

In recent game writing, there have been two prevalent, intertwined themes: the *ludonarrative divide*, or the tension between the play of a game and its story (Costikyan, 2007); and the need for games criticism (Gillen, 2004; Costikyan, 2008). The lack of criticism might be attributable to the lack of a widely-used critical language.

Requirements for the widespread use of a language include broad applicability and some degree of formalization. Such a language must therefore be informed by the history of the schism that shaped the discourse of game studies as well as the accord, if any, that has been reached between the camps of the ludologists and narrativists.

Of all the answers that have been proposed to this game/story conflict, the concept of games as *narrative systems*, where the gameplay and story both help to construct a broader narrative in the player's mind, has gained the most traction (Salen & Zimmermann, 2004, p. 404-406; Simons, 2007; Travis, 2008d). After exploring current means of game criticism, this paper will suggest a *parametric criticism*. This critical language considers games as narrative systems and analyzes them by examining where and to what extent the game allows the player to influence the overall narrative.

The History of the Ludonarrative Divide

Game studies is a fairly young field, but it is already old enough to have seen its first major religious war from the late 1980s to the early 2000s. Traditional humanities researchers called *narrativists* believed that games were best studied with narrative theory; a group of *ludologists* held that games should be granted their own discrete field (Costikyan, 1988, Introduction section, ¶ 2; Simons, 2007, What Ball to Play? section). Some of these ludologists declared that stories and games were absolutely different media (Juul, 2001, Introduction section, ¶ 5); others held that the two represented

opposite ends of a spectrum, and that the more story a game accumulated, the less game-like it would become (Costikyan, 2007, The Clash of Games and Stories section).

Costikyan (2000) held that this was because stories were innately linear and games were not (Linearity In Games section, ¶ 1-2). He had been saying this as early as 1988 and continued to hold that position for over a decade (Costikyan, 1988, Linearity section, ¶ 1). Juul was also an outspoken proponent of this view. In *Games Telling Stories?*, he wrote that even if players could tell stories of a game, or games could contain narratives, it would be impossible for the narrative parts of a game to be at all interactive (Juul, 2001, Conclusion section, ¶ 1). In short, he argued that interactivity made telling stories impossible for a designer. He also railed against the idea of redefining *narrative* to include games because such a definition would be overly broad; just because games could be described in terms of narrative didn't mean they should be (Everything is narrative / Everything can be presented as narratives section).

Juul (2001) cited the *Star Wars* arcade game as an example. The *Star Wars* game adaptation, he argued, only translated a part of the first film's story, and not very faithfully at that (From movie to game: Star Wars section, ¶ 2). The player could crash into the sides of the trench, miss the exhaust port, or fail in other ways; exercising these possibilities ran in direct opposition to the story of the films (Ibid). Juul expanded on this belief that interactivity made storytelling impossible by describing how games collapsed the different kinds of time in narrative—flashback, flash-forward, or time passing at different rates—into the *now* of interaction (Time in the computer game section).

There were many other hard-line ludologists such as Aarseth, and Eskelinen, but they mostly followed the same line of thought: Since games were so much freer and

more interactive than boring and linear stories, the stories that did get forced onto games almost always would contradict or limit the gameplay (Costikyan, 1988, 2000, 2007; Juul, 2001; Aarseth, 2004 in Simons, 2007, What Ball to Play? section, ¶ 3; Eskelinen, 2004 in Ibid). They argued that games therefore needed a new academic discipline distinct from the other humanities.

In the end, the feud settled into a mutual apathy (Simons, 2007, What Ball to Play? section, ¶ 4). Narrativists continued to analyze games primarily as narratives, and ludologists did their own research ignoring story and narrative theory. A few gestures were made—some ludologists conceded that story was valuable for contextualizing play (Frasca, 2003a in Ibid)—but on the whole, the ludonarrative divide was ignored rather than repaired.

Modern Perspectives on the Divide

This agreement to disagree is problematic, because designers and critics on each side have discarded a great wealth of techniques from the other. As just one example, Newman (2002) says that players don't think in terms of controlling a character, but of being that character; if designers were able to distinguish between viewpoint and perspective (it is possible to have a third-person view and a first-person perspective), they might produce much more interesting works (Playing Games section, ¶ 3). Jenkins (2002) also maintains that game designers ignore narrative study at their own peril (Introduction section, ¶ 2).

The problem implicit in this myopia is that ludologists have defined themselves into an untenable position in order to defend their academic turf. They almost universally took too narrow a view of terms like *narrative* and *story*. Jenkins (2002)

feels that a “series of conceptual blind spots” (Introduction section, ¶ 9) interfered with the ludologists’ understanding of games and narrative. They only considered linear storytelling models, and did not distinguish the telling of a story from the story itself. Laurel (2000, in Salen & Zimmermann, 2004) phrases it succinctly: “In common speech, the name ‘story’ actually refers to the central bundle of potential created by characters, worlds, situations, histories, and so forth, rather than to a specific instantiation.” (p. 379)

Jenkins (2002) criticizes Juul’s indictment (2001) of *Star Wars* by saying that Juul’s concept of remediation is “old fashioned” (Evocative Spaces section, ¶ 2). It is clear to Jenkins that the game would be useless if it were a “regurgitation of the original film experience” (Ibid); instead, the game “exists in dialogue with the films, conveying new narrative experiences... within a larger narrative system with story information communicated through books, films, ..., and other media” (Ibid).

Experiences, he says, might not be able to translate literally, but stories definitely can (Jenkins, 2002, Introduction section, ¶ 8). Even if the experiences aren’t portable—Hitchcock’s “tight control over viewer experience” (Ibid) would not be feasible or even valuable in a game—the examination of what games share with other media, and how they differ, is valuable for moving narratives across media. He further counters Juul’s (2001, Time in the computer game section) claim that time in games is always *now* by saying that Juul “confuse[s] story and plot” (Jenkins, 2002, Embedded Narratives section, ¶ 4), and that games can do anything with time that films can.

So if narratives aren’t merely linear sequences of non-interactive events, what are they? Jenkins (2002) suggests that games, like musicals and action films, might have accordion-like structures (Enacting Stories section, ¶ 4). In such a structure, some

elements of the plot are fixed, but others can be expanded or contracted appropriately to the audience without damaging the overall plot. Game designers currently use cutscenes the way that early film-makers used inter-titles: to break up these accordion segments. As the medium matures, the ludic equivalent of what Jenkins terms *visual storytelling* will surely emerge, replacing the cutscene as inter-title and offering greater room for improvisation and self-expression (Enacting Stories section, ¶ 4). Another way of thinking about game narratives is as a series of *micronarratives*, what Eisenstein called *attractions* (Enacting Stories section, ¶ 3). These are hooks that the story might hang on or particularly notable events or impressions offered by the game.

Salen and Zimmermann (2004) say of games that “it is the dynamic structures of games, their emergent complexity, their participatory mechanisms, their experiential rhythms and patterns, which are the key to understanding how games construct narrative experiences” (p. 382-383). They cite LeBlanc’s (2001, in Salen & Zimmermann, 2004, p. 383) definitions of *embedded* and *emergent* narrative, with the former being encoded in the game world via cutscene, art asset, text, or otherwise, and the latter resulting from the experience of play itself—for instance, one gets a narrative sense of a situation as difficult or death-defying if one has to try repeatedly to get through it safely.

Most modern writers agree that games do not exist to tell specific stories, as the ludologists thought; rather, games are story-spaces or story creation tools. In other words, games are narrative systems.

Studying Games as Narrative Systems

Jenkins (2002) admits that traditional narrative structures can't be directly mapped onto games (Jenkins, 2002, Introduction section, ¶ 8). He discussed this sentiment with his collaborator Fuller: "Most of the criteria by which we might judge a classically constructed narrative fall by the wayside when we look at these games as storytelling systems" (Fuller & Jenkins, 1995, ¶ 14). Despite this, Jenkins (2002) argues that game critics must consider existing media theories and how they might apply, proposing as an example a connection between games and architecture (Introduction section, ¶ 9).

Both media are constructed spaces that can directly express certain meanings and subtly suggest others by their form and function (Jenkins, 2002, Spatial Stories and Environmental Storytelling section). Games are about space and participation in that space. In these artificial environments, the designer acts as an architect: "If games tell stories, they do so by organizing spatial features... game designers create immersive worlds with embedded rules and relationships among objects that enable dynamic experiences" (Jenkins & Squire, 2002, Introduction section, ¶ 2). In fact, many game designers have architectural tendencies of *romanticism*—imbuing landscape with moral qualities—and *expressionism*—assigning emotions to physical space (The Legacy of Romanticism section, ¶ 1). A better understanding by designers of these schools of thought could be valuable. It could also be that designers endow more than just terrain and space with these qualities; they might endow rules and interactions with them, too.

This all suggests that travelogue might be a good way to do games writing. Fuller and Jenkins (1995) proposed it early on, and more recent examples of this form

include the unfortunately named *bonersgames* (Jones, 2008) and blogs such as *how do i play game?* (PapaBoo, 2008). PapaBoo details the journey of a new player through *Half-Life*; for a trip through the world of *Half-Life 2* through a protagonist's eyes, there is the web-comic Concerned (Livingston, 2006). These are especially interesting examples in that some of them are in-character and some are out-of-character— harkening back to Newman's (2002) comment on viewpoint vs. perspective (Playing Games section, ¶ 3).

Spector argues that “well-designed game environments present players with clear goals...” (Spector, n.d., in Jenkins & Squire, 2002, Realistic Space? section, ¶ 2). These spaces provide players a way to solve problems in the context of a greater story, including the player in a dialogue between the game's systems and the player's self-expression.

Salen and Zimmermann (2004) propose an explicit definition of game narratives as narrative systems. They describe the process of game design as the act of combining “simple elements that interrelate to form a complex whole” (p. 404). This complex whole works on principles of emergence to produce a broad variety of possible narratives. The role of the designer is therefore to design systems that can produce the right kinds of stories. As an example, *Ms. Pac-Man*'s narrative is constructed from a myriad of procedural and static components (Salen & Zimmermann, 2004, p. 406). Specifically cited are the arcade cabinet and the title of the game; its reference to predecessor *Pac-Man*; the implications of the title “Ms.” along with the ribbon and beauty mark; the cutscenes between levels; and the rules and aesthetics of the game itself. This combination creates a “narrative whole that is more than the sum of the

parts... The play produces intense emergent narratives of insatiably hungry consumption, strategic avoidance and survival, and dramatic turnabout..." (p. 406).

Since games are interactive narrative systems, it could be argued that the bulk of characterization should take place through that interaction. The rules governing these interactions are often called *game mechanics*. Newman (2002) suggests that players don't consider Mario's accent or mustache or Sonic's personality as much as their abilities of jumping or running (There's Only One Mario? section). This subsumption of the player character indicates that the aspects of characterization that the player engages with are the ones that are backed by play and participation.

Simons (2007) has a similar thought from a different perspective. He suggests that characterization, plot, and other aspects of a story are determined by rules, even if these rules are not coded in the game in an interactive fashion (External Observers versus Immersed Players section, ¶ 12). Characters' actions, accents, and personalities are guided by the rules designed by their writers just as the behavior of a computer simulation is guided by the simulation's programmer. This suggests that where the player has less input in the characterization, the writer has, in a sense, played the character and the world up to the point at which the player begins to play.

This approach to game narrative in terms of degree of participation is a very important insight. Salen and Zimmerman (2004) describe the dice and paper game *Thunderstorm*, wherein the player must gradually draw a house to count up certain dice rolls (382). By allowing the players to participate in the visual thematic elements through drawing the house their characters are building, each play becomes a particular, personal thunderstorm story, and *Thunderstorm* could generate any number

of such stories. This aesthetic participation makes it a much stronger experience, transforming *Thunderstorm* from a randomized counting game into a fable about the folly of hubris and the inevitability of fate. Including the players in this way gave them a much greater degree of involvement than any amount of introductory text in the rules.

Game narrative systems can also be viewed as collaborative story creation. Klastrup (2003) writes that player actions are *tellable* if they “would retrospectively make good stories” (Story as Tellable Events section, ¶ 1). Salen and Zimmermann (2004) describe how these stories can be retold in various ways and for various reasons. Recounting a dramatic victory, sharing story events, sharing strategies, and celebrating play are all reasons that players might “construct stories out of game experiences, creating narratives that exist separately from the actual narrative play in the game” (p. 412-413). This is valuable for community-building and is often encouraged by game designers, especially in online games. This use of games as explicit storytelling tools is also well known to pen and paper role-playing enthusiasts.

Newman (2002) also suggests that games can be composed of sections of varying interactivity, and furthermore that there may be more participants than just the player, such as a non-controlling navigator (On-Line/Off-Line section). *Super Mario Galaxy* ups the ante by giving this navigator role a zero-risk way to interact with the game by collecting *Star Bits*, firing these Star Bits at enemies, and other small means of assistance; this increases the variety of interactions with the game. Travis (2008d) goes a step farther and claims that games are best understood as an extension of the Homeric epic tradition, with the player taking the role of the bard (¶ 5-6). The parallels are very strong, even though the audience may be an audience of one. Demodocus, for

instance, played a sort of game at Odysseus's behest, inventing a story of the Trojan Horse given the constraints of the heroes involved and the broader setting (§ 3-5). This kind of participation is very game-like.

There is no shortage of valuable lenses for studying narrative in games; but as yet there is precious little in the way of broadly applied criticism. Jenkins (2005) believes strongly in the need for such criticism and an informed public if games are to evolve as an art (The Value of Criticism section); he also writes in Jenkins and Squire (2002) that as player participation increases, players, too, will need to be informed in game design (Social Spaces section, § 2). A similar lamentation about the lack of criticism is made by Costikyan (2008), and Gillen (2004) feels that all of games journalism is in dire straits for similar reasons.

A Survey of Methods for Game Criticism

Consalvo and Dutton (2006) observe that even though there are many examples of what they term qualitative studies of game content, the writers virtually never describe their methodologies (Game Analysis section, § 3). They cite Brooker's analysis of the *Jetman* series as an example where the author analyzes several aspects of the games, but neglects to write why he chose those aspects in particular and not others; Brooker also fails to provide any clues on how to apply a similar approach to other games (Brooker, 2001, in Consalvo & Dutton, 2006, Game Analysis section, § 4). Luckily, there have been some recent attempts by games writers to codify standards of criticism. Each of these critical methods is appropriate to specific writers, specific games, and specific purposes, and a combination could be employed in analyzing a game or group of games.

Consalvo and Dutton (2006), after explaining the need for repeatable processes in game analysis, propose a fairly heavyweight methodology that can be employed by anyone with the patience to follow it. Their approach is more geared towards gathering information than for performing the critique itself, but it is still very valuable for critics and designers. It is worth keeping in mind that, like any formal data gathering process, it does suggest certain means of critique more than others.

The two suggest analyzing a game in four respects (Consalvo & Dutton, 2006): The first approach is to take an *object inventory* of the game, examining the objects, their connotations, and their denotations (Object Inventory section). The critic must also perform an *interface study* to understand what inputs and mechanics the game and game world provide for the player (Interface Study section). A third technique is the development of an *interaction map* to chart the possible interactions between the player and other players or non-player characters with respect to dialogue and other forms of direct interaction (Interaction Map section). Finally, Consalvo and Dutton suggest that the analyst create an experiential *gameplay log* focusing on surprises, emergent behaviors, presentational issues, and aesthetics (Gameplay Log section).

A benefit of consistently gathering data is that comparing games is much easier. The breadth of the information collected also permits critics to “develop research questions that look at ideological assumptions operating in a game, or determine if certain theories can best help explain a game or series of games” (Consalvo & Dutton, 2006, Game Analysis section, ¶ 9). The processes provided by Consalvo and Dutton are certainly complete and provide excellent information, but they require a lot of discipline to follow.

Travis (2008c) describes a mode of criticism based on the idea of *performative play practices*. Both games and Homeric epics, he says, are examples of these practices. A performative play practice is an “intersubjective performance... in a cultural zone demarcated for play. Within that zone conventions may be and usually are determined by rules” (§ 8). This bit of language is very valuable because it provides a link between the rich tradition of classics criticism and the nascent discipline of games criticism. Travis (2008b) analyzes *Halo* in this context, tying specific aspects of the game’s introduction and gameplay to style of Homeric epic.

Online games tend to show progression through two primary mechanisms: *gear*, or the equipment held by the player; and the *grind*, or the player’s repeated execution of the same content to become stronger. Travis (2008a) ties these processes to *Illiad*’s battle books, relating the hunt for gear to the capture of Achilles’s armor (p. 1, ¶ 4-6) and framing the grind as education akin to the construction of the meaning of *glory* (p. 2). He also draws parallels between the party structure and epic *polyheroism*(p. 3).

This is an interesting means of criticism, and it can be extended beyond just comparing games and Homeric poetry. It is straightforward to see how similar techniques could be used with improvisational theatre or other forms of storytelling and story creation. Bogost’s (2006) concept of *Unit Operations* can be seen as a more general form of this critical language. These procedural units of meaning can form anything from stories to software when composed together, and the intent is to provide ways to consider specific operations such as saving a princess or fighting a losing battle as they’re expressed in different media.

Jeffries (2008) at the blog *PopMatters* proposes a critical language called *Zarathustran analytics*, abbreviated ZA, named in homage to Nietzsche's philosophy of personal motivation and primacy. ZA suggests that plot, game design, and player input form a trinity that respectively contextualizes, constrains, and gives life to the play of a game (Introduction and Basic Concepts section). This approach recognizes the importance of holistic critique and player participation, but it may fall into the same trap as Juul: too narrow a definition of plot. It collapses characterization and plot into one unit, and it sets this combination apart from the sacred cow of *game design* (Evaluating Game Design section; Evaluating Game Plot section).

This oversimplification is not limited to plot—all kinds of player participation are crammed into one category (Jeffries, 2008, Evaluating Player-Input section), ignoring the different connotations that different sorts of participation might have. As an example, consider *Wii Music*, where the player's participation has a significant outcome on the produced audio, but not on the gameplay. Different players will make different songs with no game-mechanical consequences. In *Guitar Hero*, the player does have a slight degree of influence the audio that's produced by the game, but different perfect players will produce the same song; correct performance leads to new gameplay opportunities like *Star Power*. This difference represents a significant design choice: *Wii Music* is for noodling around and for self-expression with no wrong answers; *Guitar Hero* is for mechanically executing repeated timing-based physical skill tests with some music wrapped around for flavor. To an observer, the play might look very similar—the inputs might be virtually identical in terms of timing and visible player excitement—and both games have a mechanical mapping from player actions to synthesized sound.

It is clear with this example that even if the amount of player involvement is the same overall, the outcome is totally different depending on how the participation is directed. It could merit some modifications to ZA such as hierarchical divisions in the game design category. But what about the music involved in both performances? Is it part of the plot group, or is it game design? It could be argued either way. ZA is straightforward to apply and can lead to valuable insights, but its scope is somewhat limited by its assumptions. Still, it remains an excellent tool in the critic's belt.

Terrel of *Critical-Gaming* has devised two languages for games criticism. The first is called *new classical* criticism, and it orients all critical effort around a game's *primary function*, or an ordered list of such functions in a game (Terrel, 2007, ¶ 1). These functions are always game mechanics or groups of mechanics; for instance, *Super Mario Bros.*'s primary function might be Jump. New classical criticism specifically examines how the formal elements such as visual art, music, story, and so on support the primary functions. Very quickly, one sees the ludologists' story-game division rear its head: "Elements like story can't be more stressed and more important to a game than the gameplay" (Ibid). New classical criticism does a good job of analyzing how the different aspects of a game support the play, but it treats these elements as if they were experienced passively, as opposed to the active and participatory nature of the gameplay. It is unclear how one might apply new classical criticism to *Wii Music*, *Drawn to Life*, or *Spore*, where the line between formal element and game mechanic is blurred somewhat. Additionally, new classical criticism does not consider cultural context or related non-game issues.

His second approach is called *psychoanalytic* criticism, which interprets the fictive elements of a game as they relate to the game design using tools like Freudian or Lacanian analysis. Terrel's (2008) analysis of *BioShock* as overlapping death works sabotaged by the insignificance of player death (§ 2-4), id/superego play (§ 5), and Oedipal drama (§ 6-8) follows this mode. A typical example: "After practicing killing your father ... with each Big Daddy, killing Ryan, the protagonist's actual father, seemed like no big deal. But you're not the only one with desires for the mother. Fontaine, ... after splicing up for the first time exclaims: 'This stuff is the mother's milk...' (§ 8)

This style of criticism might be difficult to practice for those without knowledge of psychoanalysis, but it can provide valuable insights into the constructed narratives. Unfortunately, like any model, it can introduce a kind of conceptual pareidolia where the writer crams the game's thematic elements into an existing framework. This process does a better job than new classical criticism at analyzing the cultural significance of a game, but has the same myopia as new classical criticism when it comes to different kinds of player interaction than traditional game mechanics.

Each of these critical modes has had some degree of formalization; but besides these, there are dozens of authors who practice a more freewheeling games criticism based on unique insight and personal background. Writers such as Michael Abbott (2008), Leigh Alexander (2008), Anna Anthropy (2008), Dan Cook (2008), N'Gai Croal (2008), and Denis (2008) all take informal and humanities-driven approaches to analysis. They each have their own unique style, voice, and view, and each is informed by their unique background as journalist, music writer, or gender writer. They write

beautifully, but it is unclear what methodologies they use, if any. Therefore, they are beyond the scope of this survey.

Travelogues, too, represent a movement in experiential review that could be considered criticism. Gillen (2004, ¶ 19) hopes for an emergence of gonzo games journalism and echoes Fuller and Jenkins' (1995) movement towards travelogue. Yahtzee's (2008) video reviews and the writing of Rogers (2008) and others on *ActionButton.net*, not to mention Gillen's (2003) own review of *Deus Ex*, show how extremely personal narratives can frame insightful critique. This is also a valuable class of approaches, and this paper will examine how these personal narratives can be enhanced by formal schools of criticism.

With no clear favorite among the critical models currently used in analyzing games, there seems to be a niche for an approach which is more structured than performative play practices, more flexible than new classical criticism, and easier to execute than the methods proposed by Consalvo and Dutton (2006).

Parametric Criticism

The author agrees with Salen and Zimmermann (2004) that participation in creating a narrative is the defining characteristic of games as narrative systems (p. 382-383). Furthermore, any system of criticism for games must consider the constructed narratives as much as it does the tools that help create them. The importance of the distinction noted by LeBlanc between embedded and emergent narrative grants extra significance to Simons's (2007) implication that all aspects of a game design—the plot, characterization, visual art, and so forth—correspond to some

set of rules, even if only the artifacts are in the game, and not the dynamic rules themselves (External Observers versus Immersed Players section, ¶ 12).

The premises of parametric criticism boil down to three concepts. First, the narrative is a combination of the embedded and emergent aspects of a game. Second, this narrative is constructed through player participation with the different procedural and static elements of the game, including the packaging, loading screens, et cetera. Finally, the degree to which this narrative can be personal is a direct function of how many of the game's rule sets are participatory and how much input is available to the player. These three principles underlie the questions asked by a parametric critic.

An example of a participatory rule set would be a player capability such as combining parts to build a robot; a non-participatory rule set might be a pre-defined plot arc or the visual style of a space in the game. The key insight is that in each aspect of the game, the narrative is constructed by some kind of participation. The question here is whether the participation is by the player to the exclusion of the designers' authorial control, or by the designers to the exclusion of the player's. This state of co-authorship might be unique to games (and the Homeric epic) as a medium.

A game might be conceived of as multiple groups of rules which constrain the possible resultant narratives. For instance, a Japanese RPG such as Square-Enix's *Final Fantasy VI* might encode a group of rules to dictate the actions and outcomes of battles. It may have additional mechanics concerning the purchase and sale of weapons and armor, the means of interaction with non-player characters, the guidelines governing the visual art for each area, the aesthetic rules guiding the plot's progression, and encoded assumptions about how each character responds to the plot's events.

There are easily dozens of such rule sets, most of which are non-participatory. These implicit rules are embedded in style guides and the minds of the creators, and can be uncovered through thoughtful play or through data-gathering techniques like those proposed by Consalvo and Dutton (2006).

Final Fantasy VI does not provide much in the way of participation with the visual or auditory aspects of the game, or indeed with the overarching plot except for one or two points at which the order of events can be rearranged or events can be ignored. However, the game remains a favorite among fans for its strong cast. The cast is considered strong because the designers allowed the players to participate in the optional characterization of each cast member through a variety of means and in basically any order. Square-Enix went even further and paired many instances of character development with special rewards like abilities and equipment to hook into the player's existing participation in the fighting of battles.

The relative amount of participation in characterization versus overarching plot is consistent with the game's themes of the inevitability of evil acts; the fate of the good as emissaries of hope; the impossibility of repairing a ruined environment; and the significance of each individual life, even if the day could be saved without them. The great task laid upon Celes, Terra, and the others can be approached at any time during the latter part of the game, but the player needs to develop the characters in both the game-mechanical and literary sense before sending them off to their epic battle. These same kinds of situations—delaying the plot while characters are developed, or tying the plot movement to character development—happens frequently throughout the game.

In a few brief paragraphs, some surprising insights have been revealed about *Final Fantasy VI* based solely on analyzing where and to what extent the designers decided to allow participation. *Final Fantasy VI* represents only a few slightly divergent stories in terms of actual content, but those stories can be told in an astounding variety of ways. The parametric analysis of degrees of participation makes these results immediately evident in a way that other processes might not.

A version of *Final Fantasy VI* with less participatory and more automatic or pre-scripted characterization would be a much less beloved game. Its characters would *feel* less fully realized, even if the characters were written much more fully and completely. On the other hand, if *Final Fantasy VI* permitted even more participation in characterization while keeping the plot the same, the player's input might conflict with the plot's needs; or at least it could fail to produce the tightly intertwined narratives of romance, family, and love that bind the characters together according to the game's themes. It is therefore clear that the primary design choices of a game are concerned with where and to what extent to allow the player authorial control over the narrative. The answers will depend on the designers' specific artistic and aesthetic goals.

The purpose of the game design—the design of the game as a group of sets of procedural rules and rule-based artifacts—is to shape the narrative. A designer must be aware of the desired scope of constructed narratives in the same way he is aware of the spreadsheets describing the game mechanics and the style guides describing the art, music, and writing. The participation of the player within the rules guides the narrative, and the desired narratives inform the designers' conception of what the play should be.

In summary, the process of parametric criticism consists of identifying groups of static and dynamic rules (even if they are not classically considered game mechanics), determining the sorts and means of participation provided by each rule group, and analyzing the relationships between these rule groups with respect to that participation. The most important paradigm shift in analysis is to treat the less participatory rule sets with the same respect as the more participatory, traditional mechanics. Some useful questions for a critic include: “Does a greater degree of participation in rule group *A* compared to rule group *B* indicate greater aesthetic importance?”; “Does a lesser degree of such participation imply a comparative lack of expected player interest, or potentially an artistic demand to remove control?”; “When multiple rule groups are participated in simultaneously, does that imply causality? Equivalent significance? Feedback? Does it serve to increase the importance of all the involved rule groups?”; and “How and to what extent can the player characterize their own avatar?”.

Macro-level parametric analysis studies the divergence of the constructed narratives between play sessions and players. The specific arguments to be made in a criticism depend on the game or games involved and the writer, but this suite of tools concerns itself with asking questions of how and to what extent the player or players can participate in forming the game’s narrative.

Recent panel and round-table sessions on the topic of meaningful games at the Montreal International Games Summit, as well as personal discussions, suggest that the industry is willing to undertake serious discussions about the role of criticism in game design. Parametric criticism should feel comfortable to designers who accept the premise that the player authors the narrative, and that population is growing by the year.

Appendix: Additional Examples

The measure of a critical language is its utility for analyzing games. Therefore, the rest of this essay will briefly apply this parametric criticism to a classic game and a contemporary mainstream game.

The Legend of Zelda

Nintendo's *The Legend of Zelda* offers several easily identifiable groups of rules, which will be split into two groups by the general degree of interactivity. This first example will reveal a large number of rule sets, but analyze only a few; the critic's notebook will generally be full of rule set examples, but in the interest of brevity only those relevant to the critic's argument will usually be presented.

At the least participatory level, there are the rules of the overarching embedded narrative of rescuing the princess, which the player can only advance in a single giant leap by defeating the end boss. Another such rule set, though a more dynamic one, manages the placement and taxonomy of enemies (it can only be triggered by players, though, not actively played). The game's automatic mapping features work similarly to this monster creation, but with a slightly greater element of participation and more permanence.

Less binary sorts of participation are evidenced in the rules governing the graphical design of the environments and enemies, whose graphics are pre-made but combined in different ways based on the player's actions; the rules behind the music and audio are also combined dynamically through play. At a slightly more explicit level, the player has the option of walking over, stabbing, or using the boomerang on items to

claim them, and he has a similarly discrete set of choices when it comes to interacting with non-player characters.

Finally, there are the more explicitly played rules such as the repeated dungeon-item-boss rhythm which frames the player's narrative. The most significant group of rules at this level is probably the manipulation of the environment as a puzzle, for which there are many mechanical and visual rules: cracked walls can be destroyed with bombs, the Power Bracelet can help push certain objects, the Ladder can cross water tiles, et cetera. In the same vein, many boss enemies are unique puzzles that the player must solve, and each boss presents a unique and fairly highly participatory rule set (since one of the rules is that the actions to perform are not explicitly revealed beforehand). The game's combat proper is more participatory than the boss encounters, since the player has more ways to deal with each encounter, and movement through the game world is equally expressive and free.

Immediately, some key themes have emerged: First of all, this is a game about exploration and adventure, with special attention paid to the environment as a puzzle. "How do I get there?", "What secrets are in this room?", and "How can I break this wall/burn this tree/open this door?" are frequent questions in the mind of the player. These questions emerge naturally through the cooperation of the player and the game in discovering the mysteries of Hyrule. In contrast, the non-violent interactions with people and intelligent monsters are very brief, discrete, and have low degrees of participation, indicating their relative stiffness and lack of interest.

The adventuring rules—exploration, combat, and environmental influence—are reinforced by the similarly puzzle-like boss fights and the low-participation random

monster instantiation to give the impression of a living world that must be colonized and stripped of its treasures. The game's automatic mapping also plays into the concept of exploration by reflecting the player's subtly growing internal knowledge of the world. However, if the mapping were more participatory and required manual cartography, it would compete with the adventuring and combat parts and damage the pace of the game. Additionally, the non-linearity of the dungeon-item-boss sequence is an extra level of participation in that the player can pick an order in which to pursue the game's challenges. This turns the dungeons, bosses, and magic items into elements of the environment. The extra layers of engagement created by building the boss fights and environmental modification on top of the regular combat and movement systems act to reinforce all of these kinds of participation.

The theme of persistent man versus awesome nature (echoed later by *Shadow of the Colossus*) is an even stronger narrative rule than rescuing the princess in *The Legend of Zelda*. The Princess represents the end of exploration, the end of participation, and the end of the game, whereas the battle against nature only ends when the player's curiosity is satisfied. "I saved Zelda" might even be a secondary triumph to "I killed Ganon", and both are less interesting to the player than "I found all eight pieces of the Triforce and the Magic Sword." The journey is the greatest reward.

Another important concept in *Zelda* is the characterization. The Link given to the player is an empty shell with no characterization besides his appearance and his goals to rescue the Princess and find the eight Triforce fragments. It is only through collecting items that he develops as a character. First the player finds Link a wooden sword; then a boomerang, bombs, a raft, a ladder, better swords, shields, new clothing, and other

items. Each acquisition provides a new way to participate with the world and new depths to Link's character. This sense of growing competence is mirrored in the player's increasing skill; by the time the player has collected all the Heart Containers, he might find that he no longer needs them. The player builds Link up from weakness and terror to strength and mastery, and by building Link's repertoire he builds his own. This kind of participatory characterization, even though it is entirely material and pays little heed to Link's emotional state, helps the player engage with the character much more strongly in this coming-of-age story.

This brief analysis was written before reading Superplay's (2003) interview with designer Shigeru Miyamoto. Miyamoto says that "it has always been important that the gamers grow together with Link, ... I have always tried to create the feeling that you really are in Hyrule" (¶ 45). It looks as if the designer's intent has come out clearly: The themes of coming of age and participation in shaping the environment are explicitly mentioned in the interview. These themes are all encoded in the game world's rules and communicated through play, and *Zelda* is a perfect example of why Miyamoto's games are legendary for their clear communication and refined design.

Army of Two

EA Montreal's *Army of Two* is a cooperative-play shooter whose story is grounded in the 21st century emergence of private military corporations (PMCs). The game has not undergone much critical scrutiny, though it has been reviewed extensively. *Army of Two* features one amoral and one slightly-conscientious protagonist handing out plenty of sophomoric humor and ham-handed moral lessons about the nature of war for profit. In short, it feels very much like a contemporary action flick. This game is interesting because it casts the characters explicitly as mercenaries—the relationship between success and wages in games is seldom so cynical—and then pursues that thought to some uncomfortable places. The player can experience the lives of two men who kill for money and pleasure, men who slap high fives after murdering hundreds of faceless enemies and “pimp out” their guns with silver and gold.

Army of Two is composed of a great number of rule sets, of which only a few will appear here. The plot and characterization are defined by a few basic rules. First, according to the embedded plot and characterization, the PMCs are sent in to do dangerous and invisible missions, but their morality is questionable as they are fundamentally mercenaries. The plot is moved by the self-interests of the involved characters, especially the PMC organization's commanding officer who wishes to privatize the US military; the player's only interaction with this plot is to advance it stage by stage. Each mission is a game level, and the player cannot choose when to take a mission. These missions are subdivided into areas and checkpoints, and this division further limits the player's agency. The cast are predefined primarily as evil, amoral

(playable character Elliot Salem), or slightly good (playable character Tyson Rios and dispatcher Alice Murray), and their dialogue and voice acting are also pre-scripted.

One of the few participatory parts of characterization is equipment customization. The player may buy and upgrade guns and masks using money earned from missions, and this allows players self-expression through personal taste in weapons or fighting style. The upgrade system is the bridge between the non-participatory elements of plot and characterization and the more interactive rule groups related to missions.

First among these mission rules, acting as both a mechanical and plot rule group, is the concept that money is won by completing objectives and killing enemies. Also, the environment is full of contextual cues such as gun emplacements, ladders, tall ledges, locations to take cover, and hints to the enemy AI. These hints can trigger combat dialogue such as “He’s behind the soda machine!”. The association of game rules with the player’s interaction with the environment provides additional means of self-expression and participation. The in-mission combat itself is as participatory and interesting as any shooter game.

The cooperative aspects of *Army of Two* are even more interesting than the preceding rules, which are fairly generic among shooters. At the shallow end of participation, the relationship between the two characters can be explored by friendly and rough means of emotional expression—perhaps a fist bump in the former case, or an insult in the latter. This confers no mechanical benefit. Most of the cooperative actions in *Army of Two* are related to combat and movement and cause the players to enter special modes. These modes include parachute and vehicle modes where one player navigates and another shoots, back-to-back firing sequences reminiscent of

action movies, contextual actions such as providing a leg-up onto a high ledge, and a simultaneous sniping mode to take out, for instance, two guards at once. This latter capability is used in some optional puzzles.

Finally, there are two important groups of rules related to how the enemies decide which of the two players to attack: Enemy aggression is systematically balanced between the two player's characters, and one player reaching a high level of aggression may enter an *Overkill* mode where he becomes an unstoppable death machine and the other player turns invisible and may move around undetected.

After identifying the interesting rule groups, it is possible to look at their relationships. It is worth noting that the cooperative aspects of the game relate very loosely to the more solitary rule sets like the plot drivers, the predefined characterization, and the mission structure. This game has transplanted the trappings of a shooter into a cooperative environment, and has only looked at making certain aspects of the combat and a few puzzles cooperative. There is only one puzzle for which the two players must physically separate, and even then they remain in the same room. It is a shame that the cooperative actions were not explored more fully.

The plot consists of a single scheme against which the player characters can do nothing until the final two missions. This can be seen as a fate that the characters are facing as they are manipulated by their shady employer into dreadful act after dreadful act. The mission structure is set up in an inflexible level format, with each level being a job ordered of the players. Each mission is therefore a circumstance in which the protagonists find themselves. After one such mission, the players become wanted for a specific murder, and despite the irony of their revulsion to being called killers, the duo

go to great lengths to clear their names. The player, on the other hand, has no option to accept the accusation or even to choose their characters' motivations for revenge.

This powerlessness over the minds of their avatars is contrasted with the extreme level of control held by the player over the characters' arms and armaments, even down to which stocks and barrels are fitted on their guns. It is clear that the only control these characters themselves have is over the lives of others, and specifically how (not whether) to end them. This could be read as a commentary on PMCs were it not for the ending; Rios, Salem, and Murray joyously set up their own such company. This brings the discussion squarely into the uncomfortable territory of playing as remorseless mercenaries who, even if their wills are good, follow orders and murder hundreds of faceless individuals for the money to buy bigger and better guns—or, as Salem mentions in the second mission, to bet on football games. They can only handle the gravity of their work by trivializing it. Furthermore, this example shows how meaning can be conferred by a game by expressly limiting or removing player agency.

According to the rules of the plot, the duo begin as Army Rangers before being brought along with their commanding officer to a new PMC. Depending on the player, the level of personal discomfort starts very high; the first two jobs are infiltrations of terrorist strongholds in Afghanistan and Iran. The discomfort gradually decreases as the missions become less politically charged, but it can be surprising how unsettling participation in recent American foreign policy actions can be. Adding to this unease is the reduction of the issues to a fight between the amoral and the implied evil, especially given the backdrop of the abuses of public trust perpetrated by Blackwater. Fighting enemies that have actually done wrong to the player is refreshing and feels virtuous in

comparison. A personal interview with a member of the developers' staff suggests that while reviewers graded this discomfort harshly, this feeling was intentional and the ambiguity was well-received by (and familiar to) players with military experience.

Many papers could be written on the framing of the wars in Afghanistan and Iraq in contemporary video games. *Army of Two* would be a great example in such a work, in part because it allows two players to understand what it is to rely on each other and defend a teammate's life. The key insight here is that the reason the game is so uncomfortable is because it asks the player character to pull the trigger and follow orders while leaving the player removed enough from the action to be able to look at it critically. The designers also seem to criticize blind submission to orders when the players kill a target without knowing his identity and must face the consequences.

The cooperative systems in *Army of Two* do an excellent job at reinforcing the buddy archetype. Just as participating in the morally ambiguous characterization strengthens the feeling of distaste for the protagonists, acting to assist and defend your partner makes the characters more sympathetic. This tension between the efforts of two friends trying to keep each other alive and their intentional employment in the world's most morally questionable job is at the center of the constructed narrative.

The relationship the two men hold is not always friendly—like any hyper-masculine relationship, it veers away from emotion and sentimentality and favors competition and mutual benefit. The player explores the cooperative side of the relationship through actions like giving their teammate a leg up or holding a riot shield in front while the partner trails behind. The player can also press a button to trigger a brief cutscene of a high-five, compliment, or similar exchange. The competition between the

two is typified by the plot-driven competition for finding monetary bonuses in the stages and racking up a higher number of kills, as well as by the corresponding competitive relationship action—a brief cutscene of a head-slap, insult, or related activity.

The lives of the two are also deeply intertwined during combat, which is the primary mode of participation with the game. The pervasive *aggro* (short for *aggression*) system borrowed from online games such as *World of Warcraft* is at the forefront of combat to show the players how the enemies' animosity is split between them. The visual aspects of the game also respond to shifts in *aggro*: The enemies' primary target will glow brighter and brighter red as the target's *aggro* increases. When it reaches the maximum, he can enable a special mode called *Overkill* (the name no doubt chosen for machismo) which lets him wander around with infinite ammunition while his partner turns completely invisible. If he is near death and has a high *aggro*, he can play dead and transfer all his *aggro* to his partner. *Aggro* is a multi-layered game mechanic that can tell a lot of stories, even if it is fairly abstract. But *aggro* isn't just a product of firepower and damage dealt—different weapons cause different amounts, and guns can be “pimped” in gold and silver to drastically increase the amount of *aggro* generated. This could be read as expressing a showier personality.

The game's use of purchasable characterization, along with the themes implied by *aggro* and the other cooperative mechanics, shows the mercenary ethos in action: Enlightened self-interest and market-style competition leads to the optimal outcome. Gillen (2007) mentioned that *BioShock* was an Objectivist game (§ 2-3); I feel that *Army of Two* better allows the player to participate in that philosophy, even if he is never given the choice.

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