The Pleasure Principle: Immersion, Engagement, Flow

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ABSTRACT
While few critics writing on readers and hypertext have focused on the affective pleasures of reading hypertext fiction or interactive narratives like *Myst*, those who assess the experience of reading them tend to assume interactive texts should be *either* immersive *or* engaging. This study uses schema theory to define the characteristics of immersion and engagement in both conventional and new media. After examining how readers' experiences of these two different aesthetics may be enhanced or diminished by interface design, options for navigation, and other features, the essay concludes by looking beyond immersion and engagement to "flow, " a state in which readers are both immersed and engaged.

KEYWORDS: hypertext fiction, interactive narratives, aesthetics, reading

INTRODUCTION: THE PLEASURE PRINCIPLE, UNDEFINED

What do we seek when we read for pleasure? Surprisingly few critics or theorists have even attempted to define the pleasure that keeps us turning the pages of, say, *The Good Soldier* or *Heart of Darkness*. The same pleasure may, however, elude us when we settle down to read Robbe-Grillet's *In the Labyrinth* [55], a novel seemingly designed to frustrate every assumption you never knew you had about fiction and continuity in character, time, and place. Critics may have avoided the entire affective dimension largely because writers and audiences alike glomed onto the conventions governing short stories and novels relatively swiftly after the debut of print fiction [67]. More remarkably, readers today enjoy the same pleasures from delving into *The Count of Monte Cristo* or *Pride and Prejudice* as did the novels' contemporary audiences, despite the passage of hundreds of years and dramatic shifts in cultural perspectives and values. In contrast, hypertext writers and designers of interactive games work in relatively uncharted territory. No fixed genres or

conventions tell us the sorts of narrative twists or tidy resolutions readers prefer. More important, perhaps, we lack knowledge of how, exactly, interactivity and the freedom to traverse through narratives and hypertexts relatively freely may enhance or inhibit our pleasure in the stories they contain. If we understand our audiences' affective experiences in reading hypertext fiction or playing interactive games, we can likewise begin to determine the types of stories, tools, and even interfaces that lend pleasure to the acts of reading and interacting with hypertext.

To date, most studies of reading and hypertext have focused almost exclusively on readers' physical and cognitive encounters with texts [5, 6, 7, 21, 23, 64], not on the affective pleasures readers derive from paging through mysteries, science fiction, and classic literature. Yet we can readily explore the affective dimension of interactive narratives by using schema theory to analyze hypertexts and understand how interactive narratives frustrate or gratify schemas readers possess from other texts. Long employed by linguists [3, 66], cognitive psychologists [13], art historians [32], and AI researchers [58, 59, 60], schema theory charts how information processes shape perception and action alike, focusing our expectations—even determining the fine grain of our interactions with objects [3]. Rumelhart [57] defines schemas as data structures that represent generic concepts, knowledge about the world, that enable us to perceive, understand, and, eventually, act. Schemas tell us to expect something nasty in the basement in almost any horror film. Moreover, our recognizing that *The Fog* is a horror film sets up a series of expectations that the film either satisfies with appropriately unnerving suspense, gruesome deaths, and horrific antagonist—or disappoints, in this particular instance, with some ferociously backlit but otherwise perfectly unremarkable humans behind all the mayhem.

Schemas enable us sit sanguinely through assorted mishaps in *Four Weddings and a Funeral* because the unfortunate coincidences, bungled opportunities, and snatches of humor mesh with the schema we have derived from countless encounters with comedies onstage and onscreen. Our knowledge of the comedy schema, whether we are conscious of it or not, informs us all will be neatly reconciled before the final credits roll. Likewise, writers and filmmakers can play off schemas to shock audiences, as in Hitchcock's *Psycho*, where the narrative's protagonist and ostensible raison d'être—a suitcase of pilfered cash—both bite the dust before the film's mid-point. And we can

even develop schemas that guide our expectations and comprehension of a single writer's or filmmaker's *oeuvre.* Our knowledge that Steven Spielberg directed *Schindler's List* can lead us to expect a positive outcome, an uplifting conclusion to even a film about the Holocaust, where viewers would seldom expect an upbeat or light-hearted conclusion to anything by David Cronenberg.

PLEASURE: IMMERSION AND ENGAGEMENT

"It must be granted that there is some value in mystification, labyrinth, or surprise in the environment . . . This is so, however, only under two conditions. First, there must be no danger of losing basic form or orientation, of never coming out. The surprise must occur in an over-all framework; the confusions must be small regions in a visible whole. Furthermore, the labyrinth or mystery must in itself have some form that can be explored and in time apprehended. Complete chaos without hint of connection is never pleasurable." —Kevin Lynch, *The Image of the City* [44].

The fundamental building blocks of comprehension, our schemas guide us through our everyday lives, even making an unfamiliar city easily navigable. Based on countless encounters with other cities and towns—both firsthand and through films and documentaries—our schemas tell us, for example, to expect shops and restaurants in clusters or grouped blocks in cities like New York, London, and Boston. Similarly, schemas tell us how to make sense of the floor plan of most houses, enabling us to guess where we'll find, say, the kitchen as we stand at the threshold of a house we've yet to enter. We build schemas unconsciously, adding or modifying details when we stumble across unusual examples. And we often judge the merits of the likes of New York or Detroit based on our mostly unconscious schemas for big cities. So our schemas shape both our expectations and our enjoyment as we make our ways through the city. We generally expect to find businesses, shopping districts, and nightlife in the core of most large cities, making New York an enjoyable city and Detroit, disappointing. Yet while we judge our encounters with new and familiar places alike based on their fit with our schemas, surprise within a schema is usually pleasurable, as Lynch notes—provided our discovery doesn't threaten to subvert the schema entirely, disorienting us.

We can trace the pleasures we enjoy from narratives directly to schemas. We build schemas for books and films through repeated encounters with genres and individual texts, as well as through reading criticism on, say, classical tragedies or John Ford's westerns. We use local details to recognize a work's genre which, in turn, tells us how to interpret those same details—a single death in a tragedy moves us more than piles of bodies in an action picture. And we use schemas to weigh the satisfactions provided by works. How well *The Wild Bunch* adheres to the familiar schema for westerns is integral to our enjoyment of Peckinpah's film. And films or novels that adhere rigidly to

long-familiar schemas continue to provide us pleasure, even when their schemas are so familiar they tell us almost exactly what to expect in the story's development, climax, and denouement. In part this lies in the pleasures we derive from recognizing schemas and interpreting what we read or see in light of them. Mysteries are successful, argue Beaugrande and Colby [4], when they provide an entire stable of likely culprits and tenable motives and encourage us to keep guessing, mostly incorrectly, to the very end.

Virtually all Western languages have idioms that describe being lost or carried away by a book. The same pleasure of immersion within story schemas was branded as pernicious as morning tippling from the debut of the print novel through the seventies [53]. Most so-called "genre" fiction— works that adhere to the central schemas governing the likes of the mystery, romance, western, or sci-fi stories— immerses readers in narratives by relying on stock characters working their ways through more or less predictable quandries. So while readers may unconsciously recognize the familiar trappings of the thriller in *Smilla's Sense of Snow*, local details in setting, motivation, and the plot's central mystery snare our interest in the work. Our familiarity with the narrative's central conventions simply enables us to interpret things fairly unproblematically [4]. Contrary to most critical assumptions about the differences between "light reading" and classic works [10, 46], the average reader's cognitive capacity is more fully absorbed by genre fiction than by difficult texts [11]. Our attention is more continuously absorbed by Tom Clancy's *Debt of Honor* than by *Moby-Dick*.

Perhaps, however, this isn't so counterintuitive after all. The old distinctions between high-brow and low-brow works aside, by enabling us to grasp immediately the significance of each event and every conversation we encounter in a narrative, works that adhere closely to familiar schemas claim our attention entirely within the frame constructed by the text. We seldom pause to wonder what Stephen King or John Grisham really meant on page 91, while readers delving into the first pages of *Ulysses* or *Mrs. Dalloway* have few, if any reliable schemas to fall back on. The pleasures of **immersion** stem from our being completely absorbed within the ebb and flow of a familiar narrative schema. The pleasures of **engagement** tend to come from our ability to recognize a work's overturning or conjoining conflicting schemas from a perspective outside the text, our perspective removed from any single schema. Our enjoyment in engagement lies in our ability to call upon a range of schemas, grappling with an awareness of text, convention, even of secondary criticism and whatever guesses we might venture in the direction of authorial intention.

Reading *Jane Eyre* is immersive, for all its plain heroine and would-be bigamist hero—subversions of some of the staples of the romance novel that, nonetheless, can easily be accommodated within that schema. Reading *Ulysses* is engaging, since James Joyce's novel confronts readers with shifting perspectives and dramatic changes in voice, much of them experimental. Unlike most narratives, which set up

dramatic tensions and then get busy resolving them, *Ulysses* focuses on only the dramatic tensions unfolding within a single day, bringing none to definitive closure [35]. Tellingly, when Joyce circulated his radical new work among friends, he accompanied the manuscript with what he called a "schema" to *Ulysses* that established parallels between the novel and Homer's *Odyssey*. The Joyce Schema—as it was called when published [33]—provided direction, a structure for readers who might otherwise have spent most of their time with the novel sifting through suitable schemas and coming up mostly empty-handed. Even readers tackling *Ulysses* without benefit of a Rosetta Stone like the Joyce Schema can modify schemas from newspapers, from encounters with stream-of-consciousness narration in other novels, and experiences of other works with wandering perspectives to assemble a metaschema enabling them to make sense of the entire work. Joseph Frank may have been pondering something like this process of building a metaschema when he famously declared that *Ulysses* "could not be read, only reread" [25]. Just as immersion is satisfying as long as local details infuse the schema with unique or unpredictable elements, so engagement remains pleasurable only when it displaces or subverts one schema while offering readers suitable alternatives. As the urban historian Kevin Lynch argues, the value in mystification or surprise lies in its occurring within a visible framework. "Complete chaos without a hint of connection," Lynch reminds us, "is never pleasurable" [44].

Yet at times our pleasure can be heightened when a plot violates our guiding schemas, as does the notorious shower scene in *Psycho* by leaving viewers with one very dead Marion Crane and no other likely candidate for a hero or heroine anywhere on the horizon. And even texts that violate schemas relentlessly, like the short stories in Robert Coover's *Pricksongs and Descants*, with their mutually exclusive episodes and multiple, contradictory endings [16] impart pleasure when they prompt us to recognize overturned schemas from a perspective that consciously draws off a variety of schemas, encouraging us to guess and second guess at the embedded meanings.

Of course, engagement as a pleasure is not solely the province of works by what Robert Coover [15] has called "difficult" writers. Readers and viewers can easily become engaged in works intended to be immersive—and mostly enjoyed as immersive by others. Readers of works like Iris Murdoch's *The Unicorn* can use schemas to ponder the novel's metafictional aspects or the eponymous unicorn as both Christ-figure and scapegoat, finding ample candidates for both roles among the assembled figures in the novel. Or they can simply immerse themselves in what reads like a thoroughly immersive gothic romance, partly due to subversions of the usual romance schema, including a romantic hero who turns out to be a murderous homosexual and a villain who ends up dead before he physically arrives on the scene. Similarly, cinema aficionados can become engaged with the interplay between narrative and technical details like film stock, camera angles, over- or undercranked film, rack- and deep focus. Habitual theatre-goers can become engaged in the intricacies of staging the likes of *Richard III* on a thrust stage over a proscenium, as well as with casting, lighting, blocking, and the overall interpretation of Shakespeare's play. Likewise, musicians listening to a performance can become engaged in noting a pianist's interpretation of Chopin or an orchestra maestro's rendering of the Adagietto of Mahler's Fifth Symphony.

PLEASURE POPULARLY DEFINED: ENGAGEMENT OR IMMERSION

Beneath both Luddite critics' blanket dismissals of hypertext fiction [10, 46] and careful, well informed descriptions of the pleasures of interactivity alike [48, 49, 56] lurks a surpisingly singular assumption. According to most critics, the pleasures of interacting with narratives, like the reading audiences who consume them, are monolithic entities. Texts are either immersive or engaging. Thrillers, westerns, and mysteries immerse us in their characters and plots, making us temporarily oblivious of the world around us. Texts by "difficult" writers engage us by challenging and subverting our schemas, reminding us of our role as readers and sensemakers. In *Hamlet on the Holodeck*, Janet Murray positions satisfying interactive texts midway on a continuum between the "underdetermined form of rhizome fiction [like *Victory Garden* and *afternoon*]" and "the overdetermined form of the single-path maze adventure," arguing that both work against our pleasure in the immersiveness of interactive texts [52]. Even in the throes of his highly insightful and detailed discussion of the structure of hypertext activity, Jim Rosenberg notes that "the spell becomes broken" when readers lose track of all episodes in a hypertext [56], severing an immersive state that recalls Coleridge's "willing suspension of disbelief" [14]. Both Murray [52] and Brenda Laurel in *Computers As Theatre* [43] insist on concepts like unity of action or navigation interfaces that preserve the fourth wall [42]—the invisible line that separates actor from audience. Even the tools for our interactions should be situated securely within the narrative's frame, they argue, so that the maps, cursor, and options for action all increase our immersion in the narrative world. Conversely, other critics and theorists [1, 6, 9, 38, 48] tend to focus on readers' engagement with the text over their immersion in the narrative. Still other accounts of how readers interpret hypertext fiction, particularly where closure is concerned, stress readers' achieving a sense of perspective on the text as landscape [37, 56] or structure [21], an extra-textual engagement at odds with the immersion Laurel, Murray and others strongly favor. Clearly, immersion and engagement represent the ideals or goals of affective experiences, but do they necessarily exist on a continuum, where increases in engagement diminish our sense of immersion and vice versa?

IMMERSION AND INTERACTIVITY

In an immersive, interactive text like Shannon Gilligan's *Virtual Murder* series, our pleasure stems from our ability to detect a schema familiar to us from countless crime novels, from TV series and films, and from documentaries

where forensic anthropologists puzzle over blood spatter patterns to determine whether the assailant was right- or left-handed. Each of the four *Virtual Murder* CDs oblige us to sleuth our way from crime scene to identifying the culprit. The crime scene, cast of suspects with motives and grudges galore, even the interface's tools hew minutely to the detective schema. Confronted with a crime scene, you can test for carpet fibres, foot- and fingerprints, blood splatter and blood types. You can sift through a lengthy coroner's post-mortem report, interview an array of suspects, jot down details in a notebook, even question your trusty sidekick—initially played by Gilligan herself [28, 29]. The narrative is resolved, true to schema, when you swear out a warrant for the right suspect's arrest. And you enjoy the pleasure of seeing them behind bars, sometimes snuffling through crocodile tears. Our pleasure in the narrative, moreover, is heightened through its interactivity, as we enjoy our ability to take situated action and to savor the results of our agency. We take pleasure in the way "navigation unfold[s] a story that flows from our own meaningful choices," exactly as Murray [52] has argued. Moreover, where your usual police procedural/crime novel penned by Patricia Cornwell or the film of Elmore Leonard's *Get Shorty* has a strictly singular ending, the interactive crime narrative is far less obsolescent. While Gilligan's *Who Killed Sam Rupert* [28] has only a single perpetrator, *The Magic Death* [29] has three equally culpable culprits. Further, *Who Killed Taylor French?* [31] and *Who Killed Brett Penance*? [30] feature three distinct killers and three different crime scenes, each requiring hours of immersive nosing through autopsies and crime scenes, information-gathering, and hypothesis-testing.

Most interactive narratives grouped under the rubric of "games" or "entertainment" adhere to a singular schema, making them candidates for immersive experiences. Yet while *Myst* [47] is obviously a grail quest straight out of the "Fantasy" section in Barnes & Noble, the interface and tools are idiosyncratic to the narrative itself. Merely strolling around the island and training an observant eye on your surroundings will leave you doomed to remain stranded ignominiously on Myst Island, bereft even of an introduction to the plot's central dramatis personae, let alone its central tensions. Similarly, *Titanic: Adventure Out of Time* [65] trades on our familiarity with the treasure hunt schema: sock away all the objects you encounter, use them strategically, and finish with only the valuables. Most users, moreover know all too well that the narrative's setting—on the Titanic late on Sunday night, April 14, 1912—ensures you, as protagonist, have only a matter of hours to accomplish everything before the White Star liner plummets to the depths. Our awareness of the setting, historical context, and accessible schema should ensure an experience as immersive and pleasurable as anything Shannon Gilligan devised. But *Titanic* equips you with a trusty valise and occasionally loquacious intelligence superior to make your way through the story. Ultimately, the tools you use for interacting with the narrative remain, as with *Myst*, strictly idiosyncratic—one reason for the sudden proliferation of strategy guides to the likes of *Titanic*, *Myst*, *Obsidian*, and *The Last Express*. Conversely,

no such guides are necessary for the Sega, Nintendo, and Sony Playstation titles that call for interactions cleaving closely to the shoot-'em-up skill of old arcade games: when another character confronts you in *Mortal Kombat*, you usually kill it. Merely surviving to the end of the game usually puts you well on your way toward resolving its essential tensions, which tend to involve recovering or guarding valuable objects.

For our affective experience to remain satisfying, however, more ambitious titles with fully-fledged narratives, characters, and branching plots need to overtly guide or curtail our possibilities for action through story schema and interface alike. Interactive games fulfill their promise as immersive when they offer us an obvious schema for both narrative structure and interface, and when they offer us predictable, tightly scripted interactions enabling us to enjoy virtual experiences either unattractively risky or denied to us in everyday life [63]. While the story schema in *Gadget* [61] plays like a weird amalgam of *Brazil* and *Sudden Impact* and the interface tools are mostly concealed, the shape of the narrative constrains your ability to act outside *Gadget*'s schema. While you can glide through the narrative's vast hotels and train stations at will, you cannot leave one space for another without fulfilling the tasks required of you. If an informant in the Museum train station has instructions for you to turn your quest around, the train idles helpfully in the station until you venture out of the car, stroll up to one or two likely looking characters, and receive the vital clue.

Genre fiction lends itself to immersion, encouraging us to form hypotheses, guess about motivations, project a series of likely conclusions. These processes stand as a kind of low-level, mostly unconscious engagement with the text and schema it invokes, confined entirely inside the framework of the text's schema. To enter into the world of Gilligan's *Virtual Murder* series, for example, we don't need to grapple with an interface, tools, or even an understanding of anything other than the usual police procedures common to mysteries and crime stories. Further, we tend to enjoy immersive experiences because we expect to "lose" ourselves in a book or film when we choose to spend time with certain kinds of texts: an Agatha Christie mystery, a television series like *Law and Order,* or a Hollywood film. As we'll see, readers who expect a work to absorb their attention within a mostly predictable schema seldom enjoy the schema selection that accompanies engagement.

ENGAGEMENT AND INTERACTIVITY
Engagement works most satisfyingly when it plays out on a level at which readers or users have an array of well-established schemas to draw from. The print novel had both a long-standing, robust history and well-established conventions when Virginia Woolf created *Mrs. Dalloway* with its two main characters who never meet and wandering, stream-of-consciousness perspective that passes seamlessly from one mind to another [68]—features that would have stumped readers of Fielding's and Defoe's era. Hypertext readers, however, have no similar history, no

solid set of schemas to call on in building a meta-schema that lets them understand the text. Even readers of the earliest English print novels were guided by two powerful schemas used since the debut of print: letters and historical chronicles. Two of the earliest novels to appear in print are purely epistolary; both Richardson's *Clarissa* and *Pamela* are novels told through letters, as is Fielding's parody, *Shamela*. Similarly, Defoe's *Journal of a Plague Year* replicated the historical chronicle so convincingly that the text was wrongly classified as an eyewitness historical account for a hundred years [18]. And even Laurence Sterne's schema-shattering, engaging *Tristram Shandy* represents both a fictive autobiographical account and a parody of the entire spectrum of conventions established with early print novels. Readers of hypertext fiction, however, have no such tangible conventions to aid their engagement with the text.

Moreover, hypertext narratives like *Afternoon*, *Lust*, and *Patchwork Girl* are difficult reads not simply because they rely on a new medium and technology but because all three are also recognizably postmodern in their content, tone, and treatment of narrative. And, if we can identify the postmodern aesthetic as springing from any single impulse, its central thrust is about calling attention to and ultimately disrupting the schemas and conventions of print [26]. As a result, postmodern narratives positively demand engagement from their readers. Careful, close readings can identify these three hypertexts as narratives that deliberately eschew realism as well as the usual fictional conventions, frustrating and blunting our expectations of continuity, causation, and the closure that neatly resolves the story's central tensions.

What makes hypertext fiction doubly engaging is its setting of what are mainly postmodern narratives—fractured, disruptive, ironic—within interfaces that are also idiosyncratic. Although the best-known hypertext fiction has been written with Storyspace software [34, 36, 50], the strategies that work for navigation in a text like *Lust* [2] differ dramatically from those that shape *Afternoon* [36]. Even when hypertexts strive strenuously to invoke or play off expectations drawn from print, as in Michael Joyce's *WOE*, readers may be simply disoriented by the doubling of unfamiliar schemas for both navigation and narrative alike. Readers, for example, might not recognize Joyce's swapping the husband's best friend for the husband in the second of two contiguous narrative strands featuring a post-coital couple—an effect that, in a film or novel, would have evoked powerful responses in its audience.

We could argue that hypertext has already established "hot" (linked) words, named links, and defaults (requiring the reader only to strike the "return" or "enter" key) as the central "glue" binding the texts together and enabling navigation alike. Cinema, after all, quickly established cross-cutting, special effects, and the shot-reaction-shot sequence during its nickelodeon era [27]. But cinema-goers called on an array of familiar schemas in making sense of even its primitive, fictive shorts. Early twentieth century audiences already understood parallel development and

special effects from evenings at the theatre, and even films as innovative as Abel Gance's *Napoleon* or D.W. Griffith's *Birth of a Nation* relied on realism, conventional depictions of character, and a dramatic structure as old as Aristotle's *Poetics*.

We can observe some of the same schema-building occurring on a more modest scale in hypertext fiction. Many of the so-called Eastgate School—writers of hypertext fiction published by Eastgate systems—rely on a set of evolving conventions that function as schemas for understanding hypertext. Segments of text or lexias that occur in close proximity on a cognitive map usually are bound together by chronological, relational, or causal connections [45]. Lexias that recur may remind readers of the other contexts in which they occur or may take on new meanings with new encounters [6, 19]. Mark Bernstein [8, 9] has also identified cyclical repetition broken to signify closure [20, 36], contour, where cycles coalesce or collide [40], and montage that establishes connections across the boundaries of lexias or links, as used by Landow [41], Jackson [34], and Paul [54].[1] Readers engaged with hypertext fictions like *Victory Garden* or "Twelve Blue" make hypotheses about the relationships between lexias and the significance of links, layering onto the print reader's engagement with character, continuity, time and space. Long-term engagement with a hypertext narrative, the necessary rereading Michael Joyce [37] describes, clarifies some relationships, nullifies hypotheses, both thwarts and gratifies navigational strategies, and generally enables readers to enlarge their repertoire of hypertext aesthetics and schemas still further.

Finally, hypertext episodes [56] can also represent causally linked lexias that invoke familiar schemas from print fiction or film. In an early sequence in *Afternoon*, the narrator searches for the whereabouts of his wife and son, believing them to be victims of a traffic accident he passed on his way to work. This relatively simple sequence evokes thrillers and mysteries that rely on dramatic tension. So our quest to answer what seems like the narrative's central question begins ticking over even as Joyce's narrator begins making queries. When the hypertext provides readers with default links that move them rapidly and mostly unconsciously through the narrative, their experience can shift from engaged to immersed, the familiar schema acting as a centripetal force that organizes and makes coherent the hypertext. To a reader seeking an immersive experience, *Afternoon*'s quest schema can impose order and significance on the hypertext's cognitive map, even determine the narrative's point of closure as the sequence that best satisfies the quest [21, 22].

On the other hand, even a hypertext that hews relatively closely to the sort of continuity and causality readers expect of conventional print narratives can nudge its readers into

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[1] Other devices Bernstein notes [5, 7] include the missing link [39] and cognitive maps in hypertexts like *True North* [64] and "I Have Said Nothing" [20] that represent the relationships between narrative lexias and sequences also serve as tropes for the narratives themselves.

engagement. In Douglas' "I Have Said Nothing," [20] readers follow a series of chronological, narrative strands, half of which lead to a lexia called "The End." Readers who encounter "The End minutes into their reading—or those who consult the text's cognitive map and discover "The End" nestled near the map's central point—however, need to pause and consider the menu of options for navigation. By creating a "no default" condition for the lexia, Douglas forces readers to break the mostly immersive rhythm encountered with each sequence and ponder how they wish to explore the rest of the narrative. Hot words or default links enable readers to make navigational choices within the narrative framework. But a menu of choices for navigation almost always involves breaking the frame, bringing readers swiftly, if temporarily, out of their immersion in the text. Interface and tools aside, however, engagement may be an intrinsic aspect of our experience with interactivity. Uniquely in interactive texts, closure stems not from the exhaustion of a physical text or the resolution of narrative tensions with a singular ending but from readers deciding when they are satisfied with their experience of the text [23]. The decision to press on and explore more of *Victory Garden* or "Twelve Blue," to see if familiar lexias encountered in novel contexts yield different meanings, will always require engagement with a text—no matter how immersive the reading experience that preceded or follows that decision.

IMMERSION INTO ENGAGEMENT INTO FLOW

"An environment which is ordered in precise and final detail may inhibit new patterns of activity. . . Although this may not seem to be a critical issue. . ., yet it indicates that what we seek is not a final but an open-ended order, capable of continuous further development"—Lynch, *The Image of the City* [44].

So immersion and engagement are neither mutually exclusive properties nor polar opposites, despite the assumptions and assertions of most critics. Instead, most interactive texts necessarily rely on both, even though readers may perceive the narrative as entirely immersive or completely engaging. Immersive novels and films require virtually no engagement from their readers and viewers, since we can simply follow the plot and enjoy the ride. But even the most immersive interactive narrative, like *The Magic Death*, requires its readers to decide which suspects to question, as well as what knotty points to bring up during questioning. Similarly, even the most engaging hypertext fiction uses immersive elements like dramatic suspense, familiar schemas, and causal sequences to situate readers.

Moreover, since interactive texts call on *both* immersion and engagement, they can offer readers opportunities to enjoy what Mihaly Csikszentmihalyi calls "flow" [17] and Eric Eisenberg dubs "jamming" [24]. Jamming or flow occurs when we feel we are performing both supremely well and effortlessly, and, although the context for flow generally involves well-defined rules, participants feel their options for performance are virtually unlimited. Paradoxically, individuals experiencing flow extend their

skills to cope with challenges, yet lack self-consciousness, a sense of their surroundings, or awareness of the passage of time. Hovering on the continuum between immersion and engagement, flow draws on the characteristics of both simultaneously.

Although reading and watching films occur in a framework separate from the everyday world—one of the primary characteristics of activities that lend themselves to jamming [24]—readers and filmgoers seldom feel they are performing, even when they are grappling with the most difficult texts. Interactive texts, on the other hand, lend themselves to flow since they may require split-second decision-making, superb eye-hand coordination, the ability to "read" characters' intentions and predict their actions, all features of flow that can occur, for example, when athletes or musicians play together. These same skills in a video game enable us to succeed or fail but offer us no opportunities to improvise or arrive at an unforeseen conclusion. You either win at *Mortal Kombat* or you get mown down. Similarly, you either understand most of *Ulysses* and make it to the last pages, or, frustrated and clueless, you stop reading. In both cases, your experience has none of the "open-ended order, capable of continuous further development" Lynch [44] describes. But the agency Murray [52] pinpoints as chief among the satisfactions of interactivity gives the skills we bring to engagement the ability to affect the course of the narrative.

In any case, the entertainment industry seems ready for interactive narratives that build on both agency and complex, yet familiar, narrative schemas. Increasingly, even heretofore diehard gaming aficionados have begun demanding more narrative richness, complex plots and characters [62]. Not entirely coincidentally, these calls for more narrative in gaming arrive when full-motion video and sophisticated graphics have brought games still closer in appearance to the real world [12]—suggesting realism means more than just full-motion video. Invoking immersion and engagement simultaneously will prove highly attractive to both gamers and readers alike, providing them with an arena for challenging their skills and taking risks that has all the look of the world we know with none of the usual risks.

We can provide opportunities for participants to readily enjoy flow states by using elements of already familiar schemas. Readers' enjoyment of affective experiences is tied closely to their expectations, which are linked directly to the schemas readers identify. By invoking familiar schemas from the likes of thrillers, detective stories, and historical fiction, writers and designers of interactive narratives provide readers with an experience that closely matches their expectations. By using interactivity to make the trajectory of the narrative unpredictable and its outcomes, unforeseen, we can provide the paradoxical highly structured context and relative freedom of movement and choice central to experiencing flow. Ultimately, regardless of whether creators of interactive texts pursue chiefly flow, immersion, or engagement, readers find themselves more satisfied when the narrative

brings into play their expectations and prior knowledge of other texts and schemas—even as the interactive text challenges conventions, expectations, and the range of affective pleasures alike.

REFERENCES

1. Aarseth, Espen. Cybertext: Perspectives on Ergodic Literature. Baltimore: Johns Hopkins University Press, 1997.

2. Arnold, Mary-Kim. "Lust." Eastgate Quarterly Review 1,2 (1994).

3. Beaugrande, Robert de. Text, Discourse, and Process: Toward a Multidisciplinary Science of Texts. Norwood, NJ: Ablex, 1980.

4. Beaugrande, Robert de and Benjamin N. Colby, Narrative Models of Action and Interaction, Cognitive Science 3 (1979): 43-66.

5. Bernstein, Mark. The Navigation Problem Reconsidered, in Hypertext/Hypermedia Handbook. Eds. Emily Berk and Joseph Devlin. New York: McGraw-Hill, 1991, 285-298.

6. Bernstein, Mark, Michael Joyce, and David B. Levine. Contours of Constructive Hypertext, European Conference on Hypermedia Technology, 1992. Milano: Association for Computing Machinery, 1992, 161-170.

7. Bernstein, Mark. Span of Attention. HypertextNow. Watertown,MA:EastgateSystems.<http://www.eastgate.com/HypertextNow//archives/Baseball.html>

8. Bernstein, Mark. Patterns, Narrative, and Baseball. HypertextNow. Watertown, MA: Eastgate Systems. <http://www.eastgate.com/HypertextNow//archives/Attention.html>.

9. Bernstein, Mark. Chasing Our Tails. Composition @ Chorus.<http://wwwwriting.berkeley.edu/chrous/composition/bernstein/structure.html>.

10. Birkerts, Sven. The Gutenberg Elegies: The Fate of Reading in an Electronic Age. Boston: Faber & Faber, 1994.

11. Britton, B.K., A. Piha, J. Davis, and E. Wehausen, Reading and Cognitive Capacity Usage: Adjunct Question Effects. Memory and Cognition 6 (1978), 266-273.

12. Brown-Martin, Graham. Hooray for Hollywood. NextGen 2, 2 (1999), 94-101.

13. Bruner, Jerome. Actual Minds, Possible Worlds. Cambridge: Harvard University Press, 1986.

14. Coleridge, Samuel Taylor. Biographia Literaria, in Critical Theory Since Plato. Ed. Hazard Adams. New York: Harcourt Brace, 1971, 468-473.

15. Coover, Robert. The End of Books. New York Times Book Review (21 June 1992): 1, 23-24.

16. Coover, Robert. Pricksongs and Descants. New York: Plume, 1969.

17. Csikszentmihalyi, Mihaly. Flow: The Psychology of Optimal Experience. New York: Harper, 1990.

18. Defoe, Daniel. Robinson Crusoe and A Journal of the Plague Year. New York: Random House, 1948.

19. Douglas. J. Yellowlees. The End of Books—or Books without End? Reading Interactive Narratives. Ann Arbor: University of Michigan Press, 2000.

20. Douglas, J. Yellowlees. I Have Said Nothing. Eastgate Quarterly Review 1,2 (1994).

21. Douglas, J. Yellowlees. Understanding the Act of Reading: The WOE Beginner's Guide to Dissection. Writing on the Edge 2, 2 (1991): 112-126.

22. Douglas, J. Yellowlees. Wandering through the Labyrinth: Encountering Interactive Fiction. Computers and Composition 6, 3 (1989): 93-103.

23. Douglas, J. Yellowlees. When the Senses Become a Stage and Reading Is Direction: Performing the Texts of Virtual Reality and Interactive Fiction. *TDR: The Drama Review* 37, 4 (1993): 18-37.

24. Eisenberg, Eric M. Jamming: Transcendence through Organizing. Communication Research 17, 2 (April 1990), 139-164.

25. Frank, Joseph. Spatial Form in Modern Literature, in Essentials of the Theory of Fiction. Eds. Michael Hoffman and Patrick Murphy. Durham: Duke University Press, 1988, 85-100 .

26. Geyh, Paula, Fred G. Leebron, and Andrew Levy, eds. Postmodern American Fiction: A Norton Anthology. New York: W.W. Norton, 1998.

27. Gianetti, Louis. Understanding Movies. 5th ed. Englewood Cliffs, NJ: Prentice Hall, 1990.

28. Gilligan, Shannon. Who Killed Sam Rupert? Virtual Murder™ 1 Portland, OR: Creative Multimedia Corporation, 1993.

29. Gilligan, Shannon. The Magic Death: Virtual Murder™ 2 Portland, OR: Creative Multimedia Corporation, 1993.

30. Gilligan, Shannon. Who Killed Brett Penance? The Environmental Surfer: Murder Mystery 3 Portland, OR: Creative Multimedia Corporation, 1995.

31. Gilligan, Shannon. Who Killed Taylor French? The Case of the Undressed Reporter: Murder Mystery 4 Portland, OR: Creative Multimedia Corporation, 1995.

32. Gombrich, E.H. Art and Illusion: A Study in the Psychology of Pictorial Representation. Princeton: Princeton University Press, 1956.

33. Groden, Michael. Ulysses in Progress. Princeton: Princeton University Press, 1977.

34. Jackson, Shelley. Patchwork Girl: by Mary/Shelley/and Herself. Watertown, MA: Eastgate Systems, 1996.

35. Joyce, James. Ulysses. New York: Vintage, 1980.

36. Joyce, Michael. Afternoon: A Story. Watertown, MA: Eastgate Systems, 1990.

37. Joyce, Michael. Nonce Upon Some times: ReReading Hypertext Fiction, Modern Fiction Studies 43, 3 (1997), 579-597.

38. Joyce, Michael. Of Two Minds:Hypertext Pedagogy and Poetics. Ann Arbor: University of Michigan Press, 1995.

39. Joyce, Michael. Siren Shapes: Exploratory and Constructive Hypertexts, Academic Computing 3, 4 (November 1988), 37-42.

40. Joyce, Michael. Twelve Blue. <http://www.eastgate.com/TwelveBlue/>

41. Landow, George P. The Dickens Web. Watertown, MA: Eastgate Systems, 1992.

42. Langer, Suzanne. Feeling and Form. New York: Scribner, 1953.

43. Laurel, Brenda. Computers as Theatre. New York: Addison-Wesley, 1991.

44. Lynch, Kevin. The Image of the City. Cambridge, MA: MIT Press, 1960.

45. Marshall, Catherine C. and Frank M. Shipman, Searching for the Missing Link: Discovering Implicit Structure in Spatial Hypertext. Hypertext '93. http://www.csdl.tamu.edu/~shipman/ht93-paper/ht93-paper.html.

46. Miller, Laura. www.claptrap.com, New York Times Book Review. 29 August 1998: 43.

47. Miller, Robyn and Rand Miller. Myst. Novato, CA: Broderbund, 1993.

48. Moulthrop, Stuart. Hypertext and 'the Hyperreal', Hypertext '89 Proceedings, Baltimore, 1989, 259-267.

49. Moulthrop, Stuart. Toward a Paradigm for Reading Hypertexts: Making Nothing Happen in Hypermedia Fiction, in Hypertext/Hypermedia Handbook. Eds. Emily Berk and Joseph Devlin. New York: McGraw-Hill, 1991, 65-78.

50. Moulthrop, Stuart. Victory Garden. Watertown, MA: Eastgate Systems, 1991.

51. Murdoch, Iris. The Unicorn. London: Chatto & Windus, 1963.

52. Murray, Janet. Hamlet on the Holodeck: The Future of Narrative in Cyberspace. New York: The Free Press, 1997.

53. Nell, Victor. Lost in a Book: The Psychology of Reading for Pleasure. New Haven: Yale University Press, 1988.

54. Paul, Christiane. Unreal City: A Reader's Companion to The Wasteland. Watertown, MA: Eastgate Systems, 1995.

55. Robbe-Grillet, Alain. In the Labyrinth. Trans. Christine Brooke-Rose. London: John Calder, 1959.

56. Rosenberg, Jim. The Structure of Hypertext Activity. Proceedings of Hypertext '96. http://www.cs.unc.edu/~barman/HT96/P17/SHA_out.html

57. Rumelhart, David E. Schemata: The Building Blocks of Cognition, in Reading Comprehension: Perspectives from Cognitive Psychology, Linguistics, Artificial Intelligence, and Education. Eds. Rand Spiro, Bertram C. Bruce, and William F. Brewer. Hillsdale, NJ: Erlbaum, 1980: 33-59.

58. Schank, Roger C. Dynamic Memory: A Theory of Reminding and Learning in Computers and People. Cambridge: Cambridge University Press, 1982.

59. Schank, Roger C. Tell Me a Story: A New Look at Real and Artificial Memory. New York: Scribners, 1990.

60. Schank, Roger C. and Robert P. Abelson. Scripts, Plans, Goals and Understanding: An Inquiry into Human Knowledge Structures. Hillsdale, NJ: Lawrence Erlbaum Associates, 1977.

61. Shono, Haruhiko. Gadget: Invention, Travel, and Adventure. Synergy, 1994.

62. Sierra Studios Online Survey. August 25, 1999. http://www.sierrastudios.com/content-survey.html.

63. States, Bert O. Dreaming and Storytelling. Ithaca: Cornell UP, 1993.

64. Strickland, Stephanie. True North. Watertown, MA: Eastgate Systems, 1997.

65. Titanic: Adventure out of Time. Knoxville: Cyberflix, 1996.

66. van Dijk, Teun. Macrostructures: An Interdisciplinary Study of Global Structures in Discourse, Interaction, and Cognition. Hillsdale, NJ: Lawrence Erlbaum Associates, 1980.

67. Watt, Ian. The Rise of the Novel: Studies in Defoe, Richardson and Fielding. Berkeley: University of California Press, 1964.

68. Woolf, Virginia. Mrs Dalloway. 1925. London: Grafton Books, 1976.