

Desire versus Destiny: the question of payoff in narrative

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*Heaven from all creatures hides the book of Fate,
All but the page prescribed, their present state:
From brutes what men, from men what spirits know:
Or who could suffer Being here below?*

-- Alexander Pope (Essay on Man. Epistle i.)

To pit desire against destiny in narrative is like pitting fire against water -- beyond their elemental nature, there is little by way of similarity to bargain about. Desire is an unconstrained flight; destiny is a straight drive along a paved road.

Nevertheless, the same series of events can be interpreted as manifestations of either desire or destiny, depending on the philosophical bent of the observer. The philosophy of the Universe is harder to discern. What underlying model is at work in the space-time continuum? Consider the paradox of light: some experiments reveal that it behaves like a particle; in others, it behaves like a wave. Is it one or the other? Or are wave and particle both just point-of-view perspectives on another true thing, a "wavicle" that manifests the properties of both?

The presence of Destiny does not eliminate the presence of Desire, it merely thwarts its ability to determine Consequence. Given destiny, we soldier on with attitude to a known or unknown end that has been designed for us by some higher-order being or machine. In contrast, desire engages our imagination, leading us on to future action whose implications we can barely consider. Here, success is coupled with control -- we can "grab the golden ring," we can "have it all." But what is all?

Often in narrative, as in life, desire does not yield what we had expected; still, we must forge ahead to do what comes next. In the case of a character, this means taking the next action, even if this "action" is merely to wait. In the case of a recipient -- reader, listener, or watcher -- this means she must continue receiving, reading the next line, staying tuned to the same channel, remaining in the same seat.

As recipient, our only other choice is to shift course. Closing the book, switching the channel, or leaving the theater signals a retreat -- but the retreat is not total. We cannot turn back the clock and reuse that time spent. We cannot erase our memory. We live according to the rules and constraints of temporal mechanics, a scientific cousin of destiny.

Is there another alternative? What could happen were desire to win? If we desire to act on the narrative itself and are able to, what does this mean? Can we shift the course of narrative and continue on our journey? How will the narrative end? Can we go back in time and do something different to change "history?" How do we recover from a digression?

Situating the receiver in a responsive narrative world is both a need and a challenge. In this paper, we first examine narrative as a tool for social learning, and make the case that "responsive" narrative has become a social need. We then examine narrative from a structural perspective. Here we argue that Time is of the essence, and explore representations and reasoning methods for the various workings of storied

time. Finally, we propose some possible models for "responsive" and "generative" narratives and examine how they mind creation, exchange and control.

Surrogate Experience: responsive narrative as a social need

"to exist historically is to perceive the events one lives through as part of a story later to be told."
-- Arthur Danto

Storytelling relies on the combined human strengths of memory, imagination, and communication. The forms and methodologies of storytelling allow us to sift through and make sense of happenings in our own lives and in the lives of others. Whether drawn from representations of reality or shaped as fantasy worlds, stories tap into and represent the collective psyche of our culture. For the human being, story-making and story-listening are both a pleasure and a privilege.

Our earliest records of human exchange indicate that story-telling and story-making served the function of communicating the state of the world, events, practices, methods, and ideals. Ultimately, stories also provide a particular society with "life lessons." Who controls the lesson plan? How does it function within the spectrum of destiny and desire? And, how does the audience -- be it one person or many -- "find" the narrative?

Stories are redescriptions of the world. They are expressions shaped by someone or some group for communication to someone else: a loved one, an acquaintance, a large and faceless audience. Is that audience's encounter with the narrative an act of fate or of choice? The difference no doubt depends on the perspective of the listener.

The act of telling incorporates the desire to be heard. In shaping the world, the situation, the characters, and the action, an author inevitably incorporates her own set of bounded "life" values which are structurally embedded in the social contract that conjoins the artist, her community, and the economics of the act of making. This relationship then may affect the content, form, and venue in which the narrative is delivered. Thus, the author's desire may play to multiple goals, including the wish to engage the listener emotionally, the wish to provide enjoyment or entertainment, and the wish to generate some change in the listener's understanding or behavior. In the latter mode, narrative becomes a tool for learning about "oneself and the other."

Narratives embody several different types of time, of which "story time" and "viewing time" are the most salient. Because narratives are by nature filled with specifics, it will be useful to present a mini story to think with.

All narratives have to begin somewhere: a character has just turned 14 and is at the gym training for a gymnastic competition. The story focus quickly emerges: will she or won't she become a world champion? In an early scene, this question is situated within a larger context of time in the world: a discussion between two coaches reveals that this character was born in 1969 to parents who were political activists of their time. Busy with their own agendas, the implication is that they are perhaps less than 100 percent engaged in their daughter's passion for physical perfection. She encounters an obstacle: she falls from the rings and suffers an injury. She struggles over time to overcome the obstacle: she goes through physical therapy and struggles with regain her agility in the midst of emotions and doubts about her recovery.

At every turn of the narrative, the author is faced with: "what happens next." If the story is well told, the audience will identify with the situation through a character (most often, the main character). This usually means that the audience desires the protagonist's success or survival.

At the start of the narrative, the author may or may not know exactly how it will conclude, but as each scene follows upon the other, the action progresses in a way that changes the circumstantial disposition of the world and/or the mental and emotional state of the character. Progress must be in tune with the overall rules by which the world operates. This consistent progression through an apparent "life lived" captures the audience's attention and generates the empathy required to assimilate the story and its lessons as a surrogate experience.

No one has yet deeply studied the impact of the narrative on the social fabric of society. However, when one reflects on Greek tragedy, the Shakespearean opus, the 19th century novel and the 20th century movie, one gains some appreciation for the role story must have played in creating a shared life-value system. In analyzing the many pre-Enlightenment narratives that have survived, one gets a sense of the heavy reliance on destiny as a force guiding the action. In contrast, the life-value system embedded in narratives from the 19th century onwards, increasingly speak to the power of choice as a path to action.

As digital narratives come of age, there is an increasing desire to make the receiver a participant actor who has the power to affect the state of the world. This desire suggests that increased democracy generates a social need for increased public understanding of responsibility and choice. However, as many commercial and academic experiments have shown, there are significant difficulties in crafting these stories. Perhaps the most difficult issue is that of consequence. Does the story world "know" enough to make a convincing narrative move and change in response to audience interactions?

In addition, another challenge looms in our progress toward a narrative of desire: can narratives shaped by the free will of the audience also support those life lessons which we typically learned from narrative?

Time is of the essence: How do we decide what to do next?

"Life can be understood backwards, but must be lived forwards."

--Soren Kierkegaard

By its nature, the progress of a human life is continuous in space and time. Memory, sleep, and other cyclical and non-cyclical activities provide us with the impression that our life is made up of many discrete parts, sections, repetitions, highlights. While we segment our lives using a calendar representation (years, months, days, hours), we also relate our existence to "fuzzier" and more subjective measures (childhood, adolescence, adulthood, historical eras).

Story, as a mode of thought and communication, governs much of what we know and what we can share. When we talk about our daily activity, we do not describe every detail of every action; rather, we highlight the unusual or the especially significant: an unexpected meeting, a difficult moment, aspects of the everyday that we experienced as delightful or troublesome or revealing. We frame these moments as potential harbingers of change: our child's first steps, an interaction that moves romance to the front of fortune.

"Time is the measurable unit of movement concerning a before and an after."

--Aristotle (Physica IV, 11, 219, b1)

All narratives encompass time. Rendered narratives are told within a double time-bound constraint: story time and viewing time. What is the measure of storied time? What determines the temporal boundaries of a narrative? Are these boundaries predetermined and absolute?

Story time is the time during which the action or events of the story take place. Given the particular nature of narrative, a first scene must be set up before a story can be rendered. This beginning establishes the opening boundary of story-time, grounding it in specifics. The scenes that follow may progress in

chronological order or may be arranged in a psychological pattern that includes flashbacks and flashes forward.

In contrast, viewing/listening time is lived time in the life of the audience. This time can only move forward, although the viewer/listener may choose to pause, do something else for a while, and later recommence their engagement with the narrative.

Stories are attempts to communicate the significance of life lived. For this reason, they simplify and selectively intensify life's actions. Fiction requires the author to craft a sense of time; each footstep, each glance, each interaction provides the viewer with critical information that builds story understanding, pacing, and a sense of time passed.

Observational documentary stories differ from fictional recreations in that the camera is recording "life as it happens," capturing continuous time in as much detail and duration as the camera operator wishes. The observational documentary suggests that stories, like life, can be complex, can operate in different time frames, can evolve. Despite the promise that we could perhaps record infinitely, we still need to acknowledge that viewing time will be limited. How do we extract significant detail from an infinite stream of Memorex?

"The time which we have at our disposal every day is elastic; the passions that we feel expand it, those that we inspire contract it; and habit fills up what remains."

--Marcel Proust

The ability of an author to condense time is often framed by changes of the intentional state of a character. A character has an ambition; the ambition is thwarted; the character does something that allows her to overcome this initial difficulty; the character succeeds or not. Is this journey absolute? Could the story have begun somewhere else? Could the character have done something else? Would coming into the scene earlier or leaving later alter our view of the particular actions portrayed? Would that result in the presentation of a different story? Would that presentation be more or less interesting?

Today, we are just beginning to explore the possibilities provided by marrying collections of complex story material with systems that make many story presentations possible on demand. These storytelling systems must be able to offer their tales in an engaging way that generates empathy, promotes reflection, and provides a meaningful surrogate experience regardless of the details of the particular presentation. These requirements are minimal to the social contract of story.

Pursuit of this goal opens up many important questions. Why is such an approach significant to human cultural and social development? Who will define and shape morality in these systems? How tightly will these interactive presentations emulate the fixed, highly authored state frameworks of traditional stories? At a technical level, what are the requirements for producing materials for such a system? How will time be represented, and how does this change the balance between desire and destiny?

Models: control, narrative creation and exchange

"Time is a dressmaker specializing in alterations."

--Faith Baldwin

In the digital age, narrative is transforming itself into a more complex and personalizable medium. The passive consumption of pre-made stories is giving way to hands-on, heads-in audience participation in the progress of the tale. Today, audiences are being invited to actively navigate large and complex story worlds, creating narrative as they go. Some of these story worlds allow them to meet with others, socialize, and work together in the co-construction of narrative meaning. Increasingly, participants are encouraged and empowered to contribute their own reusable content to the mix. This evolution of the

narrative form supports new narrative acts and offers new opportunities for reflection and learning as well as for entertainment.

Based on experiments in the digital form, two broad models for narrative construction and interaction have emerged: the "evolving narrative," a collection-based approach to the construction of moral meanings; and "multi-player game worlds," which incorporate some narrative framework that may or may not involve intelligent virtual agents. Both types of narrative can engage many people. Both types of narrative require some degree of generative intelligence if they are to accommodate human desire.

In the following sections we contrast the potential of these forms from a perspective of control, narrative creation, and exchange.

Models: general characteristics

In the last 20 years, an evolving-collection model for media narrative has emerged. Generally speaking, the collection-based narrative involves the growing and use of a "semi-coherent" database of story fragments. Collected by one or many participants, this loose bag of related sequences provide a fragmentary and isolated "re-description of the world." Rather than being hard-linked into an explicit navigable framework, these fragments are tagged with descriptive metadata that allow frameworks to be dynamically generated and manipulated as needed. An interactive user interface (and its underlying narrative engine) is then devised to navigate these collections, and the subsequent traversal results in a story-like experience. In "Haroon and the Sea of Stories," Salman Rushdie paints a fanciful metaphoric picture of just such a system. The navigator is afloat on a vast ocean of brightly colored story streams that weave in and out of each other. By steering a very personalized j!

ourney across this seascape of story content, the challenge, the motivation, and the pleasure is entirely situated in the narrative imagination and mental constructs of the navigator.

In contrast, storied games, as they have emerged in the last 20 years, offer a narrative journey with pre-assigned challenges designed into the game by the author. Highly graphical single-player (and turn-taking multiplayer) game worlds evolved in parallel with social chat rooms and text-based MUDs ("multi-user dungeons"). These three types are now merging into environments whose pleasures include the acquisition of skills and powers over others, the challenge of overcoming obstacles, and socially cooperative or confrontational "meet and greets."

The collection-based and game-based models both continue to assume the existence of an author(s). In both cases, the basic tenet of narrative as a focus of social interactions remains. However, these models treat some of the older assumptions about narrative quite differently. In evolving narrative there is no sense of a "right" place to begin or end the story action. Progress through story may have a more or less pronounced "arc." Digressions or changes in story direction may be as fulfilling as the primary narrative course.

In a game environment, a player enters at a particular place and time, catching up on back story as it is revealed through interactions with other players or embedded links. As the player engages in the action via a surrogate character, the game typically ends when she is killed, loses power, accomplishes all of her goals, or decides to quit.

These models have very different representations of time, plot, and choice. We can look at these issues more critically by examining control, method of narrative creation and modes of exchange.

Control

The issue of control is best examined from two perspectives: control that is exerted by the author and the system, and control that can be exercised by the participant.

Collection-based narratives present different control options to the maker and the story recipient. In the most successful collection-based implementations, the machine acts as an accomplice to the story receiver on her narrative journey, guiding her as she explores the collection, but also attending to continuity in the development of character, the framing of intentional state, and the selection of "what happens next."

The author or maker defines the contents of a collection, its scope, the size and length of individual segments, the structure of the database, the mode of representing the clips, the methods by which the machine reasons about requests, and the interface by which the audience engages directly with the collection. Unlike a traditional narrative, the author does not control "what happens next;" instead, that task is left for the machine and the audience to navigate together.

In collection-based narratives, the active navigator may not think of their activity as creating a query to a database of content; rather, drawn by curiosity and expressing desire through a more or less transparent interface, she sets certain constraints on "what happens next." The metaphor for making this request is critical and often distinguishes a compelling narrative experience from a mediocre one.

On-line games are currently highly authored constructs. Typically, they present a sketchy, selectively detailed but entertaining world in which avatars (on-screen surrogates for the human players) mingle with themselves and with synthetic non-player characters. The authors of these worlds create an initial geography, time, a group of non-player characters, goals, operational rules, and situations that provide some semblance of a driving story that provides a narrative context for the players' actions.

The practiced gamer in these environments is given certain abilities to define their own identity, roles, and powers; to navigate their own way through a landscape filled with tools and obstacles; to attempt their own strategies for overcoming difficulties or fulfilling ambitions; to make or break alliances; and to add, remove, change, hide or reveal information through communications with other characters. Playing a game means interacting with and within the game world, a space of possibility whose narrative dimensions emerge as players activate, manipulate, explore and transform the world. Space and time are available for digressive exploration, but ultimately the player must return to the authored path for advancement. Thus, success in these worlds comes only after passing through a "learning curve" about their authored aspects, which can be quite substantial for complicated games.

Players choose to participate in these on-line games largely for the pleasure of overcoming authored challenges, but the role-playing fantasy aspects and the social interactions with other players add considerable spice to the experience. Any particular player may in fact prefer to stand by and chat with other players, rather than acting upon some power challenge of game play.

A major deficiency in the game worlds of today is their paucity of on-the-fly generative abilities. Non-player characters can stand around and may function according to a reactive routine, but they currently lack the ability to improvise dramatic interactions with a player or respond to the player's innermost desires. Similarly, story plot-lines cannot reconfigure themselves when stretched to the breaking point by conflicting audience desires.

Systems that combine a user interface, a narrative presentation engine, and metadata-tagged content have often been referred to as a "storyteller in software." For the moment, reasoning about story is still a distinct challenge for the machine; the rules, heuristics, authored possibilities, story models, and other software encoded within these narrative play-spaces dictate whether destiny or desire rules. However, recent methods for representing and processing narratives -- such as behavioral models and common-sense reasoning -- may help achieve more distinguished computational storytellers in the future.

Narrative creation and exchange

Collection-based systems and games offer different opportunities to create and use content. In a collection-based system, a sociable network of participants create and submit chunks of content, tags them with descriptive metadata, and sometimes hard-links them to related materials. In navigating the system, participants will value and extend elements differently. In today's weblogs, for instance, submissions are sequenced by date. The participant can comment on a submission and create active links to other segments, violating the temporal but not the intellectual continuity.

The mechanism of commenting and linking moves the agenda of desire forward but does little to enhance narrativity beyond that already authored into the submissions. Elements in the collection remain relatively isolated with one foot in a chronological submission line and another foot in some thematic keyword pool. This thin annotation cannot take full advantage of narrative conventions that we have discussed earlier, such as the idea that narrative coherence can admit to large jumps in time and place so long as the character stays the same, or can weather shifts between characters so long as the time and setting stay the same.

A more promising direction would be to apply some mechanism that senses desire and then moves to a "next" segment that builds continuity in a story arc based around character, place, or theme. By sequencing two segments, the direction of the story arc becomes clearer and the participant has a sense of whether this direction seems to reinforce her initial desire. If not, the conditions for changing course grow stronger.

In an early experiment, "JBW: A Random Walk through the 20th Century," we used keywords and keyword classes to achieve this result. Using a "spreading activation net" story engine that applied "energy" to the most recently used concepts, a form of thematic continuity could be enforced to help choose what chunk of content should next be presented. More recently, we have turned our attention to the emerging field of "common sense" knowledge representation and reasoning as a means to suggest or even generate the next piece of story.

In game worlds, content that affects the narrative world could be generated at every instant. The problem here is that player moves are very small perturbations in a large world of activity. Games are designed to enable players to play according to particular rules. Their play generally has consequence only for the individual player, or in a multiplayer game for people in the general vicinity.

However, the multiplayer game world suggests that by a combination of player action and common-sense machine reasoning, even a player's decision to just "hang out" is capable of generating a significant effect in the world.

One such effect might be to attract a non-player character (an artificially intelligent robot) who attempts to trick the player in question and goad her into action. However to do this, the non-player character would need to sense the state of the world, understand the particular story circumstance, possess a rich behavioral model, be capable of devising a prank, and have the ability to communicate with the hapless player.

Common-sense representations provide us with a very fine-grained, redundant representation of the world. These representations and reasoning methods are well suited for improvisationally crafting responses to audience interactions, including changes in the narrative's direction. In multiplayer game worlds, adaptive content generation is best accomplished through action by non-player characters, sets, props, and screen point-of-view. These state changes can entice human players to take action or alter their behavior. For example, the player might be standing at the corner of an intersection. If the system knew that an important piece of the upcoming narrative action could only be seen if the player crossed

the street, the system could dispatch a synthetic "little old lady" character to beg the player to help her across; and, for extra enticement, the synthetic street light would turn from red to green.

Conclusion

Narratives are re-descriptions of our perception of human reality. As a means of social communication and sharing, narrative content and structure has played an important role in the evolution of civilization. Myth as a story type created gods in human-like guise, thereby taming the unknown. 19th century novels exposed inequities of class, thereby establishing means of thinking about "human rights." Movies invite us to empathize with many characters who seem almost like us, thereby offering us a surrogate experience that may help us as we encounter new life experiences down the road.

In this position paper, I argue not only that new narratives try to capture the desire of the audience, but also that they increasingly try to entice each member of the audience into a world where she can choose a path based on desire, and where she personally feels the consequence of her actions.

Creating such narratives is as challenging as it is necessary. Necessity stems from the arrival of an increasingly democratic world where choice and responsibility must be understood in an ever-greater depth. The challenges are many: among them, how can we build a world that is rich enough to offer not only personalization but also surprise.

Two tools that can help us in this regard: allow the many participants of these worlds to generate the content they navigate; and, embed more human-like knowledge representation and reasoning in these interactive story experiences.