wouldn't describe them as the best characters in the game, especially in the World of Ruin. Then again, part of the thesis of this section is that the character classes don't matter that much, and I maintain that opinion. Edgar and Sabin are easy to use, but they're not significantly stronger than their counterparts anywhere else.

The creations of eventual Xenogears co-creator Kaori Tanaka, the twin brothers Figaro share a musical theme. It's another shining example of Uematsu's cleverness. There's a big rallantando at the end of the first section (0:22) that sounds like it's about to lead us into a B section—but no! Instead, the whole thing repeats again, once for each brother. (When it does transition to the B section, there's no rallantando. Uematsu, you sly dog!) If the player has already viewed their flashback in the first half of the game, neither Edgar nor Sabin speaks many

words in the second half. This might simply be a product of both brothers being fairly well-adjusted; they don't have far to go in their development as characters.

Celes

Much of Celes's character is implied in what she doesn't say. In battle, she's virtually identical to Terra, being a heavily armored mage, although her special ability quickly becomes useless due to a huge design flaw. "Runic" causes the next magic spell or lore to be nullified. Unfortunately, it's almost always the player casting those spells, not the enemy, so Celes will frequently absorb that Cure 3 you really needed for someone else. Still, her weapon selection is great and she makes a terrific fighting healer.

Celes suffers from a lack of characterization in the first half. This turns around a little bit in the second half, when she speaks the most words of anyone. I wouldn't call her a brilliant, rounded character, but one of the cleverest scenes in the game involves Celes: the opera. Ignoring the contrived coincidence that Celes resembles a famous singer—and that she can actually sing—take a look at the symbolism. The plot of the opera involves a woman, Maria, who is torn between two warring factions. She's officially a subject of a distant ruler, but her heart belongs to a rebel. Does this sound familiar? The opera (which, if you've heard the orchestrated version, is lovely) foreshadows Celes' departure from the party and return to the Empire, but will also clue observant players in to her conflicted feelings and ambiguous allegiance.

The opera also gives us the only real insight we have into her character in the first half: she's acting. Celes lacks characterization because she lacks character; she's lived for the purpose of being a super-soldier all her life. I personally love how Uematsu highlights this with the score. Her scene in the opera is in D major, and her personal theme (which we hear for the first time after the opera) is one half-step higher in E flat, not even a full degree removed. I attribute the decision to start with Celes in the World of Ruin to her lack of characterization. Because the Empire—the only identity she had—is gone, she's free to be whatever character they need her to be. Raised in the military all her life, she awakens on an island with her first father figure, "Granddad" Cid, and is born anew.

Shadow

Of course, there had to be a ninja in a game with a big roster, and there is. His Throw ability is nice, although occasionally a pain to supply. Shadow's real advantage, however, is that he has a 50% chance to evade all physical attacks and to counter with an attack from his dog. He's a great fighter, handles magic decently, and has an array of weapons unique to himself. I find Shadow to be the second easiest character (behind Terra) to use at a high level in the World of Ruin. His natural evade, unique weapons, and throw damage all mature very nicely as he levels up. Of the characters who actually speak something meaningful, Shadow says more

words than only Gau and Mog. His laconic tendencies are played relatively well, and so he appears deliberately silent rather than overlooked by the writers. Kudos to the design team for not over-selling the fact that he's Relm's father. I think the game would have suffered if he'd had a tear-filled admission.

Cyan

Cyan, Samurai by class, is a solid melee fighter who suffers from weapon mismanagement. For one thing, his Sword Tech ability frequently ignores his weapon—especially the lower-tier abilities. For another, his "final" weapon drops just before the final battle. Because he's so reliant on personal stats, it's hard to make him terribly strong before the acquisition of vigor-upgrading Espers, and the Hyper Wrist accessory isn't easily available until roughly the same point in the game. Still, Cyan's most basic ability ignores enemy armor and so he will be a valuable asset in normal battles. Toward the end of the game, he is outclassed (as are many characters) by the super weapons that Celes, Terra, Edgar, and Locke can use, but the fact that his ability is free of cost and easy to use means that he'll often be in the primary party.

Cyan shows up relatively early in the story, and we hear a lot from him in the initial adventure that he and Sabin go through. After that point, however, his dialogue drops off quite a bit. He's not terribly talkative, and yet I feel that he is perhaps the most developed character in the game. Cyan, although not exactly taciturn, speaks with his actions as much as he does his words. When the player encounters him in the World of Ruin, he doesn't provide a long explanation about his contact with Lola. Still, it's perfectly clear what he was doing any why he was doing it. Cyan also benefits from a secondary quest. That is to say, he has a quest and dungeon dedicated to his story which can only be completed *after* doing a first dungeon to acquire him. During this secondary quest, we learn much more about Cyan, but it's not because he tells us. His deceased family appear inside his soul and inform us of his guilt, anguish, and struggle to live in a world without an order to uphold.

In my opinion, Cyan's theme is the cleverest piece of music in the whole game. It starts as a kind of martial dance, a percussive cluster of compact notes (G, Bb, C) that repeats over and over: disciplined, guarded, and unchanging. You can almost hear the whoosh of the blade in the melody of the flute that plays over it. Then, at 0:28, there are two phrases of parallel fourths—a chromatic harmony the ear can't miss—that sound like the wailing of the people of Doma. Then the track breaks into a transcendent mode at 0:41 and transforms from a guarded dance into a vulnerable song. The tight, percussive cluster of the dance rhythm literally opens up into a fluttering arpeggio on the EbMaj7 chord. The timpani, too, begins to move across the scale, changing with the chords. Alternating with the sleigh bells, the percussion falls into an alternating rhythm that sounds like feet staggering under a load, irregular, weary, and unsure. It's a beautiful and moving summation of Cyan's internal struggle with his guilt, honor, and loneliness.

Setzer

Setzer is a middle-of-the-road character who became somewhat legendary because of a reliable exploit that can win almost every battle in the game in one turn. Without a lot of practice or exploitation, his Slot skill is occasionally useful. With practice, the skill is a boon for speedrunners. His stats are only mediocre, but he wears good armor. He arrives fairly late to the game, after the other, more useful characters have started learning magic. Accordingly, he doesn't get a lot of play from people who aren't using the game-breaking exploit on Slot.

Setzer speaks relatively little, and his only real story moment comes when he flashes back to his girlfriend upon retrieval of the second airship. As with Locke, the music in this scene is an arrangement that borrows heavily from Setzer's personal theme. Rather than being sad, "Epitaph" is a charmingly nostalgic piece that, much like the feeling of nostalgia, doesn't resolve. Uematsu builds sequences of bittersweet minor 7 and major 7 chords, leading up to the long, slowly resolving suspension at 0:57—although even this only resolves into a tonic chord upon the return to the head. Considering how much personality this squeezes out of a relatively minor character, it's a shame this track only plays once.

Gau

The wild child of the game, Gau's special ability is actually very innovative—it's just so unreliable that it's hard to use, especially if for new players. (Naturally, 20+ years of play have yielded amazing Gau builds.) Gau can be programmed at the start of battle to use the abilities and follow the (modified) behavior of a past enemy. The drawback is that the player cannot control which attacks Gau will use and when, so if he or she is trying a precise strategy (like vanish/doom), Gau can be a hindrance. The other problem is that while many characters can be made useful simply by sticking good equipment on them, Gau really needs special attention and training on the Veldt, where he can learn new monster behaviors.

Gau is certainly a peripheral character in the story, but that doesn't mean what little we see of him is handled badly. He has essentially two scenes in the entire game. In his first scene, he meets Cyan and—despite having lived his entire life as a feral creature—immediately and very genuinely sympathizes with the loss of Cyan's family. His second scene is actually kind of heartbreaking: the party attempts to introduce Gau to his father, who turns out to be insane. Although he gains no familial recognition, Gau admits that he is happy to receive even the slightest bit of off-hand praise from the man.

Gau's musical theme is another instance of Uematsu drawing out subtexts that the script barely has a chance to develop. The cello starts in a low voice that, while melancholy, seems more like it is about an animal with the "hiccup" 3/4 measure that subverts the phrasing pattern at 0:08. What's amazing about the theme is that all Uematsu has to do is restate it with higher wind instruments and full accompaniment at 0:48, and the piece immediately sounds like a human choking

down an anguished cry and showing a brave face, with the unexpected major chord that sticks out like a sore thumb from the established chord progression. It matches the scene in which it plays perfectly, and can be quite moving for anyone willing to be moved.

Mog

One telling thing about *FFVI* is that even the throw-in characters are worthy fighters. Mog says very little, other than that he wants to join your party. (The game frequently uses him as the Greek chorus for selection screens and instructions, however.) Mog is actually a very well-rounded fighter. His special ability "Dance" is hit-or-miss depending on which of the dances the player chooses to use. Considering his stats, however, there's no reason to use him as anything except another armored mage: he gets a solid weapon and the single-best piece of armor in the game.

Strago

Strago is the Blue Mage, and as with most *Final Fantasy* titles, his abilities can be great if the player can manage to find and learn them. In that sense, Strago is a little like Gau, needing special attention to become the full version of himself. His starting blue magic isn't incredible, so players who don't spend a little bit of time finding new spells might overlook him. His early-game equipment selection is also not great. His weapons are extremely limited and generally ineffective, so he's often limited to MP-consumption attacks until the very end of the game when his weapon becomes irrelevant.

Strago speaks a lot for someone who shows up in the game so late. Part of this is that he has to provide a lot of necessary exposition about the War of the Magi, the Warring Triad, and what will happen when Kefka destroys the world. The other thing going for Strago's character development is that he and Cyan are the only two characters to get a secondary quest. For Strago, the Ebot's Rock quest exists because the quest to acquire him is so short. Another reason is that he and Cyan are the oldest characters in the game. It's easy to portray them as having hidden depths, backstories that require further development. It's not quite so easy with a typical teenage hero.

Relm

Relm, like Strago, suffers from late-arrival syndrome. By the time the player acquires them, many of the earlier characters will have learned a variety of useful magic that would make them ideal for the "main" party. Relm has the highest natural magic stat in the game, and this can be really useful once she learns magic, but because she's such a late addition, she's not going to learn much magic until the World of Ruin or maybe even the final dungeon. She equips almost all the

same gear as Strago, which isn't a positive thing for most of the game. To be fair to them, both can equip the Behemoth Suit fairly early, which is about as good as the Genji Armor—more evidence of the effective diminution of character classes. Their weapon selection makes the fight command useless except in the case of a few elemental weapons which can target specific monster weaknesses.

As a character, Relm doesn't receive too much development; she's too young to feature prominently, although her juvenile petulance is occasionally cute and amusing. (This is a judgment that, I admit, I could not possibly have made when I played the game more than 20 years ago.)

Gogo and Umaro

A pair of optional characters, both of them make a substantial addition to the player's fighting force. Umaro is extremely durable and will deal great damage almost all the time, although he cannot be controlled. Gogo can use any ability in the game, although his stats are somewhat meager and he can't use Espers to increase them. Still, with decent equipment Gogo is a great utility character who can do virtually anything.

Kefka

I have said earlier that Kefka is constructed as a character to suit a number of needs in the game. With a huge roster of characters and a non-linear second half, Kefka focuses the narrative, by drawing all character motivations toward himself. He is an amazing contradiction: he provides order by embodying chaos. How can a character do this believably? Kefka manages it by being equal parts psychopath and trickster. Of course, I'm not talking about the *Law & Order* psychopath; I'm talking about the literal, medical kind of psychopath. Psychopathy is characterized by vanity, impulsiveness, destructive behavior, lack of empathy, and an inability to self-motivate and carry through with plans. That sounds an awful lot like Kefka to me. He gets furious about sand on his boots. For kicks, he poisons the people of Doma. On a whim, he betrays the Emperor and destroys the world. Yet, even after he becomes a demigod, he seems completely unable to follow through with the destruction of the world. He torches one town of no tactical or political significance (Mobliz), and only partially destroys another (Tzen) when he happens to spot Celes there. He's impulsive, and perhaps very talented, but, ultimately, without Gestahl to guide him, he's ineffective.

Kefka is also a trickster, an embodiment of natural disorder and predation. He can conjure illusions, as in his murder of Leo. He always seems to arrive with his shrieking laugh at the wrong moment, as in the Magitek Factory. When he is caught without his illusionary apparatus and a cadre of soldeirs, as in the Imperial Camp, he has no desire to fight. He's not a demigod of strength, he's a demigod of deceit, chaos, and perversion—even if he ends up as an inordinately strong one.

Kefka's theme song reflects all of this. It's in Bb minor, which is instantly recognizable as only one other theme in the game is in the same key signature. The other theme with the same key signature (none were in C# major) was the Bb minor "Catastrophe," which is an obvious thematic connection. It's no stretch to call Kefka the embodiment of a catastrophe. More thematic nuance: "Catastrophe" is the first track to play when starting a new game, and Kefka is the only character to appear on screen during its play. Uematsu was very deliberate about setting these two themes apart: there is a not-quite-direct (but very close) quote from Chopin's Sonata in Bb Minor—often used as a funeral march—in the beginning of "Phantom Train." (Have a listen, the line slips in at 0:22, it's unmistakable.) But that quote is instead transposed to the opposite (tritone) key of E minor, as if to say, "No, Bb minor is reserved."

Kefka's theme is also structured so that it becomes more menacing with each passing phrase. From 0:01 to 0:12, it's a simple melody sounding of mischief, but at 0:19 and 0:34, new layers are added that push the same melody from mischief into mania. This is exactly the pattern that Kefka follows as a character; at first he seems like a cartoonish, ineffectual villain, but as the story progresses it becomes clear that he's actually a very dangerous lunatic.

A Few Loose Ends on Music

"The Empire," "The Troops March On," and "Under Martial Law," are all based around the same bit of melody, which is appropriate considering what they're about. Interestingly, "The Empire" shares the same opening chord and its exact instrumentation with "Catastrophe," even though the latter is in an unrelated key. One supposes it's a thematic connection that highlights Gestahl's nurturing of a psychopath and the resulting disaster.

Uematsu took good care not to repeat songs in the same key too often, by using major, minor, modal scales, and more than a few confusing chromatic harmonies too. One noteworthy exception: both main world map themes, "Terra" and "Searching for Friends," are in A minor. Another, probably less intentional case, is that G minor repeats a few times. Having listened to a number of other Final Fantasy soundtracks, I'm beginning to believe it might be Uematsu's favorite key for non-battle music—although I could be persuaded that I just like the pieces he writes in it.

> *Trivia!* In the first half of the game, one character is optional. In the second half of the game, 11 characters are optional. Good luck beating Kefka with just Edgar, Celes, and Setzer, though. There are 61 tracks on the OST. I'm pretty sure that the first motif from "The Day After" is a minor-key version of "Kids Run through the City" played at a faster speed, but that gets into subjective territory. The main theme "Terra" is quoted as a leitmotif in "Awakening," "Protect the Esper," "Metamorphosis," (where it experiences metamorphosis as a series of diminished chords) and, of course, the ending—in which nearly every theme is quoted.

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4

The Sociology of the NPC World

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The Short Version: This chapter is a kind of sociology of the videogame world, focusing on the role of NPCs. NPC speech tends to fit into two categories: ironic communication and narrative communication. Ironic communications are veiled instructions for the game, written so as to not break the narrative spell. (I.e., "I hear that dinosaurs hate lightning!") Narrative communications are additions to the script, which embellish the events, characters, places and things in the virtual world. ("You grew up in this village.") This section divides NPCs by function, across the two categories above and several different sub-categories. Additionally, *FFVI's* NPC content is compared statistically with two other games: *Majora's Mask* and *Tales of Symphonia*.

One of the most important ways that a designer (rather than just a writer) communicates with the player is through non-player characters (NPCs). One of the nice things about studying the design of *FFVI* is that although NPCs have become more robust technologically since 1994, their purpose has hardly changed at all. NPCs still exist to do the same things they've always done in RPGs. The question is, then, what purpose do NPCs serve in the game? In short, NPCs are there to provide information about the game. There are many different kinds of information that NPCs need to provide, from gameplay tips to story embellishments, and everything in between. As I see it, these tips break down into

two essential categories: ironic communication and narrative communication. Ironic communication, or as I call it, NPC irony, is based on the need for the creators to tell the player a lot of information about the game and how to play it. They can't simply break the narrative spell they've cast by having every NPC be an instruction manual. Accordingly, it is important for designers to learn how to mask their gameplay instructions with narrative pretext.

For example, if the player enters a town and the NPCs there say things like, "Ghosts don't really exist!" and "I don't really believe in them, but I hear ghosts are afraid of fire," what should the player immediately assume? It should be clear that the player is going to be fighting ghosts in the very near future, and that he or she should bring fire-elemental attacks. The NPCs didn't literally say that, but the designer has communicated that fact, clearly. At its most basic level, irony is saying one thing and meaning something else—although not necessarily the opposite of what is said. There are fine shades. Nevertheless, NPCs in videogames often speak ironically, by conveying information that they're not literally saying.

There are a lot of fine distinctions between different kinds of ironic and narrative information that NPCs need to convey. The way we classify them depends on what the designers are trying to communicate to the player. The information the designers give or imply determines the category. As I see it, NPC communication breaks down into five categories under the umbrella of ironic and narrative types.

Ironic Communication

Direction

Directions are the most obvious form of communication from the designer and are given through NPCs. Directions are, naturally, direct instructions about an action that the player ought to take. While they don't necessarily need to be ironic, they can be. A man in Narshe instructs the player to take his treasures (in the house to the right) before someone less reputable tries to use them. That's a pretty

straightforward direction, yet it still falls under the category of NPC irony because it is instructions from the designer passing as instructions coming as instructions from a character. Similarly, if the player is outside a dungeon and an NPC says, "This is the haunted temple, don't go in—it's dangerous!" the designer is basically telling him or her: "This is a dungeon, make sure you're ready before going in." It's a little more obviously ironic this time, in that what the character says clearly the opposite of what the designer is trying to communicate with the player. The ironic veil is usually thin in a direction, but it's fairly essential, as it would be too easy for everything in the game to become a bland instruction manual.

A good example of NPC irony and directions exists in Kohlingen in the first half of the game. An NPC asks, "You a friend of Locke's? He always stops by Rachel's house when he comes here!" This is essentially a direction: if the player brings Locke to this location, something interesting will happen. In this case, it's a flashback. The communication is ironic because the characters have no use for this information—they gain nothing by allowing Locke to have a flashback—but the player stands to gain something by seeing a little bit more character development. A slightly less ironic example is in Thamasa where one of the NPCs informs you that Strago is trained as a Blue Mage and can learn monster attacks. The characters don't need to know this; Strago can handle his own profession just fine without them. The player needs to know it, however, in order to build up his roster of skills. Direction is always an important part of NPC chatter, although it does become less frequent in the World of Ruin where it is often replaced by allusion.

Allusion

Allusions are ironic instructions like the previous category, but they have one special requirement: they must leave out one essential portion of the necessary information. In that sense, allusions are a kind of puzzle that the player needs to figure out by investigating. For instance, one NPC remarks a quest that will take place at Doma Castle.

Demons at Doma Castle? Sounds like fun! He tells the player what he or she will face (demons), where it happens (Doma Castle), and how it happens (sleeping there), but not who must be present in order for it to happen. Cyan must be in the party for the quest to start. This fact needs to be intuited by the player, but it's not an enormous leap to make, considering that Doma is Cyan's home. That information gap, however, is the defining aspect of an NPC allusion and is what separates it from a direction. Ironic directions may tell the player how to do something obliquely, but they tend to include the information necessary for getting started. Allusions make the act of deciphering the quest part of the quest itself.

Allusive information is worthwhile specifically because it's opaque gameplay data. It should come as no surprise that gamers like to figure things out for themselves, and allusive communications allow this. NPC allusions are like puzzles in that the player has to figure out what the game designer is trying to tell them. For instance, the last imperial trooper at the colosseum tells the player "Talk to the emperor twice." By the time he says this, the Emperor is clearly dead. This allusion is actually referring to Emperor Gestahl's portrait in Owzer's house, which can be examined by using the "talk" button. (There's an NPC in Jidoor who proclaims, "I saw the emperor recently! Well, a painting of him.") Examining it twice reveals yet another allusion: a letter telling you that a treasure is hidden "where the mountains form a star." There's no obvious instruction, although finding the mountains in question is relatively easy. This is a two-step allusion that points to a major dungeon with a recoverable character, and important Esper, and lots of treasure inside it.

I have observed a fairly widespread rule for making NPC allusions more effective and noticeable. The rule is that the number of NPCs in a single town/area who provide allusions on the same topic is inversely proportional to the proximity in space and time of the alluded object. Or, in other words, if a bunch of people are talking about the same vague thing in a town, the player can expect that thing to be available soon, possibly right away—although, he or she might have to go a little bit out of their way to get it. The most shining example of this is the path to acquiring the optional character, Mog.

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On the other hand, there are many things that are much rarer. The Atma weapon, for instance, is mentioned only once. The clue is that it's mentioned in a town close to a large dungeon that is only open once and then is lost forever. The player is probably not going to get the weapon on his or her first playthrough, except by being extremely diligent. There are, however, many things that are mentioned once in the World of Ruin that, while puzzling, are available forever. Since the player can do them in any order, however, there's never a cluster of allusions like in the World of Balance. Rather, these allusions are scattered in various towns and the player has to talk to everyone to find out about them. I think this is actually one of the points where *FFVI* shines: the player absolutely does not need a strategy guide to accomplish everything in the game. There is an NPC somewhere who will give him or her the hint needed to find all the secrets in the game.

Condition

Conditions are NPC statements about the interactivity of a gameplay element. A simple, unironic condition would be something like, "This store is only open at night." That is, the condition of the shop is that it only becomes interactive when it's night time. Conditions have a large range and can often be highly ironic. A man blocking the only exit of a room, saying, "Can I help you?" is actually a condition, just a highly ironic one. The designer is essentially saying "this room cannot be exited until some condition in the game environment changes, but you'll have to look elsewhere to find out what." There are a few finer criteria for condition as well.

- Conditions do not indicate any possibility for direct player action to change the condition, or else it's an allusion or direction.
- Satisfaction of the condition is often undisclosed: the game tells the player to "go do something else, and come back when the condition is changed, as a consequence of your actions elsewhere."

- Often, a condition is a signal for a player to simply wait. Sometimes that means the player doesn't even recognize a condition when they encounter it, and only benefits from the condition when they remember the statement much later, and go back to check on the interactive status of the object in question.

Conditional information is often opaque because it's frequently about things that the player cannot do when he or she encounters it. If the player goes to the town of Thamasa too early, for example, nobody will sell any goods. The shopkeepers say, "I've never seen you before," and someone in the town explains that the innkeeper doesn't like strangers. Do they really hate strangers so much that they won't even take the stranger's money?

The game is not trying to say that these xenophobic merchants hate the player and his gold, nor is it telling him that he needs to do a quest here. Instead, it's explaining that even though the player can go to Thamasa in the airship, he or she cannot access Thamasa's resources until the plot introduces it properly. Similarly, when everyone in Jidoor remarks how hard it is to get to the Imperial continent and how there's no easy way to get there, they're actually telling the player that he or she needs a plot event to make that journey accessible.

Narrative NPC Chatter

Reactions

Reactions are a class of narrative NPC dialogue that emphasize the player's agency and participation in the world of the game. They fall into two sub-categories categories: attributive and situational. An attributive reaction happens when an NPC speaks directly to a player character about deeds the player has done.

A situational reaction happens when an NPC comments about the results of the player's action, without directly crediting the player's party members for the change. As we'll see, that distinction is important in *FFVI*.

Situational Reactions

Situational reactions consist of NPC dialogue that reflects some change in the game-world that the player was involved with, but which don't directly give credit (or blame) to the player for that change. The big event that happens in *FFVI* is the catastrophic end of the world. The player's party was directly involved in that event, but as far as the NPCs are concerned, it was Kefka's fault. Nobody blames the party members. Another very important criterion for situational reactions that the "situation" in question must be ongoing or have long-lasting impact. "I lost my family in the war," is not a reaction, because it is about something that happened in the past, and while it's a nice narrative touch, it's not something the player characters have to live with, usually. NPCs remarking an event with a limited scope that doesn't continue are speaking under the "elaboration - event" category, which we'll look at in the next section. The line between these two types of dialogues is not always crystal clear, but usually NPCs should fall into one category more than the other.

Situational reaction is hugely important in *FFVI*. Many people react situationally to Kefka's destruction of the world—in fact it's the dominant form of narrative chatter in the World of Ruin. Many of those NPCs, however, react positively, mocking Kefka and avowing hope in spite of the ongoing ruin of the world, which fits right in with the central theme of the game.

Reaction: Attributive

An attributive reaction occurs when an NPC reacts to the player's agency directly by applauding, condemning, or questioning the player's party members. The purpose of an attributive reaction is to reinforce the player's sense of his or her own agency in the world. The best example I can think of is in Oblivion when people remark, "Hey, you're the champion of the arena!" or "You're the Gray Fox!" Simpler versions might just be an NPC involved in a quest saying, "Thanks!" You've done something in-game and they react to it. Fame and infamy are both important factors in attributive reactions, and can be used to procedurally queue reactions to your list of accomplishments. In *FFVI*, these reactions are few and are heavily concentrated in two areas: Mobliz and the Imperial Castle. In ruined Mobliz, all the children thank the player for helping Terra defend them. They've been through hell, they're not proud, and so it makes sense for them to do so. In the Imperial Castle, a number of soldiers react to the player's status as their opponent and attack or insult the party members, although many are sympathetic and regretful as well.

Part of the thematic emphasis of the game, however, is built into the relative lack of recognition for the heroes. (There are about three times more situational reactions in the World of Ruin than there are attributive reactions.) Considering how much situational reaction there is in the second half of the game, it's poignant that almost nobody speaks to the player's party members in an attributive way. In a sense, the players are supposed to experience (virtually) the same struggle that everyone else in the game is. In the World of Ruin, everyone is made equal by their shared hardship and they all press on.

Narrative NPC Chatter: Elaborations

Elaborations are additional narrative information, plot details, characterizations, background, history, and so forth, given through NPCs. In other words, elaborations are embellishments of the story as it is being told through the scripted sequences and cutscenes.

Elaboration: Event

Categorizing a bit of NPC dialogue as an elaboration about an event is tricky, as it is often confused with a situational reaction. Elaborations are merely additions to the scripted narrative, not reactions to the player's agency. Therefore, an event elaboration must be about an event in which the player played no role, and which the player does not endure. For example, everyone in the world if *FFVI* (including the player characters) endured and continues to endure the cataclysmic imbalance that Kefka created, so NPCs will not elaborate this event. Rather, they will react to this event to reinforce the image of a dynamic world that is changing as the player progresses through it. Generally, NPCs elaborate upon events that are over by the time players arrive, or about narrative events that are certain to come in the future. It makes sense that, early in a game, there will be a lot of event elaboration by NPCs. Much of the history of the game-world is told through NPCs. These events, having happened before the game, can't really be reactions. Thus, when NPCs mull them over, they're really just embellishing events that don't happen on-screen.

Elaboration: Person

Characterization is an enormously important thing, especially in a game with a large roster of playable characters. Accordingly, whenever an NPC provides extra background about one of the characters in the game, it's noteworthy. Generally, these elaborations are obvious and direct. Because of the large roster of characters, personal elaborations are frequent in the early portion of the game. The number diminishes significantly as the game goes on. Some of this owes to the fact that many characterizations are embedded in allusions in the world of ruin. For example, the people in Maranda make passing references to

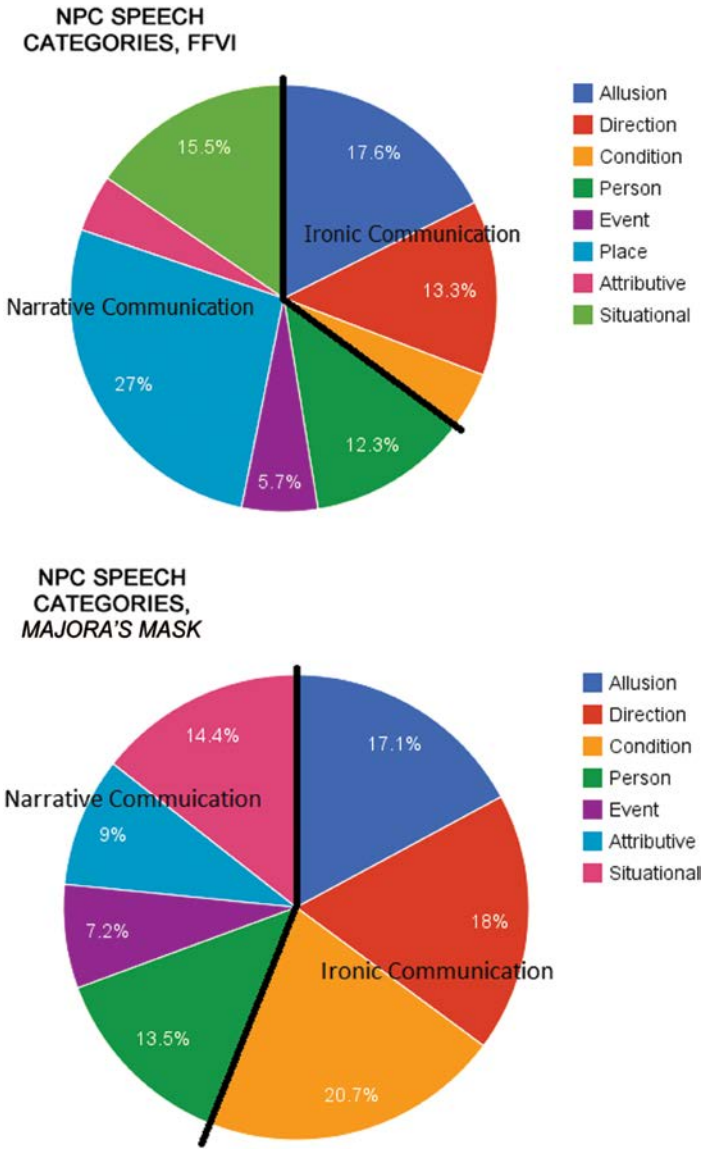
Cyan's recent appearance, at once characterizing him and hinting at where to find him.

Elaboration: Place

In a time when game graphics and memory were not enough to support sprawling, full-scale towns and cities, NPCs were a necessary part of giving a place a feel. More than just providing the character of citizens, NPCs were necessary for describing things in towns that were not possible with contemporary technology. Time and technology have marched on, and in the sprawling metropolises of modern games, NPCs are often used for giving directions more than they are for characterizing the place itself. In *FFVI*, place elaborations were frequent and necessary. Indeed, place elaborations are the most frequent kind of NPC chatter anywhere, although this is partially due to an imbalance on the Imperial continent. For its time, the game world of *FFVI* was massive, and it would have been impossible for it to be brought to life without considerable information about its contents, history, and geography delivered by an easy, efficient source.

A Survey of NPC Chatter Data

Looking at the game as a whole, it's clear that NPCs are going to provide more narrative expansion than ironically disguised information, although there's a significant amount of both. Colleague Dan Fischbach ran a similar analysis on *Majora's Mask* and found that that game differed markedly. It's interesting that of all the ironic chatter in *FFVI*, there are mostly directions and allusions, and not as much condition as I would have expected. I feel like I'm always being given conditional information by my RPGs. *Majora's mask* (see below) is just swimming in NPC irony. That makes sense, though, doesn't it? Everything in a *Zelda* game is a kind of puzzle, certainly more so than your average *Final Fantasy* (*FF*) title. There's hardly a room in a *Zelda* game, dungeon or town, where the players don't take a good, hard look around for hidden treasure. So of course there are more NPCs carrying hints, conditions, and directions. How would the game even be possible without them?

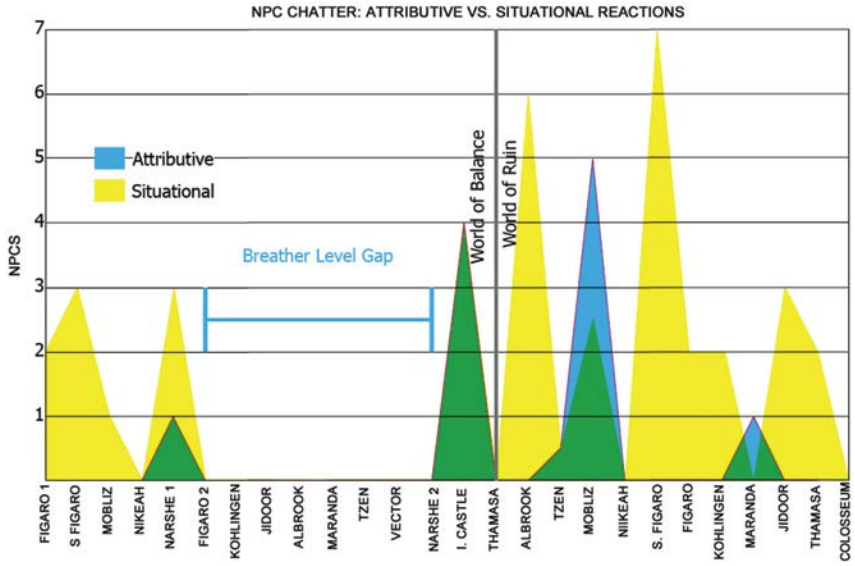


From a narrative point of view, another colleague looked at the early portion of Tales of Symphonia. Interestingly, the NPCs in the early part of the game are much more invested in event elaborations than at any point in *FFVI*. If you know ToS's plot, this makes sense, as it revolves around a quasi-religious quest initiated as a regular rite. ToS also doesn't have to introduce quite so many

people quite so quickly, and so as a function of their designs and plots, the two games differ.

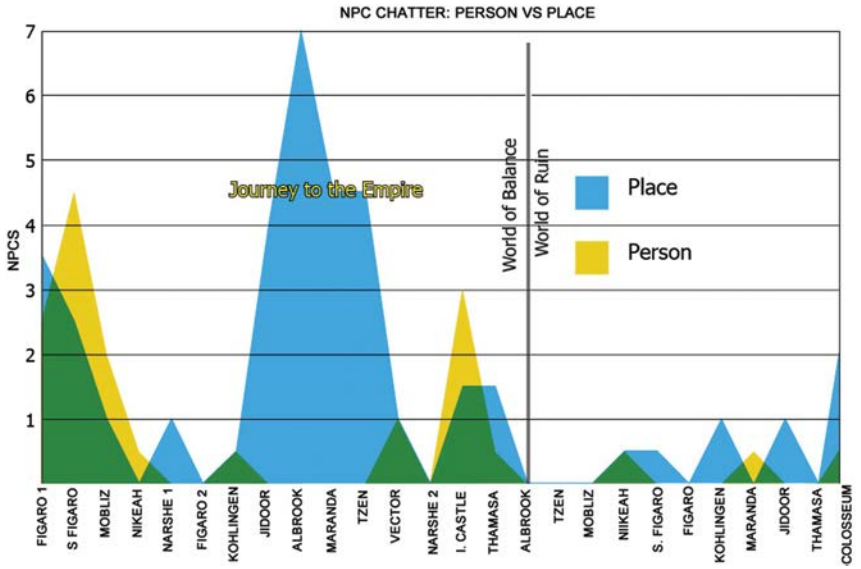
Trends Over Time

There's an interesting gap occurs during the quest to get Terra. This quest acts as a kind of narrative lacuna: not much happens plot-wise, the player doesn't have to do too much, and consequently there's nothing for the NPCs to react to.



Some of this is explained by the introduction of new towns, and with those towns, new expository elaborations and characterizations. In other words, the NPCs are too busy explaining new things that they can't react to the plot. This quest (as mentioned before) is also kind of a "breather level," which allows the players to process the plot as it has happened so far and be ready when the next chapter provides much more of it. You can also see, on the graph above, how the NPC chatter reflects the thematic concerns of the game. Situational reactions shoot up during the World of Ruin, but aside from one small cluster, attributive reactions do not.

What and whom the NPCs explain and react to over the course of the game is hugely important for understanding the thematic significance of the game. You can see this in the graph of person versus place elaborations.



It's not surprising that there's a lot of personal elaboration early on, and one might expect a steady level of place-related information the entire time as new locations open up. This is not the case at all. There's a huge spike of place-related information during the journey to the Imperial continent. This rise in NPC exposition is caused by the designers need to show the harsh condition of life inside Gestahl's empire. The people of the conquered cities remark their mistreatment at the hands of the Imperial Army. It's a great way to characterize a faction, a place, and antagonists who are about to become much more involved in the plot. The extra NPC chatter also comes from having a lot of extra NPCs; that section of the game has three optional towns to visit, each with its own unique gameplay rewards to match.

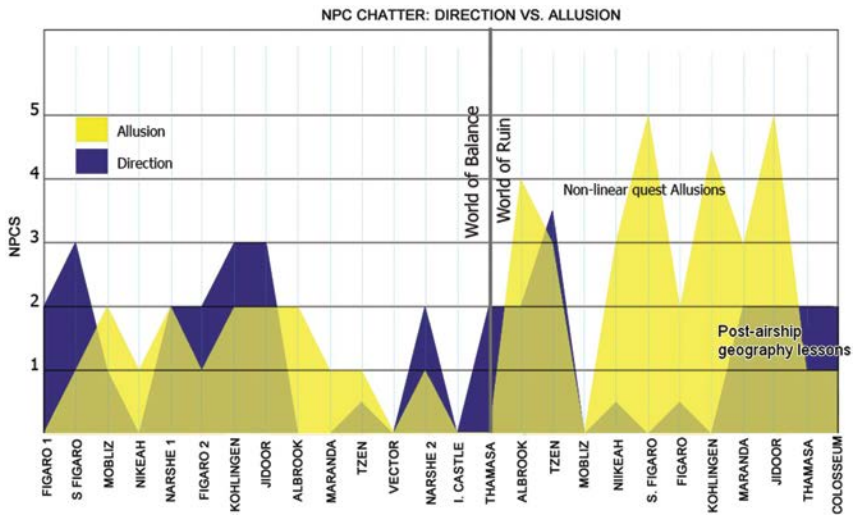
This spike in NPC narration actually comes full circle back to reactions during the Imperial Palace scene, which you can see on the reactions graph. (It's the densest narrative NPC location in the game.) Many critics of the game have wondered why it was that Gestahl, who was only lying to catch the player off guard, wanted the party to talk to his soldiers. It seems like a bizarre request, coming from Gestahl. The point of it, I think, was to use NPCs to deliver some thematically important information. Gestahl's army is not unanimously evil, his empire and citizens are not unanimously worthy of reproach. Among his ranks are many people who fight for their country because they believe they have to, because it was the only opportunity available to them. Many of those people feel quite badly about what they've done and what the war did to them. Many of them also harbor considerable hatred for Kefka.

How could this information have been communicated in a scripted scene? I don't think it could; I think that talking to the troops in the Imperial Castle is actually a masterful way of thematically setting up the second half where

there is no more Empire, no more war, and no more factions. Although there is another battle that the Empire will fight before it ceases to exist, it's clear that people on both sides of the war hate it. Everyone—including some of the aggressors—becomes victims of Gestahl's ambition. This is doubly tragic when you consider that directly after having their lives destroyed by war they participated in, many of these people (some of whom you'll meet again in the World of Ruin) have their world ruined even further by Kefka. Of course, this turns up in the many situational reactions that appear following the world's destruction.

Trends in Ironic Chatter

The World of Ruin has interesting trends ironic NPC chatter as well in the way allusions overtake directions, although there is still a good amount of directions. Considering the new geography it presents, how anyone would get started their first time through the World of Ruin without NPC directions is beyond me, and that's what most of the direction chatter is—map directions.



As for the rise in the number of allusions, and their near-ubiquity, this should come as no surprise. Part of the thrill of a non-linear world is feeling like you've put the puzzle together yourself. If the NPC in Thamasa simply said, "There's a bonus character inside the monster on the triangle island," it wouldn't be nearly so fun as when figuring it out. That intuitive leap is quite a rush. I realize that in the age of wikis and YouTube walkthroughs, most game mysteries are dead, but I don't think technology is entirely to blame for this. When was the last time you played a game where NPCs clued you in to everything you ought to be doing by use of allusions? Maybe if they were doing it more often, we wouldn't all be FAQ junkies.

The conclusion I want to make about NPC irony is that designers have a dynamic, in-game manual at their disposal at all times. The nature of NPC chatter can and should reflect the thematic climate of a game. It's nice to populate a world with vibrantly different characters, but if those characters don't respond to the world's changes as brought on (directly or indirectly) by the player, they're going to feel like mannequins. If those NPCs don't elaborate upon the people, places and things brought up in the plot, the player will feel a disconnect between story and gameplay. And if there aren't some marketplace rumors to tell players where to find a dungeon or some nice loot, they're going to spoil half the game by reading a FAQ. Embrace the use of NPCs for ironic and narrative purposes; it can only do your game some good.

Trivia! You think that NPCs are recolored often? Well, they are. There are more than 120 different NPCs, but only 56 sprites between them, although a few are only used once. If you think NPCs have it bad, check out monsters! There are about 105 monsters that get recolored, but there are almost 300 instances of recoloring. Some monsters get recolored five times!

5

Levels, Stats, and Gear

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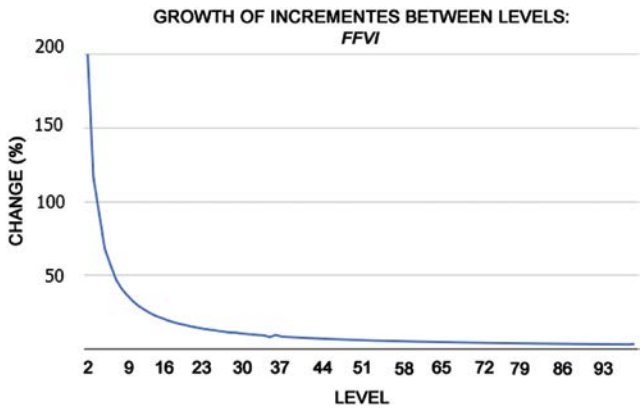
Weapons Free: A Look at LEQ 48

The Short Version: This section examines the level-up system, stat-points, and gear of *Final Fantasy VI*. It is observed that *FFVI's* level and experience system are fairly standard, relative to other single-player RPGs. The growth of EXP intervals between levels is inversely proportional to the growth of player character levels. This, it is stated, is to move the player through the first half of the game quickly, without providing a good place to grind and abuse the ratio of reward/time. An examination of stat points reveals that, because of the diminution of character classes, there is only one truly meaningful native character stat: magic power. Every other meaningful stat contribution is contributed by gear; this gear is analyzed in detail.

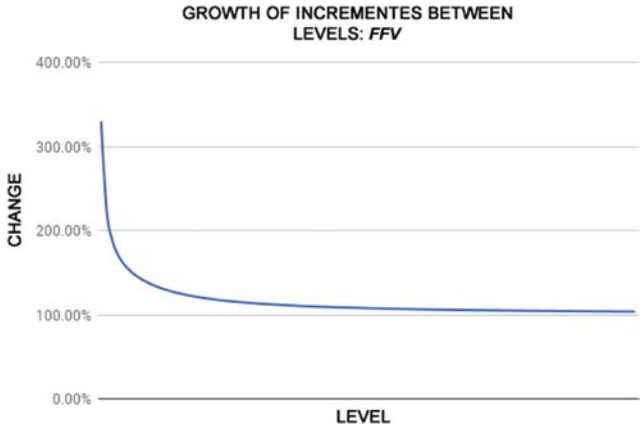
How does the structure of the level-up system affect the player's experience of the game? We've already gone over the psychological aspects of wide and tall level-up systems, but this section gets down into the nuts-and-bolts operation of levels and stats. To do that, I have created several metrics in this section for measuring the performance of stats, weapons, and levels. First, however, I should introduce two stats I use to measure different trends in design. The first stat is actually very simple: RAW. This is simply the amount of raw damage done by a character or enemy, ignoring all other variables. It is useful for measuring the effect of different factors upon a character's abilities. To figure in enemy defense

and damage reduction, I use a different stat called DAE, or damage against the average enemy. This stat shows how effective a character's abilities are against a typical defense, which will suggest how significant various changes in RAW are against aggregate enemy defenses. (These stats are similar, but we'll see below that they have slightly different purposes.) Because of the standardization of stats in *FFVI*, there are a huge number of enemies within 20% of the average defense, so this is actually very practical data. I should also note that almost every attack in the game is subject to random variance. The scope of the random variance isn't terribly large; it might matter to an individual player, but it doesn't matter to overall design trends. I elected, at all times, to show graphs at the highest possible output yielded by random variance for simplicity's sake. Some of my numbers might seem a bit higher than average to anyone looking closely enough, but all the trends, slopes, percentages, fractions, etc are all accurate. Thus, we should always be able to see the design trends clearly, which is what we're after anyway.

Now, onto the analysis itself. It all begins with a graph:[4]



This is the growth rate of the interval between level-ups in *Final Fantasy VI*. Some brief slices of explanatory data: to go from character level 29 to 30, a character has to gain 8200 EXP, up by about 10.1% from the last level increment, 7688 EXP. The growth of the increment between levels gets smaller, later. To go from character level 49 to 50 the player needs to gain more EXP (20,816) but that's only up about 6% from the previous level increment. That trend continues shrinking the interval between levels all the way up to level 99. This is a common trend in level-up systems of RPGs, especially single-player console RPGs. At first, I was quite confused by the data. For example, take a look at *FFV* and *FFVII*, and you see a very similar trend, but it's not just *Final Fantasy* titles that do this. *Diablo II* and *Call of Duty* do something very similar.[5–7]


GROWTH OF INCREMENTES BETWEEN LEVELS: *FFV*
400.00%
300.00%
200.00%
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CHANGE
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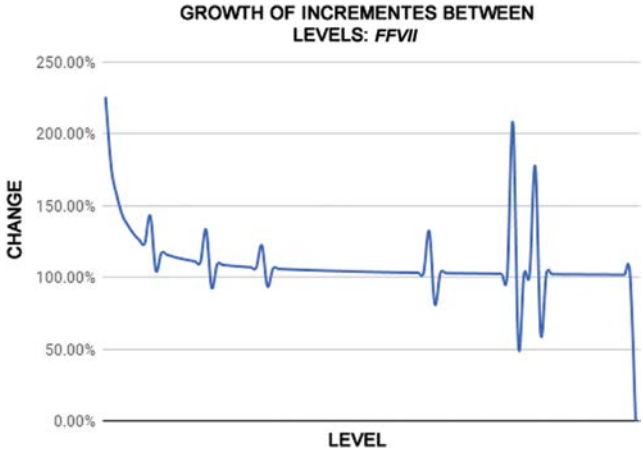
GROWTH OF INCREMENTES BETWEEN LEVELS: *FFVII*
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CHANGE
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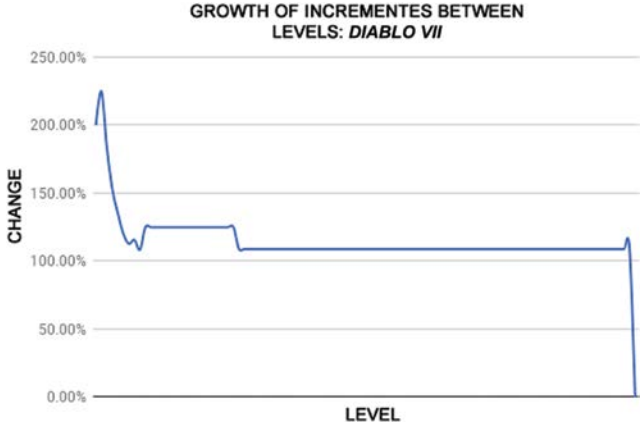
GROWTH OF INCREMENTES BETWEEN LEVELS: *DIABLO VII*
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100.00%
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CHANGE
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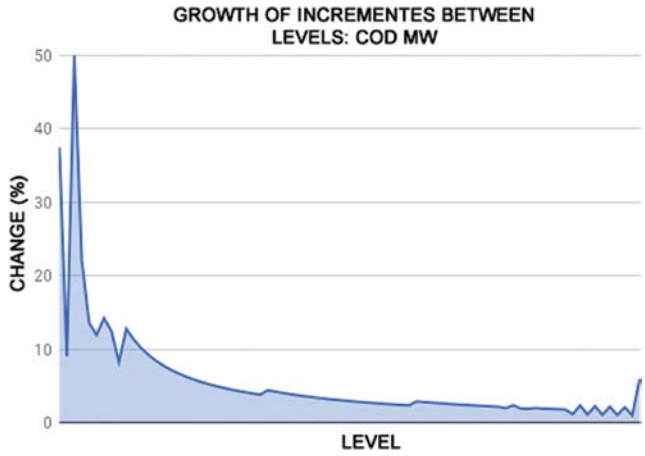


This is a little counterintuitive at first. Why would it become easier to level up late in the game? Doesn't that make the game progressively easier when it should be progressively more challenging? As far as *FFVI* is concerned, the answer is no. The result of this level up curve is in place at the player characters seem to level-up at a consistent rate, not an accelerating one.

To answer how this is the case, we need to take a brief step back and see the bigger picture. All level-up systems are founded upon one essential ration: reward over time (R/T). Most players will recognize this instinctively: the harder (and more time-consuming) a challenge is in an RPG, the greater the reward will usually be. There are exceptions to the rule, but this is true much more often than not. In a fair level-up system, the R/T ratio will not vary too widely throughout the game. Dungeons will generally yield results close to the player's expectations. The most common instance of this is in battles: EXP rewards should correlate to the difficulty and/or length of the battle. As characters level up in a dungeon, battles against the same set enemies will become progressively quicker and the rewards for completing those battles will become trivial. This decrease in reward will prompt the player to seek harder challenges that have more relevant amounts of EXP. That's the kind of design that will make sure the player sees a lot of the game.

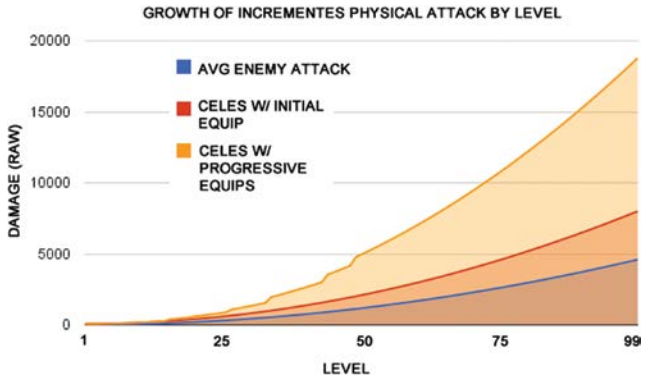
It is still possible for players to abuse the system by taking advantage of a favorable R/T ratio, in certain circumstances. That is, players can find exceptionally easy challenges (enemies) and defeat them at such an accelerated pace that the reward schedule becomes unusually favorable. In the early parts of the game, enemies are exceptionally easy so as to teach players how to use the combat system. (This fact is provable on two objective criteria. The defense of these early enemies is about 25% lower than average and they have fewer chances to do anything at all during battle based on the design of their AI.) It would be all too easy for players to take advantage of this necessary ease and speedily jump up several character levels ahead of where they ought to be at that point.

The level-up structure to which *FFVI* ascribes avoids the pitfall of early R/T abuse, and also serves a second purpose: to drive the plot. As we saw in Chapter 2, earlier dungeons are bigger and easier. There's also a lot more talking and a lot less treasure in those early dungeons than there are in the second half. Early dungeons need move the plot quite a bit and the player spends a lot of time in dungeons as a result. If the increments between character levels were as small in the first half of the game as they are in second half, the player might gain many more levels in the first half than in the second. That would make the game feel rather lopsided. Thus, for a variety of reasons essential to preserving the flow and balance of the game, *FFVI* and many games like it gradually reduce the size of the EXP increments between level-ups.

Levels and Stats

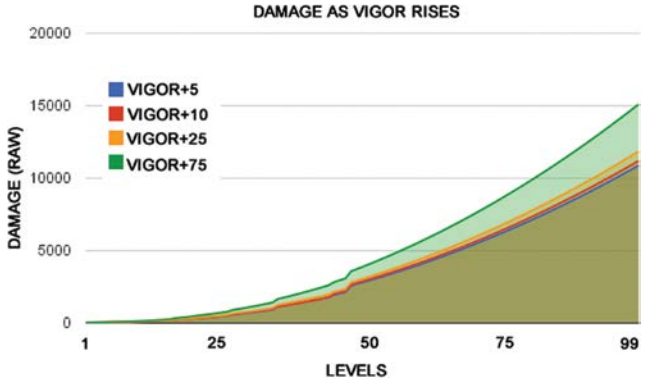
The *Final Fantasy* development team was presented with a problem: they needed to make stats meaningful without breaking their game's overarching design themes. The goal was to make different characters play differently, but not too differently. After all, most of the game is spent controlling one, very select party. The biggest dungeons, however, involve controlling two and three parties of characters. Characters can't play too differently or else jumping between those parties would become extremely confusing. *Final Fantasy VI's* stat system plays a large role in keeping the classes similar. As it is, most character stats in *FFVI* don't do much in the absence of equipment. Stamina, for instance, requires an extensive amount of investment in order to reap recognizable benefit. Adding 50 points to a character's stamina stat (via the use of an Esper equipped at level-up) will allow that character to evade debuffs like poison, confuse, and petrify, but equipping one accessory will accomplish the same thing with much less effort. Similarly, raising a character's speed requires 30 or more levels of careful management with the right Esper, but the player can accomplish the same effect on a whole party worth of characters by casting Haste 2. HP and MP investments are okay, although they don't increase the overall durability of a character that much—a fact that we'll discuss in the next section. The important lesson here is that most stats are not worth the effort it costs to raise them.

This dynamic emphasizes two things instead of character stats: one of them was equipment, and the other was character levels. Below is a graph charting the relative importance of levels and equipment in modifying physical attack damage. The top line is weapon upgrades; you can see how the slope is steeper than anything else below. Weapon upgrades not only give more power, but each weapon upgrade gives a larger proportion of power than the previous weapon.[8]



This is not the case with pure levels. The second (red) line shows how damage scales across levels if the player doesn't equip new weapons when they become available. The slope gets steeper, but much more slowly, and the absolute amount of endgame damage is, of course, nowhere near its weapon-upgraded counterpart. One might raise the objection that these gains in weapon power are neutralized by rising enemy defense and HP. This isn't the case; endgame weapons confer far more power than the player needs to beat the game comfortably, as long as the player takes the time to find them all.

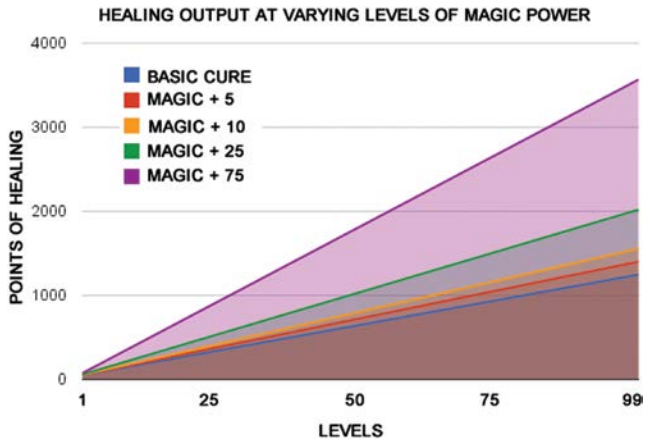
But what about the vigor stat, which plays a significant role in physical damage? When we factor vigor into the damage equations alongside levels and gear, it becomes clear how weak that stat is.[9]



It's clear that small differences in vigor—the kind of differences that are actually possible without immense planning and power leveling—have hardly any effect at all. Even at +75 vigor, which takes quite a bit of planning, there's barely any change at all in the slope of the damage curve. At level 60, there's about a 1200

point difference in DAE. Now, that's significant, but it's not game-breaking. It ought to be game-breaking, given how much dedication it takes to get there. Getting this amount of vigor (without the aid of equipment) requires 37 level-ups with the Esper Bismark equipped—or, to put it another way—equipping Bismark immediately upon acquisition in the Magitek Factory and never missing a level in between that point and the very end of the game. It's pretty unlikely that most players will realize this on their first trip through the game. The improvement is also negligible in comparison to the benefit conveyed by new weapons.

With that in mind, I want to examine the one stat that does matter: magic power. The graph below describes the increasing power of the cure spell as the magic power stat increases. What's important to notice here is that when the player changes magic power, the slope of the resulting line—indicating power per level—changes (a) significantly and (b) immediately. When adjusting magic power, players will see immediate results. Cure, in particular, sees an important change. At level 55, when it's most necessary, 25 extra points in magic power results in a character outputting around 50,000 more points of healing before emptying their MP pool.[10]



That's enough to heal party members from nothing to max about ten times—on top of the base amount of healing at that level. Acquiring 25 additional points of magic power is easy, requiring only 13 levels with the Zoneseek or Tritoch Espers. This kind of limited grinding is easy to do in the second half of the game.

At first, it seems strange that only one stat, when modified, makes an obviously meaningful contribution to combat. Yet, I think that this is totally consonant with the design philosophy as a whole, in that it diminishes the difference between characters. What is the one special ability that every character can use? Magic! Every character is going to learn some amount of magic along the way—there are enough Espers for every character to equip one at once. It makes a lot of sense

that magic power would be the most pivotal stat that doesn't rely on gear. Even a character the player doesn't like to use can be made into a useful fighter if they know Cure and Meteor.

Weapons Free: A Look at LEQ

As noted above, weapons and gear play an enormously important role in determining many of the elements of combat. Indeed, they seem to play a more significant role than any other single factor in the World of Ruin. Weapons and armor used in the final dungeon and against the final boss begin showing up immediately in the World of Ruin because there are 14 characters to provide gear for (and also because the design philosophy of the game calls for a wide level-up system). This has a secondary effect of making it possible for characters with very good gear to take on monsters that are above their level. This shows up in the numbers when looking at how much DAE a weapon does over the weapon it replaces. The last purchasable sword is the Falchion; no matter how many dungeons the player explores, we know he or she can buy a Falchion in Maranda before tackling the last dungeon. Now, let's assume that our player hasn't been using Celes, for example, and she's only at level 40. That's not a very good level for going through Kefka's Tower, but what if instead of using the Falchion, we equip Celes with the Scimitar, a rare sword dropped by a boss? Her DAE goes up about 188 points. That damage is the equivalent of Celes dealing the damage she would output if she were about two-and-a-half levels higher. Obviously, nobody can gain half a level, but a weapon can bring a character to an equivalent point. If the player replaces that Falchion with a much better weapon, say, the Ragnarok, there is a much bigger difference: her DAE goes up about 370 points, which is equivalent to gaining five character levels worth of damage. Entering Kefka's tower at level 45 is still a little low, but nevertheless a huge improvement. Equip her with an Atlas Armlet accessory for about 20% more damage (for another five levels of DAE), and the player has got a character whose damage output is functionally that of a level 50 character.[11] I call this statistic, which measures how many levels a piece of gear is worth, Level Equivalence or LEQ. It's not universally usable; it would fall apart in MMO endgame usage, and a number of other places, but when building a battle system for a single-player RPG, it's a useful way to look at how one piece of gear compares to another.

Trying to use LEQ for armor is a little more complicated when it comes to *FFVI*, for several reasons. Foremost among those reasons is that enemy attacks can be physical or magical, and most armor pieces have different stats for each. Another reason is that there are numerous enemy attacks that either ignore armor and deal direct damage or bypass armor by reducing player character HP by a predetermined fraction. The final reason is that much of the difficulty of the late game is created through enemy behavior rather than enemy stats. Also, monsters in second-half dungeons above level 40 achieve much of their damage output through the use unique physical attacks that are simply multiples of a "standard"

attack. This confounds any systematic approach to knowing what kind of damage to expect from a given enemy.

Much of the "what armor does for you" will be measured in Chapter 6, but since we're still here, it's worth noting one more important detail. While heavy armor has an advantage for most of the game, everyone's best set of gear is roughly the same. Of the final purchasable sets, the heavy (Crystal) set reduces physical damage by about 59% and magic by just under 40%. The light armor (Dark Gear) set reduces physical by 47% and magic by 32%. It pays to be a heavy armor-wearer, but not for very long. The best heavy armor set in the game (Genji armor) provides 70%/65% reduction, but the Snow Muffler (light) set provides 76%/52% coverage and conveys major resistance to three types of elemental damage. Similarly, the Behemoth Suit set (which is light armor) is almost identical to the Genji set. It's yet another example of the diminution of character classes—especially in the late game.

> *Trivia!* Did you know you can control enemies' speed stats through the config menu? It's the "Battle Speed" range, but be careful because it's counterintuitive! 1 = fastest and 6 = slowest. When buying gear, what are you getting for your money? Because of fantasy-world inflation, you're getting less and less. The first purchasable weapons give you about one battle power per 12 gold spent. Not even half a game later, you're paying 30ish gold for one point of attack. By the end, you're paying in the mid-eighties for the same one point of battle power! It's even worse with armor. You'll pay about 200 gold for one point of defense (including magic defense) for a Crystal Helm.[12]

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6

Dungeons, Durability, and Difficulty

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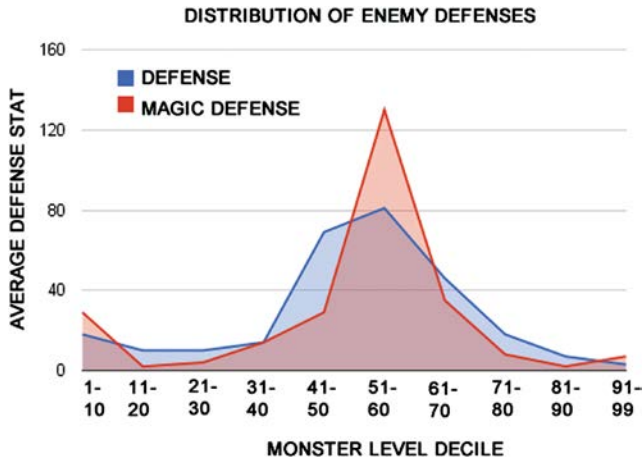
The Short Version: This section uses a statistic called RDur to measure the average length of encounters in dungeons throughout the game. The results of this study reveals that generally, most dungeons are very close to one another in terms of encounter duration. If this is true, it follows that the increasing difficulty necessary for making the game fun must come from other design features. One of these features is identified as being the "long game," which is the practice of making an entire dungeon into the meaningful unit of content, rather than the individual encounter. The second design feature that creates increased difficulty is changes in enemy behavior, which this section examines last.

It's important to note that HP, defense, evasion, and all the complex equations that make them function boil down to one essential thing, a stat that I call real durability (RDur). RDur is a measure of how many attacks of a certain type character or enemy can withstand before becoming incapacitated. Ultimately, *FFVI's* battles—like most console RPG battles—are about who falls down first. The enemy can endure X number of hits, the player characters can endure Y. These variables are the respective RDur stats of each side of the battle. Obviously, the RDur for each character, enemy, and attack is different, and there are modifiers like healing (which I do take into account below), but this is a simple way to look at

how difficult any given dungeon is relative to other dungeons. This stat also scales with level, making that comparison both possible and appropriate.

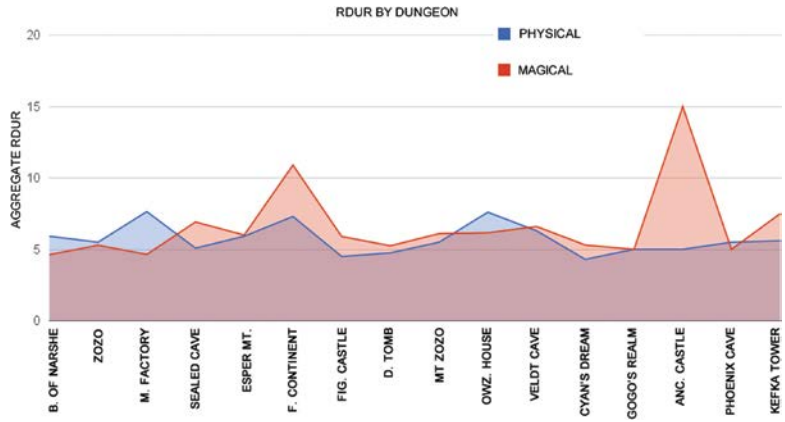
RDur is made easy, both for us as analysts and for the designers who made the game, by the standardization of stats in *FFVI*. The standardization of stats is a simple practice, common to many RPGs that allows the designers to adjust difficulty on fewer axes. If we aggregate the defensive stats of all the enemies in the game, that data forms a bell curve, albeit an ugly one because there are too few categories for the line to be smooth.[13]



The average enemy defense stat is about 112, or a 43% reduction from raw damage. More than a third of the enemies in the game have a defense stat within 5% of this reduction. As you can see, the same is true for magic defense, although the most common reduction for magic is around 55%.

There are numerous possible explanations for why magic defense is higher, on average, than its physical counterpart. Foremost among them is that the formula for determining spell damage is more favorable to the player than its physical counterpart. It's a lot easier to puff up a character's magic attack than his or her physical attack, as we saw in Chapter 5. Magic defenses rise to prevent exclusive reliance on magic, powerful as it can be. The second reason magic defense is higher, I think, is to offer a strange solution to the even stranger manifestation of the caster's advantage that appears in *FFVI* (more on that below). Magical RDur and Physical RDur correspond closely, except in two deliberate cases. The Magitek Factory sees a rise in physical RDur that is significant for that moment in the game, but a corresponding drop in magical RDur. It makes sense from a gameplay angle: the player has just received their first Espers and magic, and the game is teaching them how to ration their MP in a longer dungeon. (This is the same design choice seen in the Heckran Cave in *Chrono Trigger*, which serves the same purpose.) The other example is the Ancient Castle, in which magic is almost

completely unusable. This makes some amount of sense from a plot perspective: the place has been sealed since the War of the Magi, and so everything within is well defended from magic. In fact, in order to maintain the scale of the graph, I have downplayed the magical RDur of that dungeon. The actual RDur is much higher (around 50). In short: don't use magic there.[14,15]



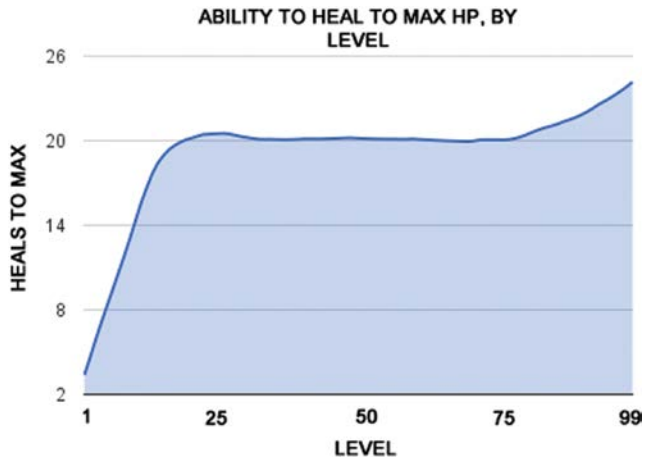
When creating an RDur score, I used two methods. For physical damage, I aggregated the various low-level physical attacks like Fight, Dispatch, and Pummel. For magic, I averaged the RDur of enemies versus the first two elemental spells in the World of Balance, and the second and third elemental spells in the World of Ruin. Because of the ratio of their power to their MP consumption, these spells are very commonly used. What's surprising is that RDur does not ascend throughout the course of the game. The monsters in almost every dungeon have similar RDur figures, meaning they all take about the same number of turns—on average—to defeat. What makes the later dungeons more difficult? It's not the life of the enemies, if RDur tells us anything. Instead, it must be the way that enemies attack.

Player RDur and the Long Game

In *FFVI*, primary hurdle that players need to overcome in later dungeons is making it through long dungeons in one attempt. *Final Fantasy VI* is not a hard game, but it does get relatively more difficult toward the end. As monsters deal more damage and inflict more debuffs, under-prepared players can find themselves unable to make it to the next save point in a dungeon. HP and MP are never automatically recovered between battles, and the player has to constantly be healing. In the second half of the game, healing items are either too weak (Potions) or too scarce (Elixirs and X-Potions) to keep two or three parties of characters alive by themselves. Magic is the only sustainable, reliable way to recover HP lost across

battles in long dungeons. Thus, the player's ability to make it all the way through a long, end-game dungeon depends largely upon how long the MP pool of their characters can hold out.

When it comes to the MP pool, *FFVI* characters are governed by a spell-specific design dynamic called *the caster's advantage*. The caster's advantage is a dynamic common to many single player RPGs, which helps high-level casters overcome the hardest challenges in that game. The advantage occurs when the cost of a spell is fixed at an absolute amount, while the healing or damage yield of the spell continues to scale up as the caster gains levels. This happens in *FFVI*, but only until the beginning of the World of Ruin. You can see on the graph of the how the number of heals to full using the "Cure" spell grows across the course of the game. Remember that this graph already adjusts for the increasing HP of the characters it heals.[16]



The early growth of healing potential gives players a huge advantage in the early game, even though that's the place where healing items are still effective. Why does the healing output plateau—and even shrink a little bit—when the hardest dungeons come along? I can think of two answers: one is the ease with which players can grow their magic power stat for meaningful results. Increasing a character's magic power with Esper boosts will bring back those early gains—and even increase them (as we saw in the previous section). The other answer is that in the World of Ruin, there are a large variety of accessories that can either drive up the power of healing (and damage) or drive down the cost of each spell. In that regard, eliminating the caster's advantage makes a lot of sense; it forces tactical decisions about equipment and/or forces the player to go out into the world to find new items that convey such benefits. In that regard, the caster's advantage works marvelously in *FFVI*.

There's another side to this dynamic, however, that can hinder new players. When a spell in *FFVI* targets more than one character or more than one enemy, the damage is not divided by the number of targets. Rather, the damage (or healing) is cut in half, no matter how many targets it has. So, an attack spell targeting three enemies will actually do more total damage (not accounting for defense) than a spell concentrated on a single target. As far as I can tell, this is a free lunch. With magic, there is always the drawback of limited MP, so at least there's *some* kind of cap on the advantage posed by multi-target spells. Those MP can either be spent on damage or healing, so the player is making a tactical choice.

With non-spell damage, and especially through most of the early game, multi-target damage is a serious problem because it heavily favors a small number of characters. Sabin, Edgar, and Cyan all have MP-free attacks that hit multiple enemies for decent damage. These abilities are available before magic is available to characters, and even after magic is introduced, these attacks still cost no MP. To me, this seems harmful to the design because the core principle of *FFVI* is that characters should be roughly equal. First-time players who are especially conservative with party composition tactics may not understand the intended dynamic of *FFVI* and may rely on those early multi-target abilities even when they're not as relevant as they used to be. Thus, those new players may suffer through a kind of "doldrums" period in the final dungeons as they learn how to use advanced magic and the special abilities of the many characters they have neglected.

It seems that there were a few easy ways out this problematic dynamic that the designers didn't use. Spell damage could easily have been calculated on a per-target basis. That is, if a spell or ability has four targets, it could do 25% of normal damage to those targets. This forces the player to think critically about the spell. Is it worth casting it, even with the diminished effect it will have? This dynamic would make the player more conscious of elemental affinities which could make up the damage lost when targeting several enemies at once. Alternatively, they could have lowered the power of abilities which naturally target multiple enemies, like many of Sabin's blitzes and Edgar's tools. Sabin can often wipe out an entire battle with one blitz at no cost in MP. The theoretical tradeoff is that some of the blitzes are physically hard to pull off. On a bad SNES controller, that was sometimes true, but that fact doesn't solve the essential balance problem.

Enemy Design and Player RDur

We still need to figure out some frame of reference for the RDur of the player's party, especially as it shapes the long game of a dungeon. As explained earlier in the assessment of stats, both magic and physical damage grow in a linear way relative to the level of the caster (in the absence of hardcore stat modification via Espers). This is important because it means that just based on stats, the RDur

of enemy-against-player is not going to change as the game goes on. To give a concrete example of the relative unimportance of raw monster stats, none of the enemies in Kefka's tower fall into the top decile of stats for attack power or magic power (and few even fall into the top 20%). Those enemies are definitely among some of the most difficult. Something else is making these enemies difficult. How do we understand that?

Monster difficulty tends to be a product of an enemy's signature skill, the debuffs it uses, and its behavior pattern. A signature skill is a custom-made skill that the designer gives to a monster. Usually, a signature skill is called something like "Claw" or "Fire Ball." These are skills that the player has no access to, except through Gau's rages. These attacks have their own built-in power stat, which I call the *component stat* of the ability. Usually, a component stat is expressed as a multiple of base damage. Early in the game, monsters tend to have signature skills that deal 1.5–2x base damage. Late in the game, monsters have signature skills that deal 3–5x base damage. The power of a signature skill is often more important than the power of the monster that casts it. It's easier for the designer to re-balance the signature skill via component stat and usage rates than it is for him or her to re-balance all of an enemy's stats (we'll see more on usage rates below).

Debuffs are an important part of enemy design as well. Many signature moves don't do any damage, but rather inflict debuffs like poison, zombie, or blind. It's not really possible to assess those debuffs in terms of player-character RDur. Instead, we can understand them as negative enemy RDur. Players have to spend turns removing debuffs—especially incapacitating debuffs like sleep, confuse, and petrify. Any turns spent removing debuffs are *not* spent attacking the enemies. When balancing an encounter, the designer should modify the enemy's projected RDur to account for debuffs which can act as a kind of "extra life" for enemies that cast them. Even then, the designer also has to take into account how often the monster uses its debuffs.

Monster Behavior and Turn Density

One of the biggest factors in enemy difficulty is entirely obscured from the player's view. Late-game monsters attack more often than early-game monsters and use their best abilities more often as well. The reason for this is not a sharp increase in enemy speed stats, but rather a significant change in the way that enemy AI scripts work. A typical AI script in *FFVI* is between one and three lines long, and looks something like this:

```
<Enemy's turn comes up. Enemy randomly chooses one of the following actions.>
fight | no action | no action
<Next turn.>
fight | signature skill | no action
<loop back to beginning>[17]
```

By default, the enemy only has a 33% chance of using an ability *at all* on the first turn, and only a 66% chance of using an ability on the second turn. The chance

that the enemy will use its most powerful skill is only one in six, and it will only happen if the enemy survives long enough to get to turn two. Because of this, many early monsters are not much of a threat. The chance that they'll even use their signature skill is low and usually reserved for the second turn. The remarkable thing is that early and mid-game enemies have most of the same abilities that end-game enemies have. Early and mid-game enemies can cast fraction attacks, a variety of debuffs, and hugely powerful spells like Quake, they just rarely do so.

Later in the game, enemies start to use their best abilities more often, and this leads to a much greater level of difficulty, even if it doesn't technically change a battle's RDur value. A typical enemy in the highest-level dungeons will either have a script that causes it to use a strong ability on every turn, or else use a strong ability as a counterattack, or that monster might do both of those things. The simple result of this is that higher-level enemies take more turns. RDur measures durability in terms of how many attacks it takes to kill a monster or character. When a monster suddenly starts taking more turns, the player-character's RDur value doesn't suddenly go down—it's just that the monster chews through that value more quickly. In Kefka's tower, enemies take lots of turns because their scripts have favorable odds and because they use counterattacks and last-breath attacks before dying. This almost guarantees that every enemy in the dungeon will use their best attack at least once. Many of those abilities can cause multiple debuffs or even instant death, so it's no surprise that Kefka's tower is harder, even though the monsters there don't have outlandishly high stats, relative to the rest of the game.

Monster Templates via RDur

Now, let's translate all of the ideas in the preceding two sections into a streamlined method that looks at the process of making *FFVI* enemies/battles in terms of RDur values. Although the Squaresoft designers probably balanced *FFVI* battles by enormous amounts of playtesting and a few rules of thumb, we can reverse engineer a more streamlined process based on their results. It all starts with a projected RDur value for the enemies in the battle.

- The RDur of the monsters in any given battle is more or less a given—it's going to hover around the game-wide average. The designer has to calculate how that RDur is implemented by a combination of defense and HP, but most enemies are going to have a defense stat within 10% of the average. Thus, the HP is the biggest variable in that calculation. That reduces the number of possible decisions quite a bit.
  - If the monster has debuffs, the designer should adjust the monster's RDur to account for the turns the player has to spend removing them.
- Next, the designer picks an approximate RDur for the characters when receiving damage from this monster. After choosing a number, the designer figures out how powerful the monster needs to be in order to kill a player character with that many attacks.

- To do this, the designer picks a standardized stat tier from the bell curve and figures out the base damage attacks would do.
- Then the designer factors in the armor that he or she expects the player character to have and comes up with adjusted base damage.
- The designer then creates a signature attack. This attack should deal damage equal to (character HP/desired RDur). The power of the signature attack should be represented as a multiple of base damage. I.e., "Bite" deals 5x base damage.
  - The designer can also pull pre-made spells like "Fire 3" from a list as long as those spells do the right amount of damage to satisfy the RDur calculation.
- Finally, the designer figures out how often the monster should attack and especially how often they use their best attacks.

Everything written above is a streamlined simplification. I don't account for the few enemies that are statistical outliers. I don't account for enemy group composition, which can affect enemy difficulty in a profound way. I don't account for enemies with huge ability lists. If you're looking to make a game like *FFVI*, however, this process will help you get through enemy creation and playtesting faster.

The Two-Attempt Dungeon

The last thing that contributes to the complex "long game" of Kefka's tower is the level scale. The first enemies in the dungeon are, on average, level 50. The enemies at the end of the tower are about level 55. There is not enough time for the player characters to gain those five levels during the course of the dungeon (at most, they'll gain two or three), so characters who don't start out that high are going to get pummeled a bit harder than usual. The LEQ benefits of good items can neutralize this disadvantage, but most first-time players aren't going to enter the dungeon prepared to replenish themselves enough to level up their disused party-members to 55—at least, not on their first trip.

A second trip through the dungeon (courtesy of the Warp spell) almost certainly will get everyone up to a sufficiently high level. There are other reasons to enter and exit the dungeon beyond the need to heal. For one thing, there's a surprise boss fight against Inferno for party three. I'd wager that quite a few first-time players put their worst characters in that last party and suffer a humiliating defeat when the boss surprises them. Reorganizing the party to include more developed characters requires exiting the dungeon, but it's not as though exiting is a total loss. The player keeps his or her EXP and item rewards. There's also a heck of a lot of gear in that final dungeon, and it's probably easier and more effective for the player to exit the dungeon, unequip everyone, and take a look at the total equipment pool before reassigning it to various party members.

The Post-RDur World

RDur loses some of its meaning in the era of modular content. I understand why regenerating health exists. It can be very annoying for players to be stranded somewhere they can never exit because they're one battle away from death, but five battles away from an exit. I think, however, that a lot of designers take refuge in the notion that modularizing content is always the best practice. By doing so, they can avoid balancing anything larger than a single set piece. There's no need to think about how that set piece flows into the next or previous one. After reading about the disastrous schedules, last-minute revisions, and huge technical and financial pitfalls that AAA development teams go through, I understand why regenerating health and other modularizing techniques are so useful. For those who want to make dungeons as a whole meaningful, RDur is a useful tool. For all the formulas, mechanics, and strategies that designers build into their games, every battle is basically about who falls down first. RDur isn't the only statistic that matters, but it can definitely help to point out places where the design might need work.

> *Trivia!* The Genji helm would provide you with the best RDur of any helm… if you were just counting defense. The Red Cap provides a 25% increase in HP in addition to its defense, which blows everything else out of the water. Why didn't I include evade into my assessment of RDur? Evade is meaningless because of a bug; magic evade controls both stats. Of the enemies with enough magic evade to actually matter, only one of them is loose in a dungeon (Pug), and many of the best spells are inevitable. About one in 10 enemies has an evade stat that might have meant something, if the system hadn't been bugged.[18,19]

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7

Conclusion

This section represents a kind of "best of" for design ideas from *Final Fantasy VI*. I attempt to extract the very essence of the game, creating a list of things that designers can take away and apply to their own project game. This is done for practical purposes and with some hesitation because as I hopefully have just shown, *FFVI* is quite complex. Nevertheless, here are the design lessons to be gleaned from the game.

1. *Standardize your stats*: If you're not going to be releasing endgame raid patches, standardize your stats across the course of the game. Enemies at level 1 and level 99 can have the same defense, magic defense and speed stats, if you design your algorithms well. It makes the task of balancing monster difficulty so much easier if there are standards to apply.
2. *In games with a large cast, center the plot on a villain*: There is no reason why the villain should not be the most charismatic person in the game (or close to it). Having a villain as the central focus of the plot allows for a lot of artistic and thematic latitude, while still having a clear game-like goal for the players.

3. *Do not pile all* (*or even most of*) *the best equipment in the second-to-last dungeon*: Your game is only going to feel complete and climactic if the player has to dig around in a lot of different places to get the really good stuff. Crafting a wide level-up system is incredibly useful for making your game memorable.
4. *The set-piece does not have to be the primary unit of content*: Content can exist at the entire-dungeon-level. It's alright for shooters and some RPGs to restore all health and resources after every set piece, but there are many great examples of playing the "long game" across entire dungeons. *Final Fantasy VI* did it well, and by using RDur, it is possible to add a dungeon-level strategic layer to the player's actions.
5. *NPCs > Strategy Guides*: It's better to have all the clues necessary for finishing your game (100% completion!) inside the actual game than it is for the players to have to search a wiki for it. NPC irony, when used well, can communicate things to players in a variety of satisfying ways. Being able to piece together a series of clues in-universe is so much more rewarding than looking it up online!

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