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Story and Play: Applying Narrative Game Scholarship to Game Design

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Abstract

This paper examines the relationship of narrative to computer games from a design perspective. Over the past three decades, the academic discourse on narratives games has evolved considerably while producing a wealth of serious scholarship. However, the process of narrative game design continues to be an underdeveloped area of study. In this thesis, I review influential scholarship on narrative games and the broader topic of interactive digital narrative (IDN) and attempt to analyze its potential application to the process of design. I examine some of the major works on IDN, explore historical and ongoing debates related to narrativity within games, and offer a synthesis of three core concepts that hold potential for game design. This work is both a heuristic for designers of narrative games and an examination of how the academic discussion on this topic might better serve the same function.

Keywords: videogames, narrative games, narrative, interactive narrative, design, game studies.

Introduction

Computer games present rich and often fantastic worlds populated by imaginative characters. They invite us to embark on epic quests, to slay dragons and save princesses. Such themes are often familiar to us as many games have traditionally drawn from sources such as literature, film, myth, and legend. Yet, beneath the myriad compelling reasons to view games as stories lies a less obvious fact: games are not *necessarily* stories. At least, 'game' and 'story' are distinct ideas. The concept of a 'narrative game' is deceptively complicated—and controversial. The interaction between game and narrative has been a popular topic of study over the last three decades and a large section of the discussion has centered around a debate over whether video games manage to tell stories at all. To the casual observer, a player, or even a game reviewer, the interchangeable use of 'game' and 'story' may be of little consequence. However, for the designer intent on producing narrative games, such ambiguity is extremely problematic. The intent of this paper, therefore, is to provide a basic framework for understanding the relationship of story to computer games as it relates to design.

Given the rich body of work on this topic, I do not propose a new grand theory of video game narrative. Rather, I aim to synthesize influential scholarship on this topic in order to analyze its potential application to the process of narrative game design. In other words, my intent is not to 'reinvent the wheel' but to put it to work. Based on the relative scarcity of narrative game scholarship which addresses the gap between theory and practice, more work on this topic is crucially needed. Thus, this work is both a heuristic for informing computer game design, and an examination of how the academic discussion on narrative games can better serve practitioners of this artform.

Both games and stories are highly complex topics, studied across a wide range of fields and disciplines. Yet, no universally accepted definition for either term exists. The broad interest in these topics is reasonable, both being ancient and seemingly fundamental aspects of the human experience. The complexity of these concepts becomes further amplified when considering them in conjunction, as *narrative games*, because a narrative game is not simply a game with a story but an extremely varied integration and reimagining of both ideas. Scholars have rightly identified this phenomenon as a rich topic for study. However, a meaningful interaction with such a dense construct cannot be carried out without a clear and focused intent. I approach the discussion of narrative games through a production lens. As a game creator, my interest in computer games is decidedly more generative than evaluative. I do not take the stance of a philosopher, theorist, or art critic, but that of a practitioner. As a game creator, I look to understand how narrative operates within computer games in order to solve design problems. This principal informs my interaction with the related scholarship. For instance, a simple standard for evaluating such content is to identify whether it offers coherent, usable ideas that can be applied to design decisions. Based on my own experience as a game designer, I have found the academic discourse on narrative games to be rich in interesting ideas but incredibly demanding in terms of interpreting these concepts into usable design tools. A heavy onus falls on the designer to approach this scholarship with a flexible mind, to be able to interpret and adapt these relatively new ideas to their own personal design ethos.

What constitutes effective game design varies as games take many forms; they may be commercial products, educational tools, or any number of other possibilities. My focus is on their potential for artistic expression as storytelling media. There is nothing, of course, precluding an artistic narrative game from being educational or commercial. However, this is a

useful distinction for outlining design objectives. For example, a prime metric for measuring the success of a commercial game is its financial performance. The success of an educational game, on the other hand, correlates to its value as a teaching tool. While story may contribute to either outcome it is not an essential design component in these cases. By comparison, the success of an artistic narrative game must be measured by its ability to tell stories in a way that is consistent with the designer's intent.

The first challenge then, in designing a narrative game, is ontological. We must determine what we consider this term to mean. There is not one answer to this problem. However, scholars have offered multiple perspectives on this topic. I have selected several major works, based on their prominence within the scholarly discussion on narrative games, as well as a number of less cited works which offer alternative insights and contemporary perspectives on this field of study. I look to the scholarship, rather than games themselves, for useful insights into the phenomenon of narrative games and offer an analysis and comparison of their potential application to the process of design. While most of this scholarship does use games as a primary text for analysis, I have intentionally avoided this practice in order to focus on outlining a roadmap that aids designers in navigating this historically challenging discussion. Additionally, as I approach this topic with a heavy emphasis on the expressive and artistic potential of narrative games, I hope to encourage a broader thinking about the possibilities that this artform presents to designers beyond what has already been demonstrated by other practitioners.

Interactive Digital Narrative

When considering narrative in the context of computer games, we must recognize this property as distinct from other forms of narrative. Video games can tell stories and they do this

in ways that a novel or film do not—in fact, cannot. As interactive digital artifacts, narrative games challenge traditional definitions of narrativity. They are not alone in this regard. There are other forms, such as interactive documentaries or digital art installations, which are similarly capable of telling stories in non-linear or even emergent fashion. Netflix's experimental *Black Mirror: Bandersnatch*, for instance, allows viewers to alter the course of the film's story similar to a 'choose your own adventure' style of book (Slade). While such innovations are beyond the scope of this study, it is worth noting how the discussion of narrative games fits into the broader study of interactive digital narratives, or IDNs. I borrow this term from Christian Roth and Hartmut Koenitz, teachers of IDN design at the Utrecht School of the Arts and scholars whom I take immense inspiration from in my consideration of IDN scholarship (Roth 19). Below, I review some of the influential scholarship on IDN, including ongoing debates, and offer an examination of several core concepts that hold potential for narrative game design.

Hamlet on the Holodeck

Many consider Janet Murray's *Hamlet on the Holodeck* among the foundational texts on this topic. Since its original publication in 1997, this work has featured prominently in the scholarly discussion on narrative games. Drawing on her dual background in the humanities and computer engineering, Murray argues that computing allows for a new form of storytelling. Using an historical analysis of narrative media in comparison to emerging forms of digital content, the book provides foundational philosophy and vocabulary for the study of IDN. As the title suggests, *Hamlet on the Holodeck* is quite forward thinking in its analysis of the narrative affordances that computing provides. Murray uses the example of the 'holodeck' from the *Star Trek* franchise as a kind of holy grail for IDN design. It is, as Murray puts it, "a universal fantasy machine, open to individual programming: a vision of the computer as a storytelling genie in the

lamp" (Murray 17). While she acknowledges that the realization of this technology is still far off, she considers the possibility as a logical goal in the evolution of narrative media. Among other advancements such as 3D film and virtual reality, computer games factor heavily into Murray's appraisal of the technological developments which she sees as "harbingers of the holodeck" (Murray 33). She describes four essential properties of digital environments that work together to produce a literary effect within an IDN. The 'procedural' and 'participatory' properties create the interactive quality of the experience. The 'spatial' and 'encyclopedic' properties contribute to the immersive effect experienced by the interactor, or in the case of games, the player (Murray 87). The crux of Murray's argument is that, when designed correctly, these elements work together to produce an enjoyable sense of agency for the player/interactor. Immersion and interactivity, she argues, reinforce one another. An immersive environment prompts interaction with it and this interaction creates a sense of agency which in turn deepens the feeling of immersion. Murray refers to this phenomenon as the "Active Creation of Belief" and offers this as a corrective to the more traditional concept of 'suspension of disbelief,' which she finds too passive to describe the interaction experienced within IDNs (Murray 113). Murray's work is extremely ambitious and a prominent fixture in both historical and contemporary IDN scholarship.

Rules of Play

While the idea of immersion is not specific to games or to the broader idea of IDN, the way in which these experiences create immersion often is. Interactivity is a property not found in traditional forms of media (e.g. film, novels). For Murray, and others convinced of the narrative potential of computer applications, this is a defining feature of IDN, one that allows the medium to tell stories in a way that other forms cannot. This argument has been taken up by a host of other scholars examining games as stories and has evolved considerably since Murray's initial

exploration of the topic. For example, in their expansive textbook on game design, *Rules of Play*, published by the MIT Press in 2010, Katie Salen and Eric Zimmerman take a more concrete and design-centric approach to the study of narrative games. Their view of games as 'designed systems' is anchored by a core concept which they refer to as 'meaningful play.' According to the authors, this phenomenon occurs when "the relationships between actions and outcomes are *discernable* and *integrated* into the larger context of the game," an effect they consider to be the primary goal of game design (Salen and Zimmerman 34).

Salen and Zimmerman not only share Murray's enthusiasm for the untapped potential of narrative within computer games but acknowledge and respond to her work. In fact, it is evident throughout their text how Murray's work, as well as the considerable body of scholarship that followed, was instrumental to the authors' exploration of 'games as narrative play.' Working from the narrative framework provided by literary theorist J Hillis Miller, the authors examine elements of situation, character, and form to expand upon pre-existing models of 'embedded' and 'emergent' narrative (Salen and Zimmerman 379). This distinction between crafted, or pre-generated, narrative incorporated into gameplay, versus story that emerges through a player's interaction with procedural systems had been explored previously by Murray and others, including media scholar Henry Jenkins.

Game Design as Narrative Architecture

In his 2004 paper, "Game Design as Narrative Architecture," Jenkins responds not only to Murray's work, but that of scholars critical of the study of games as narrative media. He proposes a compromise between these two positions in the form of a method "that respects the particularity of this emerging medium—examining games less as stories than as spaces ripe with narrative possibility" (Jenkins 119). Much like Murray, Jenkins views spatiality as a defining

characteristic of narrative games but takes this idea a step further by proposing "an understanding of game designers less as storytellers and more as narrative architects." Jenkins compares narrative games to a tradition that he calls "spatial stories," narratives driven in large part by the worlds which they present (Jenkins 119).

Among the four modes of narrative games that Jenkins identifies, the 'embedded' and 'emergent' concepts are mostly consistent with, and in many ways foundational to, Salen and Zimmerman's exploration of the same ideas. Jenkins' concept of 'evocative spaces,' on the other hand, describes a design objective where a game relies on preexisting stories or genre to supply the narrative content of its interactive environments. His model of 'enacted' stories builds on this idea by offering an alternative design possibility, one where the player might act out the narrative by taking on the role of a character and progressing the plot, perhaps in a nontraditional manner, while moving through virtual worlds. While distinct in their presentation, these ideas are also present in Murray's work. What is notable is that Jenkins chooses to explore these concepts within a much more constrained scope than Murray's ambitious projections of interactive narratives in the distant future. In doing so, Jenkins manages to guide the discussion on narrative games into a more specific and less controversial playing field.

Narratology vs. Ludology

There are clearly many ways of comprehending games as narrative structures, as evidenced by the scholarship on this topic. Yet, to take the concept of narrative games for granted is to ignore the complexity of the issue. Counterpoints have been offered which refute the classification of games as narratives. Intuitively, these positions may appear to offer little value for the designer already convinced of the narrative potential of computer games. On the

other hand, by presenting plausible reasoning for compatibility concerns between games and stories, these arguments may benefit the designer by challenging or reinforcing our preconceived notions of narrative games.

Counterpoint

One of the most stark rejections of Murray's work was provided by Jesper Juul in his 1999 paper, "A clash Between Game and Narrative." Not mincing words, Juul asserts that "the computer game for all practicality *can not* tell stories [and] the computer game is simply not a narrative medium" (Juul 1). Interactivity, a feature which Murray and Jenkins see as an essential aesthetic of narrative games, is problematic for Juul: "When something is interactive - like a game - the interactivity has to be now, when the player makes a choice. But the narrative has a basic trait of being about something past" (Juul 3). His position extends beyond the idea that games and stories are distinct concepts to the assertion that these are in fact mutually exclusive/incompatible constructs. Juul's thinking has been described as "dichotomic" for this reason because he views narrative as a fundamentally fixed structure as opposed to the open nature of gameplay and therefore believes that narrative can only serve a minimal, ornamental role within games rather than being an integral and meaningful part of the whole (Koenitz 6).

Juul's perspective is representative of early attitudes toward game narrative in the field of ludology, or 'game studies.' Murray has reflected that this debate stemmed partly from "academic turf wars between the European departments of Narratology and the new practitioners of Game Studies, who were asserting their autonomy by identifying games as a separate field." Because ludologists attempt to understand games as systems rather than stories, the dispute over whether games can/should be viewed as narratives has come to be known as the narratology vs. ludology debate and is still a prominent subject in modern game scholarship (Murray xii).

Conflicting Methodologies

To designate game scholars into binary camps of either narratology or ludology is overly simplistic and fails to account for the extremely varied positions of researchers within this field. Unfortunately, that is exactly what occurred during the most formative years of the academic discourse on narrative games making this historical divide critical to understanding the state of modern IDN scholarship. For example, it has been suggested that this split has contributed to a deficiency in IDN scholarship, particularly work related to narrative game design, which has greatly increased the challenge of establishing IDN design conventions (Koenitz, et al. 109). Attempts by scholars to establish a clear framework for understanding and interacting with game narrative are ongoing. However, since Murray's early work on the topic, scholars have often pointed to an urgent need for a new, non-traditional critical approach to the medium.

In response to criticism that her work does not rely wholly on established methodology, Murray claims that this was conscious choice, describing her book as "a manifesto and a design blueprint for a new aesthetic practice," and rejects the idea that she is a traditional narratologist (Murray xi). Critics of early attempts to analyze game narrative, such as Espen Aarseth, also question the application of preexisting critical theory to this medium. In 2003, he reflected on the state of narrative game scholarship: "Instead of treating the new phenomena carefully," he says, "and as objects of a study for which no methodology yet exists, they are analyzed willy-nilly, with tools that happen to be at hand, such as film theory or narratology, from Aristotle onwards." Aarseth's ultimate assessment was that "the cautious search for a methodology, which we should have reason to expect of reflective practitioners in any new field, is suspiciously absent from most current aesthetic analyses of games" (Aarseth 1). Such an indictment speaks not only to the broad, systemic dysfunction within the field at that time, but to the challenge that is still faced by

modern scholars of narrative games. In the absence of established theory, specific to game analysis, Aarseth has proposed an empirically based methodology for game studies in order to develop such theories. He does not rule out interacting with traditional critical practices entirely but notes that "often non-theoretical, critical observations can contribute more to the field than a learned but theory-centered discussion" (Aarseth 7). While he is critical of attempts to analyze games through a narrative lens, he takes fault more with the methods being employed than with the idea of game narrative itself.

Reconciliation

Some of the more promising scholarship, in terms of its applicability to narrative game design, can be found within work which attempts to bridge the gap between the practitioners of ludic, or non-narrative game analysis, and more narrative-centric game scholars, including narratologists. Jenkins' work, for instance, exemplifies this perfectly. Not only does Jenkins acknowledge the work of both Murray and Aarseth but he builds upon it, synthesizing ideas from both sides of the debate into a constructive middle-ground position. As another example, Jim Bizzochi has taken Jenkins' work even further by deconstructing the narratology/ludology debate as a fundamental misunderstanding and is able to elucidate Murray's work through the application of more traditional critical theory.

Bizzochi proposes a rejection of a grand narrative arc within game analysis and instead offers a method for focusing on more particular narrative elements. "These narrative components," he claims, "character, storyworld, emotion, narrative interface, and micro-narrative—are useful channels for focusing a more accurate analysis of the role of narrative within the design of the game and the experience of gameplay (Bizzochi 1). Besides being considerably more practical than many of the more extreme stances taken on this topic,

Bizzochi's approach is also more productive. By bridging the divide between story and game, compatibility between a broader range of game scholarship becomes possible, allowing for a richer synthesis of ideas. From this landscape, serious contributions to the study of narrative games have emerged. From attempts to produce useful terminology/vocabulary (Ryan 45), to theories on narrative produced by simulation (Walsh 72), the framework for understanding narrative in games continues to evolve.

Narrative Game Design

Despite the progress made in the conversation about narrative games, modern scholars of this topic still point to deficiencies in IDN design knowledge. Though IDN continues to be an intensely studied topic, the design of IDN artifacts such as games is little understood as the practice is rarely documented or reported in any sufficient capacity (Carstensdottir 1). Unlike the study of other narrative forms like film or theater, game scholarship has yet to catalog an extensive body of established design conventions for narrative games (Koenitz, et al. 109). So, while the practice of IDN analysis has come a long way, the application of this work to IDN design is still an underdeveloped area of study.

Narrative game design has been called a secretive art because it is practiced by a relatively small number of people who are typically self-trained. Furthermore, because so much of the knowledge that exists on this topic resides within the commercial space of game development, much of what is known about this topic is fiercely guarded by financial interests. This scarcity of available knowledge is problematic for designers because what we do have access to, such as first-hand accounts from game designers, is often overly specific and relates too closely to the design of individual games. On the other hand, what is commonly offered by

the scholarship on this topic is quite abstract and thus difficult to apply to the practice of design (Koenitz, et al. 108). Nonetheless, such work holds immense potential if we are able to isolate and articulate the ideas found within into understandable and usable design tools.

Scripting the Interactor

One idea that has been cited as an example of a difficult, high-level concept is Murray's notion of 'scripting the interactor' (Koenitz, et al. 108). It is true that this material is not easily accessible. Murray's exploration of interactive narrative is expansive, building on logical and narrative theories which predate computing and stretches into the possibilities of the distant future. The question is, is it possible to disentangle the core ideas of this concept from the grander argument and, if so, are we left with a usable tool for narrative game design? Broadly speaking, this concept refers to constraining a player's level of interaction to a degree that the game designer can anticipate, and thus design for, the largest number of possible outcomes. However, in order to derive any practical design insights from this we need to examine Murray's 'procedural' and 'participatory' properties of digital environments. In other words, if we are going to design games from the perspective of restricting interaction, then we need to understand the ways in which interaction occurs within games.

As digital environments, games are inherently procedural. The entire experience is created, according to Murray, through the computer's "ability to execute a series of rules." In this sense, the computer acts as an engine, but its behavior is solely dependent upon the predefined logic provided by the programmer. "To be a computer scientist," says Murray, "is to think in terms of algorithms and heuristics...to be constantly identifying the exact or general rules of behavior that describe any process, from running a payroll to flying an airplane" (Murray 88). This is a key point because while the computer is capable of producing wildly complex and

dynamic experiences it is limited by the programmer's ability to reduce such phenomenon to a system of rules, or *procedures*, that it can follow. Another defining property of computer games is the fact that they are participatory. In other words, their rule systems allow them to respond to player input. "Just as the primary representational property of the movie camera and projector is the photographic rendering of action over time," Murray explains, "the primary representational property of the computer is the codified rendering of responsive behaviors" (Murray 90). The input-and-response relationship which occurs between the user and the program is itself part of the procedural rules created by the programmer. Together, these two elements, the procedural execution of rules, and a system within those rules of interpreting and responding to user input, create the phenomenon of 'interactivity' as we understand it within the context of digital experiences.

While the procedural aspect of game design requires an understanding of the rules that govern known processes (e.g. gravity or lighting), the participatory aspect presents an entirely different challenge because it requires rules that govern inherently unknowable interactions between the player and the program. This makes the task of storytelling within a game particularly difficult as the more choices, and thus agency, a player is afforded, the less certain the designer can be that their experience will conform to any intended dramatic or narrative effect. In many senses, this is the heart of the objection to narrativity within games posed by scholars such as Juul. Through Murray's model, there is an answer to this dilemma: provide agency to the player but do so within a framework that allows the designer to adequately predict how it will affect their experience. However, in order to provide meaningful choices, that is decisions that go beyond merely choosing between branching paths (i.e. the 'choose-your-own-

adventure' style of narrative), the restriction of the player's actions must occur within an understandable context.

One way to contextualize the boundaries of a player's agency is to use pre-existing narrative conventions that are already known to the player and to assign them a role which they understand. For instance, as a hero in a fantasy setting who is tasked with slaying a dragon and saving a princess, the scope of the player's possible choices becomes drastically narrowed but, rather than an arbitrary restriction of agency, this instead becomes narratively meaningful. In this sense, the story provides a level of necessary restriction needed to constrain the player's participation to a more predictable degree, allowing the designer to better anticipate, and therefore control, the outcome of their experience. By engaging the player to comprehend the limitations of their agency as an understandable aspect of their role within the game's story, the game trains them to interact through a system of known rules.

Spatial Storytelling

There is considerable overlap between Murray's ideas on narrative games and the theory of spatial storytelling proposed by Henry Jenkins. By simulating physical spaces that are familiar to us because of their use in other narrative formats, the designer is able to considerably constrain the role of the player (e.g. exploring a dungeon, escaping a maze) in a way that is dramatically coherent. Even the most cursory examination of published game titles would speak to the prevalence of this technique in game design. As Jenkins notes, the most commonly used story elements in games tend to be those borrowed from fantasy, adventure, and science fiction, along with other genres which are equally notable for their focus on world-building and storytelling that is heavily reliant upon physical spaces (Jenkins 122).

The observations of Murray and Jenkins offer us considerable insight into the role played by digital environments in the production of narrative experiences within games. In his model of 'evocative spaces,' Jenkins compares video games to amusement park attractions: "Such works do not so much tell self-contained stories as draw upon our previously existing narrative competencies. They can paint their worlds in fairly broad outlines and count on the visitor /player to do the rest. Something similar might be said of many games" (Jenkins 123). He views this approach as consistent with the modern landscape of transmedia storytelling which tends to de-emphasize the importance of a completely self-contained story in favor of considering works within a broader context of other narrative media (Jenkins 124). This observation appears even more appropriate today, in the age of the Marvel Cinematic Universe, than it did in 2004. "In such a system," says Jenkins, "what games do best will almost certainly center around their ability to give concrete shape to our memories and imaginings of the storyworld, creating an immersive environment we can wander through and interact with" (Jenkins 124). What is interesting in this model is that it proposes the possibility of games existing as narrative experiences not because they tell stories in a strictly traditional sense but through their relationship to a wider, cultural understanding of story. In this sense, games appear to fit into a long tradition of cross-textual storytelling, especially when we consider the kind of vast narrative economies employed throughout Greek mythology and even modern filmmaking.

What seems peculiar to IDNs, by comparison to other story forms, is that they do not seem to tell stories so much as allow us to experience them in a way that is both immediate and still somehow bound to a crafted structure of fictionality. Jenkins' model of 'enacted stories' explores the prospect of games telling stories by allowing players "to perform or witness narrative events" (Jenkins 124). Performance, in this sense, might relate to the aforementioned

idea of dungeon exploration or a more specific objective (retrieving the golden fleece, perhaps). In each case, the player is presented with both a virtual space (storyworld) and a role within that space (an objective). We can think of the narrative arc in such a game in terms of the player's progression through that space and towards their objective. While the player's experience may not conform tightly to traditional narrative ideals, it nonetheless can be read as a story. As Jenkins puts it, "Spatial stories are not badly constructed stories; rather, they are stories that respond to alternative aesthetic principles, privileging spatial exploration over plot development" (Jenkins 124). By considering story outside the limitations of traditional models of closed narratives, designers become empowered to explore the unique potential of games as narrative experiences.

Embedded and Emergent Narrative

Designing narrative roles for players to perform within virtual spaces is an effective way to produce a sense of story within a game. Whether or not that story unfolds according to a preconceived vision is another matter entirely. On the one hand, a game may present a story that is tightly plotted, presenting a clear beginning, middle and end, consisting of scripted plot points not unlike what is found in traditional narratives from books or film. On the other side of the spectrum, a player could encounter a story on their own terms that is wholly unique to their experience of playing the game, one that manifests from their own play rather than from the imagination of the designer. Jenkins refers to these modes of narrative as 'embedded' and 'emergent,' respectively, and Salen and Zimmerman explore these concepts in depth within their framework of 'games as narrative play.'

Embedded narrative, according to Salen and Zimmerman, "is pre-generated narrative content that exists prior to a player's interaction with the game. Designed to provide motivation

for the events and actions of the game, players experience embedded narrative as a story context" (Salen and Zimmerman 383). This description encompasses what we can think of as the broad narrative frame of the game. This includes the genres, settings, characters and predefined roles outlined by Murray and Jenkins in our previous examples. This content is static, in the sense that it exists independent of user input. Though players experience this content through interaction, or gameplay, it exists independently from user input. Because of this, embedded narrative affords the designer the greatest amount of control over the game's story. Devices like cut-scenes, voice-over, and text-based narration can often present story in similar ways to traditional, linear narratives. However, because interaction and agency are fundamental components of gameplay, much of the player's experience cannot be mediated in the same way as embedded narratives. Most of the moment-to-moment narrative experience within games is emergent because player interaction creates unpredictable outcomes (Salen and Zimmerman 383). In the case of the dungeon exploration example, while the player is presented with the embedded narrative elements of the gameworld (the dungeon) and their role within it (adventurer), how they choose to navigate that world, that is, the path that they take through the dungeon, and how they choose to perform their role (e.g. cautiously, aggressively) constitute an emergent component of the narrative.

Emergent narrative is possible because games function as complex systems (Salen and Zimmerman 383). In other words, games allow for interactions that are impossible to predict. The degree to which the player's experience, and thus the overall narrative of the game, becomes unpredictable can increase exponentially depending on the complexity of the game's systems. For example, while a dungeon within a game may present a finite number of possible paths a player might travel, without restricting the player to traversing any of these paths in a linear

fashion, their overall path could take any number of forms. Furthermore, game environments are not restricted to human design. That is, it is entirely possible that the dungeon, in our example, could be procedurally generated, constructed through elaborate algorithms and game rules which employ random number generators and thus present a virtually limitless number of potential outcomes. The same can be true for all of the elements that make up the narrative components of any game. However, it is easy to see how emergence complicates the job of the game designer, particularly when they are intent on creating a narrative experience. It is not surprising then that, as Salen and Zimmerman point out, nearly all games employ some combination of embedded and emergent elements (Salen and Zimmerman 385). While both approaches offer unique utility to the game designer, it is unlikely that either will provide a satisfying narrative experience without the presence of the other, at least in some capacity.

Applying Theory to Practice

Taking the literature discussed here in mind, we can return to the question of what practical utility it affords the designer of narrative games. While the concepts presented are in no way an exhaustive exploration of all available knowledge on this subject, they do represent some key discussions on narrative game design and provide a foundation for thinking about how such knowledge may inform the design process. One significant insight we can glean from this conversation is that there is clearly no consensus on how best to approach the topic of narrativity within computer games. As we have seen, there are compelling arguments which deny the phenomenon entirely. What does seem to be generally agreed upon is the idea that games do not conform to traditional models of narrative theory. This is itself a helpful tool for a game designer because, while there is not an agreed upon solution to the problem, it does eliminate a significant number of possible design approaches. In other words, it suggests that one cannot approach

narrative game design from the perspective of a novelist or filmmaker. That is not to say that certain design conventions from other media cannot translate to game design, but only that some other theory specific to the medium will be required to ultimately achieve a satisfying narrative effect within an interactive digital environment.

Opinions vary on the topic of media-specificity in narrative games. Some clear, distinctive properties do stand out. For example, it is difficult to argue with Murray's assessment that computer games are both procedural and participatory. Likewise, it is apparent that these properties are absent from traditional narrative forms. Despite shortcomings regarding available knowledge on narrative game design, there is still a wealth of scholarly work which outlines the unique contours of the medium from various perspectives. There is considerable variance among scholarly approaches to the topic. This is understandable given the nature of game studies; it is still a relatively new field and one that has traditionally attracted scholars from varying backgrounds. We have also established that the unique properties of the medium necessitate new and often experimental theory. However, despite these variances, we can find a high degree of compatibility within the available scholarship. For example, Murray's concept of scripting the interactor can readily be applied within Jenkin's model of spatial storytelling as well as Salen and Zimmerman's models of embedded and emergent narrative.

Using the concepts outlined in this research, we can begin to think about their potential for direct application to the design process. For instance, consider the most preliminary stage of narrative game design: developing a basic premise for a narrative game. We know that computing affords us countless possibilities in terms of what kinds of experiences we can create within digital environments. We also know that, in order to achieve a satisfying narrative effect,

we must narrow those possibilities to experiences that the designer can maintain a considerable degree of control over while still maintaining the fundamental component of interactivity.

Narrative as a Design Tool

Our choice of story has a large bearing on the overall design of a game. We might consider how different genres of story may allow us to constrain the player's agency in ways that are both helpful to the designer and interesting to the player. For example, assigning the player the role of a god, free to do as they please may in fact be quite interesting for the player. At the same time, we can also anticipate a high expectation of agency from such a role, creating a difficult task for the designer in terms of both being able to predict the players experience as well as fulfilling the many requirements inherent to such an experience. The latter issue is particularly problematic from a production standpoint, requiring a tradeoff between richness of content and sheer production hours. On the other hand, the player could take on the role of a castaway, shipwrecked on a desert island. The designer may be challenged to render this into an interesting experience for the player, but they would certainly have a much higher degree of control over the player's experience and a considerably more focused design scope.

If we think of a game's story as more than ornamental, and instead integral, to its overall design, we can begin to understand narrative as a powerful design tool. We might consider the technical aspects of our game, the mechanics and procedural rule systems, as serving or otherwise facilitating the narrative experience of the player. However, we can just as easily invert this dynamic. Instead of choosing a story based on what is narratively interesting and then building our game systems around this, we could instead choose stories based on what they offer the game *mechanically*. Returning to our hypothetical castaway premise, let us imagine that the main character, which the player will be taking on the role of, has a professional background.

How do we decide what this is? We can take the story-first approach and think of some exciting possibilities such as a soldier or a spy. These are narratively interesting choices which also lend themselves to some very popular game mechanics (e.g. combat, stealth). Conversely, we could consider some alternatives which may be less obviously exciting but afford us different mechanical possibilities. For example, while combat is a ubiquitous element within games, this is not always the case. Perhaps the designer is less interested in building their game around violent confrontation and instead chooses to focus on the experience of overcoming disaster and environmental constraints. In this case, a shipwright might better suit the gameplay by contextualizing mechanics like shipbuilding and sailing. Neither approach is, of course, wrong. Either direction can inform design decisions and so it is only a matter of preference, but it is worth considering how each strategy might produce radically different results.

Environment as Story

Another utility for game designers lies in the consideration of how a game's setting might allow for environmental storytelling. In the case of the desert island, not only do we have a manageable space that the player is confined to in a narratively plausible way, but we also have a space that is, as Jenkins' might say, "ripe with narrative possibility" (Jenkins 119). We can assume a certain degree of familiarity with this setting from its use in other media and are therefore able to draw from a rich collection of genre tropes (pirates, buried treasure, ancient curses, mysterious natives, etc.) without needing to provide a large amount of context. In fact, such a setting, sufficiently realized, may require very little storytelling—at least, in the traditional sense—in order to provide a satisfying narrative experience.

There is a wealth of spaces found in other media that a designer might draw from. That is not to say that they need to. Games allow designers to engage in original world-building as much

as any other medium. While established environments are useful for their inherent narrative potency and evocative nature, wholly original worlds may produce an even deeper sense of wonder and exploration for a player. This may be challenging as the designer will be tasked with deep consideration for how the player will perceive these worlds as opposed to more familiar, proven environments. However, by understanding how players interact with virtual environments and the processes by which these spaces create a narrative effect, the designer is better prepared to face this challenge.

Procedural Storytelling

When designing a narrative game, the designer could choose to embed a familiar linear narrative into it by placing cinematics or text blocks between sections of gameplay. This is a strong choice for the designer who is intent on telling a precisely crafted story. Alternatively, it is also possible to allow the player to decide how the story plays out and even what kind of story it is. Rather than developing pre-scripted story elements, the designer could instead focus on building the storyworld and the procedural systems that support emergent narrative. In the same way that we can understand narrative as a tool for design, we can also consider how the mechanical properties of a game might serve as powerful narrative tools.

We previously explored the challenges inherent to affording a player an extreme degree of agency by placing them in the role of a god. Such a prospect undoubtedly poses serious problems to the designer. Yet, solving problems is precisely what a designer does. In this case, we can outline the problem rather easily. By promising the player an experience in which they are free to perform a vast range of different actions, we are forced to account for a potentially limitless number of possibilities. Even with immense resources, such as what might be available to designers of AAA titles, this task would still be more demanding than what is humanly

possible. Fortunately, the computer allows us to transcend this limitation. While a brute-force approach, in other words, accounting for all possibilities and pre-generating content for each event, is virtually impossible, this does not prevent us from designing elaborate, procedural systems that might do this work for us. In so many ways, this concept of emergent, procedural storytelling is one of the most powerful tools available to designers of narrative games because it allows us to create ambitious stories of immense scope that would otherwise be impossible.

Conclusion

The theoretical models explored here provide designers a framework for understanding the dynamic relationship between narrative, procedural game systems, virtual spaces, and player interaction. In doing so, the ideas I have presented serve to inform design strategies by allowing for compartmentalization and prioritization of different game elements based on media-specific narrative models. Narrative game design poses unique challenges for practitioners and scholars alike. The subject is deceptively complicated and the discussion has been historically fraught with confrontation and disagreement. However, within the limited cross-section of influential scholarship reviewed here, there is an apparent wealth of valuable concepts with demonstrable application to narrative game design. The nascent nature of these works does require some flexibility and creativity on the part of designers looking to put these ideas into practice. However, without any foundation for understanding how storytelling works differently in digital environments than traditional forms of media, the designer is at a distinct disadvantage when attempting to achieve a narrative effect through interactive computational systems. What is clear when interacting with the discussion on narrative computer games is that the craft of storytelling, in this context, must extend beyond traditional understandings of narrative and into the realms of computer science and experimental theory. What seems equally evident is that the task of

designing narrative games must begin not only with the belief that games can *tell* stories but a consideration of the complex *interaction* between story and play.

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