

The Pleasures of Immersion and Interaction: Schemas, Scripts, and the Fifth Business

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ABSTRACT

Presently, designers of interactive narratives and video games have only a slender understanding of the aesthetic experiences their audiences and users seek. Using schema theory this study articulates the two varieties of aesthetic pleasures users of interactive works enjoy: immersion and engagement. 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: interactive narratives, video games, game design, aesthetics, reading.

"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* [57].

"Those roles which, being neither those of Hero nor Heroine, Confidante nor Villain, but which were nonetheless essential to bring about the recognition or the dénouement, were called the Fifth Business in drama and opera companies organized according to the old style; the player who acted these parts was often referred to as Fifth Business." —Robertson Davies, *The Fifth Business: The Deptford Trilogy* [22].

INTRODUCTION: SCHEMAS AND THE PLEASURE PRINCIPLE

Oddly enough, after decades of theorizing about texts, their authors (or lack thereof), and their relationship to readers, economics, and culture, we know comparatively little about the affective pleasures of reading. Why do we read for pleasure? What keeps us turning the pages between an author's name on the title page and a novel's last gasp on its very last page? How are we able to turn a sprinkling of abstract symbols on a white page into scenarios and vignettes so arresting that we can shut out turbulence and the roar of aircraft engines on a red-eye merely by reading a flimsy paperback book? Few critics have dared tackle the affective aspects of reading, although many critics have pointed out the importance of pleasure to the act of reading itself [4, 15, 39, 69, 81]. Moreover, few critics would have thought the topic worthy of scrutiny, since the conventions shaping the acts of writing and reading print narratives alike are so well-established and so familiar that we can function perfectly well without the faintest inkling of how the whole enterprise works—just as we do with so much of the technology that surrounds us.

Enter interactive narratives, hypertext fiction, and video games that offer scenarios, tools, plots, and characters that demand input from their users. Writers and designers of interactives must work in relatively uncharted territory. First, we not entirely understand where precisely interactives fall on the continuum of pleasurable—or ludic—pursuits. Second, we must also grapple with a paucity of conventions, fixed genres, and precedents that tell us the sorts of interactions users expect, how to flag meaningful options or tools, or even how to signal closure. At every turn, we're dogged by unresolved, sticky questions. On the continuum of ludic pleasures do interactives fall somewhere, say, between a game of chess and watching *The Sixth Sense*? Or do they, too, occupy a range of positions on that continuum, each interactive offering an affective pleasure as distinctive from one another as chess itself is from watching films? How much freedom do users want when it comes to plotting strategy or

getting acquainted with characters? And is a cut-scene that signifies closure a reward for working your way through a video game's myriad of fire-fights, kung-fu contests, and puzzles? Or do cut-scenes nullify the openness of both narrative and plot seemingly promised by the entire concept of interactivity? If we can understand our audiences' affective experiences in reading hypertext fiction or playing interactive games, we can begin to determine the types of stories, tools, and even interfaces that lend pleasure to the act of reading and interacting with hypertext and hypermedia.

To date, most studies of reading and hypertext have focused almost entirely on readers' physical and cognitive encounters with texts [7, 8, 9, 23, 25, 74], not on the affective pleasures readers derive from their encounters. Yet we can explore the affective dimension of interactive narratives without invoking arguments about either hard-wired or socially engendered aesthetics by using schema theory to analyze hypertexts and exploring how these frustrate or play off readers' schemas of other texts. Long employed by linguists [3, 77], cognitive psychologists [15], art historians [36], and AI researchers [11, 75, 76], schema theory charts how information processes can shape perception and action alike, focusing our expectations and even determining the fine grain of our interactions with objects [4]. Defined simply, schemas are the building-blocks of information-processing, a cognitive framework that determines what we know about the world, the objects it contains, the tasks we perform within it—even what we see [76].

Schemas enable us to perceive objects and occurrences around us and to make sense of them efficiently by consulting our ready-made store of similar occurrences and understandings, which we gain from reading, personal experience, and even advice we receive from others [2]. Schemas may be as simple as the series of understandings and actions that enable us to both recognize what a car is and how to drive one—or as complex as our understanding of the specific roles characters play in, say, teen slasher flicks, where we expect basements to be hotbeds of horror or peril and teenagers having sex to become victims. Schemas also entail scripts, sets of tasks or actions appropriate to certain schemas. In Schank's famous "restaurant script," people entering restaurants understand, seemingly automatically, what to do with a menu, how to order, and how to behave throughout the restaurant experience [71]. Scripts, moreover, are flexible, as we can rapidly and easily modify existing scripts to accommodate new scenarios. A single restaurant script easily covers a visit to McDonald's, Le Cirque, a sushi bar, even a Roman *antipasti* restaurant, where you merely help yourself to whatever dish is being handed around.

Once we have identified a single schema, we begin calling on relevant scripts that shape our perception, navigation and interaction within a scenario—whether it exists in life, on a page, or in a stroll on the decks of *Titanic* in the interactive game *Titanic: Adventure Out of Time* [78]. We

watch the trials and travails of a couple in a romantic comedy with considerably less trepidation than we would the eponymous couple in the likes of *Romeo and Juliet*, which we know to be a tragedy, because our schemas for romantic comedies tell us that, in the end, the obstacles exist merely to make the final union all the more satisfying. We know we must treat all clues as potentially relevant when we read a Patricia Cornwell mystery, just as our schemas for mysteries also tell us that the author will dangle as many false leads, innocent suspects, and red herrings as she possibly can before us—all tactics to delay our resolving the mystery's central puzzle until the book's ultimate pages.

Schemas are, moreover, such vital perceptual tools that, when objects or works violate long-held conventions, we become frustrated and fail to understand them. Films like *Jacob's Ladder* [58] become box office bombs because they begin by inviting viewers to latch onto a single schema—initially, a thriller involving war games in the Mekong Delta and psychotropic drugs—then rapidly deploy elements from contradictory schemas. The film, by turns, shuttles through a series of schemas, becoming a horror film complete with the requisite demons and aliens in nurses' uniforms, a thriller about a government conspiracy, and a horror film about madness. Throughout, the film remains too slippery for readers to understand it through a single schema. Not surprisingly, its resolution could never prove satisfying to any audience. The film ultimately can resolve the dilemma posed by only a single schema—which turns out, unfortunately, to belong to a fifth schema that is not revealed until the film's final scene. *Jacob's Ladder* ends with an "oh-it-was-all-a-dream" schema that accounts for the illogical and fantastic nature of events by situating them inside a dream or, in this case, a dying man's last hallucinations.

PLEASURE: IMMERSION AND ENGAGEMENT

When aesthetic objects invite us to rely on certain schemas, they are not, however, necessarily guaranteeing us an entirely predictable experience. Schemas may enhance our pleasure in, say, reading a John Grisham paperback, because they provide a detailed framework that frees us to focus intently on the minutiae of the narrative by providing us information about what, roughly, to expect from the characters, events, and plot generally, as well as, of course, its eventual outcome [4]. The presence and nature of schemas in a work, moreover, dictate not only the type of genre the work belongs to, but also both the sort of audience the work attracts and the kind of affective experience that audience may expect. Genre fiction generally hews tightly to highly normative schemas, while postmodern novels tend to invert narrative conventions and rupture the stock developments and resolutions of mainstream fiction. Not surprisingly, the predictability afforded by genre schemas makes them ideal fodder for the trance-like reading cognitive psychologists like Victor Nell [70] note that is the hallmark of the immersive reading experience. And, of course, as we might expect, immersive affective experiences also tend to garner the largest

audiences, as readers pursue immersion to temporarily escape the stresses of everyday life, or vicariously enjoy the exploits of fictional characters as an antidote to the mundanity of their own lives [81.] Contrary to expectations, however, our immersion in what some critics might scoff at as “light reading” [70] stems from the steady, unbroken rhythm of our reading, which fully occupies our cognitive capacities [13]. Conversely, readers plowing through more demanding texts, works by what Robert Coover [17] has dubbed “difficult” writers enjoy no such spell, as the cognitive demands of grappling with the text tend to be discontinuous, involving shuttling between competing schemas, prospecting and retrospectively through the text, and pausing over obscure passages [13, 70]. Highly normative schemas enable readers to “lose” themselves in the text in what we might call an “immersive” affective experience. When immersed in a text, readers’ perceptions, reactions, and interactions all take place within the text’s frame, which itself usually suggests a single schema and a few definite scripts for highly directed interaction. Conversely, in what we might term the “engaged” affective experience, contradictory schemas or elements that defy conventional schemas tend to disrupt readers’ immersion in the text, obliging them to assume an extra-textual perspective on the text itself, as well as on the schemas that have shaped it and the scripts operating within it.

IMMERSIVE INTERACTIVES: BEYOND SHOOT-OUTS AND HUNT-QUESTS

“[T]oday’s most successful interactive artists ultimately see interactivity as an evolutionary (rather than revolutionary) step for storytelling.” —Brent Hurtig, “The Plot Thickens” [41].

Not surprisingly, the earliest digital interactives, video games, drew their cues heavily from a singular schema, turning the early commercial computer games into jazzed-up versions of video arcade games. Whether by accident or design, early game developers had hit digital pay dirt by founding their first ventures on the bedrock of two essentials: a recipe for interaction that all but guaranteed a deeply immersive experience and strong, normative schemas borrowed from already-familiar forms of entertainment. The history of invention is, after all, littered with dazzling innovations that either withered rapidly into obscurity or, at best, hibernated for decades before their eventual adoption, mostly due to the object’s very newness [2]. Inventions that are discontinuous with earlier devices and tools tend to offer users few familiar schemas. The fax, phonograph, answering machine, tape player, and VCR all languished for decades before becoming household fixtures, largely because each of these inventions required users to develop new schemas to accommodate them. Conversely, technologies like Edison’s incandescent light were adopted at the technological equivalent of light-speed, despite potentially crippling problems with the limitations of wiring and distribution of centralized electricity, almost entirely because the new innovations essentially invited users to rely on long-familiar, comfortable schemas and scripts [40] derived from the very forms of technology the

innovations were designed to replace. Ironically, innovations seem to be adopted most rapidly when their newness is domesticated, so to speak, by design features that invite us to treat the new object as if it were merely an extension—albeit an improved one—of a familiar object or device. Early video games like Pong stuck to the simple, rigid schema of a ball game with the ball batted between players or against walls. Later successful video games drew off arcade staples that involved escaping through mazes—itsself drawn loosely from the pinball schema—or raining bullets on would-be protagonists, a schema drawn from that staple of county fairs everywhere, the shooting gallery. The result: a game which imposed rigid rules, drawn from already familiar games which could thus be immediately grasped by users, a game featuring fresh local details like gobbling mouths or souped-up weapons, requiring a steady rhythm of interaction. Ironically, the reader paging through Balzac or Dickens, or, for that matter, Judith Krantz, has entered into roughly the same immersive state, enjoying the same high, continuous cognitive load, as the runty kid firing fixedly away at *Space Invaders*.

Later generations of video games have colonized the same turf with notable success—both Sonic the Hedgehog and Super Mario Brothers, for example, drew off familiar arcade schemas. Yet video and PC game designers have encountered difficulty whenever they have attempted to stray into territory where no dominant schemas reign. Chief among any designer’s difficulties is how to invite users to interact with the text itself. While the shoot-out is always immediately comprehensible, that particular schema doesn’t easily offer designers sufficient local details to completely differentiate their latest game from the droves of other shoot-outs that have preceded it. Perhaps not terribly surprisingly, game designers have mostly mined only a single other schema: the treasure-hunt-cum-grail-quest, familiar to users of *Myst* [64], *Titanic* [84], *Grim Fandango* [37], and, for that matter, any other interactive that doesn’t require users to shoot anything that moves. Yet the hunt-quest remains a remarkably hardy genre, as its schema, unlike the shoot-out, permits a wealth of local detail, sufficiently rich that its users can become immersed in grappling with both its intricacies and what to do with it.

SCRIPTS, VOICE-OVERS, AND THE FIFTH BUSINESS

In immersive interactives like *Myst* or Shannon Gilligan’s *Virtual Murder* series [32, 33, 34, 35], our pleasure stems from our ability to discern a single schema and the several scripts it offers us for both interpretation and directed action. Before we so much as glimpse the title screens of your typical hunt-quest, we already know we need to listen intently, collect everything we can lay our mitts on, and put together our tools and clues to solve the local challenges that confront us, which, in turn, will enable us to solve the interactive’s grand challenge—usually something on the order of liberating a prisoner [37, 64], altering the course of history [84] or saving the planet [87]. Still, designers have no such clear choice of scripts for interaction. We all understand that guns or knives are essential to shoot-outs,

but no such clear scripts exist for actions during the hunt-quest. Furthermore, how do you indicate readiness for action or differentiate the items your protagonist must collect from the normal detritus that makes an environment look convincingly realistic? Contrary to some theorists' beliefs [55, 69], the existence of tools intra-frame or extra-frame does little to disrupt the user's immersion in the interactive. For example, solving a puzzle, pursuing a clue, or surviving a knife fight involves action which can potentially spill outside the narrative's frame—as in the multiple choice replies *Titanic* offers as responses to characters' conversations with you [84] or the inventory of items protagonist Robert Cath possesses in *The Last Express* [62]. But the aesthetic remains largely immersive as long as the story, setting, and interface adhere to a single schema.

Users face further interface challenges from narratives like *Last Express* that attempt to stray from reliable gaming conventions governing the user's actions, mostly decoding puzzles and dismembering enemies—all of which may frustrate more than engage users expecting well-defined scripts and a tight framework for directed action. In *Titanic*, for example, if you fail to keep an assignation or meander through the ship, the narrative's clock-time halts abruptly, and all characters vanish, save your steward, who appears periodically to throw you out of the First Class Smoking Lounge or Verandah Café [84]. No agents, frames, or tools exist to jump-start the narrative again once you neglect to pick up the right clues. Even with its highly normative hunt-quest schema, *Myst* frustrated users searching vainly for clues into acts of desperate, random thrashing with the cursor on shrubbery, sundials, library walls—anything that looked like a candidate for the next puzzle-challenge [64]. But even with better indicators for interaction, like *The Longest Journey's* [56] palette of annotated cursor and potential actions (eye, mouth, hand) that flag your potential actions with solid or broken lines and a variety of colors, users are simply left with more elegant weapons to thrash your simulated environment with. If the environment seems particularly bereft of clues or you don't happen to hit on the ingenious and incredibly improbable notion of using a twig and dinosaur scale to create a funnel, as in *Longest Journey*, immersion evaporates, and you're left trying to vainly intuit what on earth the designers had in mind when they created the particular scene you're presently trapped in.

If anything, video game designers, more than their PC counterparts, have even thornier dilemmas awaiting them in interface design during their forays into territory outside the shoot- and hunt-quest genres [78, 83]. With *Sydney 2000* [83], Dreamcast users can train athletes, expose them to some extra coaching, test them in qualifying trials, and, finally direct them to compete in the Olympics. The problem for users and designers alike: how to provide the means for a potentially complex series of interactions using the same controller originally created for shoot-outs. The solution: users must toggle manically between the former "shoot" switches to provide athletes with the strength, say, to complete a 170 Kg clean and jerk. The greater problem

still: to toss the javelin, shoot skeet, triple jump, kayak, or dive, you're left frenetically toggling between the same switches you've just used to provide a sprinter with speed in the 100 meters and to give your weight-lifter, at least theoretically, enough gas to complete a dead lift. The script for interaction shifts with every event and sometimes, even between training mode and trial/competition modes, leaving users in what promises to be the most immersive of interactive experiences—video games, after all, are direct descendants of the immersive arcade shoot-outs—paging angrily through the slender instruction pamphlet, trying to figure out what functions the "A" and "B" buttons will signify for the next ten minutes.

For our affective experience to remain immersive, both narrative and interface alike need to overtly guide or curtail our possibilities for action. Interactive games fulfill their promise as immersive when they offer us an obvious schema for 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 [81]. In *Gadget* [79] 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. In the *Virtual Murder* series, Gilligan [32, 33, 34, 35] provides a detective sidekick who summarizes the crime scene, provides thumbnail sketches on suspects, or weighs in with an opinion when queried. The series also includes the occasional voice-over by a police superior who harangues you with the work remaining to be completed and the time remaining on your "game" clock.

Both the voice-over and agent are fortuitous additions to Gilligan's series of interactives and, not coincidentally, both are drawn explicitly from film and stage. Beginning with the Greek chorus—itself an early form of voice-over—dramatists and directors have used voice-overs to guide their audiences through scenes, ensuring audiences understood the significance of an action, the true nature of a cloaked villain, or the mental state of some characters. In cinema, writers and directors traditionally use voice-overs to establish conditions at the outset of a narrative or during substantial changes in location or time, or to voice interior monologues. But some directors have also used voice-overs to make entire narratives intelligible, a vital function in films that rely on a pastiche of images without heavy sequential continuity or on narratives that defy conventions or logic. Famously, Francis Ford Coppola was troubled by the 1.5 million feet of film shot for *Apocalypse Now*, believing he had only "about a twenty percent chance" of assembling the elements intelligibly into a successful feature. Furthermore, sneak preview audiences remained puzzled by the logic and significance of several of the film's key scenes, most troublingly, the film's conclusion. When Coppola, however, commissioned writer Michael Herr to create a voice-over interior monologue for the protagonist—a voice-over narrative that spanned virtually the entire film—audiences immediately understood the

film's events, and *Apocalypse Now* reaped over \$100 million at the box office [20]. Remarkably, voice-overs have been all but unused in interactives: in *The Last Express* [62], you understand Robert Cath's feelings via the occasional voice-over, and both April Ryan in *Longest Journey* [56] and *Grim Fandango's* Manny Calavera [37] use voice-overs. But both Ryan's and Calavera's voice-overs exist simply to inform you what their characters *cannot* do. When you point either character toward an item that doesn't function as a tool or potential clue, both essentially tell you, "I wouldn't do that" or "I don't think that will work." Game designers, by eschewing the use of anything approximating a voice-over, are forcing users to face challenges akin to understanding the events in a narrative without benefit of either first-, third-person or omniscient narration (which is achieved in cinema via first- or omniscient point-of-view camera), what would prove a challenge even in the comparative cozy familiarity of the print novel.

Gilligan's sidekick, a nameless help-mate portrayed initially by Gilligan herself and, in later additions to the *Virtual Murder* series [34, 35], by actress Sherilyn Fenn, is also an apt throwback to earlier narrative forms. While her cropping up in a police procedural is, perhaps, unremarkable, she remains the lone example in interactives of what Robertson Davies termed "the Fifth Business" [22] or the agent who exists solely to chivvy the characters and plot toward its conclusion. In police procedurals, detective novels, and mysteries of all stripes, of course, the Fifth Business is usually the protagonist's sidekick. Sherlock Holmes, famously, had Watson to bounce ideas off and to help him unravel clues often unwittingly, and even Inspector Morse had the much-put-upon Sergeant Lewis. Both Watson and Lewis performed, like every good agent, the function of sniffing down false leads and interviewing suspects while their respective bosses got down to the real detective work and eventually solved the case—significantly, never without some intervention from their sidekicks. Of course, both agents also function as narrative foils to their bosses. Watson and Lewis are famously dim where their superiors are quick-witted, badly read and poorly mannered where Holmes and Morse are educated, cultured men of the world. Yet the agent is also the mystery's unsung catalyst, a force who can usher the plot along efficiently precisely because he or she is an unobtrusive character never quite in the spotlight. Perhaps, given the paucity of scripts drawn from earlier media, the absence of agents from interactives should seem unremarkable. Yet the agent is such a potent tool, one that can clarify interface elements and possible actions, that we can only wonder why agents remain so strangely unused—apart from Microsoft's brief, mid-nineties foray into plugging an obnoxious agent named Bob into its desktop interface. An agent in *The Longest Journey* could make suggestions about what April Ryan ought to do with the dinosaur scale and twig, saving you from scrabbling for the cheat-sheet walkthrough—decidedly an immersion-busting experience. Similarly, an agent or voice-over could tell you how to position *Grim Fandango's* forklift in the

elevator before you embark on your fortieth attempt at halting the elevator or risk losing any remaining vestiges of sanity. Or you could enlist an agent or toggle the voice-over mode on during the early stages of the interactive, when you're still determining the conventions and constraints governing the plot, characters' actions, and environmental cues, only to leave both these guides behind once you've fully grasped the details and immersed yourself in the narrative.

PLEASURES OF IMMERSION, PLEASURES OF ENGAGEMENT

The pleasure of immersion in interactives stems from our ability to take guided action and see the outcomes from our choice of one or more scripts within a single schema. In contrast, the pleasure of engagement with hypertext fiction comes from users' access to a wide repertoire of schemas and scripts, our attempts to discover congruences between the hypertext and an array of often mutually exclusive schemas, and, ultimately, our ability to make sense of the work as a whole. Even though Janet Murray's [69] list of plots as symbolic actions include sensemaking and assembling fragments into a coherent whole, Murray's objection to what she calls "structured literary hypertext" reveals a criterion for aesthetic pleasure clearly founded only on immersion: "navigation unfold[s] a story that flows from our own meaningful choices" [69]. Yet readers of modernist works like *Mrs. Dalloway* [88], *The Good Soldier* [29], *In the Labyrinth* [73], and *Ulysses* [45] must actively wrestle with wandering narrative perspectives, tortuous representations of time, and deliberate disruptions in space, time, and causation, as well as the requirement that they ultimately understand the entire work relative to its spatial form. Anyone who confuses Great Works with an aesthetic of immersion should remember Joseph Frank's famous declaration about *Ulysses*, which, he claimed "could not be read, only reread." [30] These texts engage readers deeply because do not follow schemas for which readers can unthinkingly apply ready-made scripts [72]. Instead, they violate existing conventions, switch schemas, and, in the case of works like *In the Labyrinth*, violate even our assumptions about continuity from one paragraph or even sentence to the next [73].

Not surprisingly, engagement tends to be pursued and enjoyed by those who are widely read, since they have access to a vast array of schemas and scripts. Readers who enjoy engagement also tend to enjoy confronting situations for which they lack scripts, as these provide opportunities for learning, as opposed to merely performing one of a series of scripts within a conventional framework. With a hefty repertoire of scripts to call upon, the well-read are also more likely to recognize when—and to guess how or why—narratives violate long-familiar conventions and patterns. The reactions of even well-intentioned critics—witness Murray's [69] "privileging confusion"—to hypertext fiction grows from confusing engagement with immersion, as well as from the fluid, still-evolving nature of schemas and scripts in hypertext narratives.

Yet even the earliest readers [25] of the first published hypertext narrative, *afternoon*, experienced a kind of engagement that would have seemed familiar to readers of *Ulysses* or “The Wasteland.” First, readers bring to new media their schemas and scripts from older media [561, just as hypertext fiction itself draws on conventions inherited from print for plot, character, intention, and tropes [11]. Second, published criticism which, in the cases of Joyce and Eliot, included symbolic “keys” to their work, aided readers in developing schemas to fit the new material. Joyce circulated notes that mapped Stephen’s and Leopold Bloom’s day in Dublin onto the adventures of Odysseus [38], while Eliot extensively footnoted his own poem [28, 71]. Readers of hypertext fiction, like Joyce’s and Eliot’s audiences, are more likely to seek out secondary sources to supplement their array of schemas for understanding the text. These “engaged” readers are also more likely to employ these schemas as simply part of a repertoire, rather than as sources for controlling scripts that determine singular interpretations of a work. Such secondary sources include Joyce’s own extensive criticism on hypertext aesthetics [47, 48, 49], as well as a growing body of criticism on the narrative significance of navigational mechanisms in hypertext [5, 6, 23, 37, 69]. Third, even in a relatively new genre, some of its newly minted “grammar” and tropes are accessible to early audiences: cross-cutting, special effects, and the shot-reaction shot sequence all appeared during cinema’s nickelodeon era [31]. In complex hypertexts, immanent structures include proximity signifying causal or relational connections between lexias in spatialized text [59], as well as recurrence to remind readers of previously encountered lexias or to situate already encountered lexias in new contexts where they take on new meanings [6, 26]. Mark Bernstein [8, 9] has also identified cyclical repetition broken to signify closure [25, 46], contour, where cycles coalesce or collide [6, 50], and montage that establishes connections across the boundaries of nodes or links, as used by Landow [52, 53] Jackson [43] and Paul [71].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, further interpretations of the significance of spatial relationships and links between lexias, of link types and their conditions. Long-term engagement with the texts, the necessary rereading Michael Joyce describes [47] makes some relations immanent, nullifies some hypotheses, thwarts some navigational strategies, and generally enables readers to enlarge their repertoire of textual aesthetics still

¹Other devices Bernstein notes [7, 9] include the missing link [39, 46, 65] and the cognitive maps in hypertexts like *True North* [82] and “I Have Said Nothing” [24] that represent the relationships between narrative lexias and sequences and serve as tropes for the narratives themselves. further. Finally, when hypertext episodes [63, 68] also represent causally linked lexias that generate narrative

tension, readers may become immersed in the narrative. Even when immersion gives way to engagement, the immersive lexias or episodes can still act as a centripetal force that compels us to become engaged with the narrative [26].

IMMERSION INTO ENGAGEMENT INTO FLOW

The “episode vortex,” as Jim Rosenberg notes, however, can just as easily frustrate readers, launching them into “foraging” for the next episode [74]. While immersion may easily lure readers into interactive narratives and organize their initial engagement, replacing promised immersion with engagement can also frustrate readers, even when they can develop a script that situates their frustrated immersion as strictly intentional, a deliberate effect designed by the author [5].

Even in the throes of engagement, disorientation in hypertexts is potentially more disconcerting than the momentary discomforts we experience in other media—notwithstanding our budding repertoire of effects and gambits that signify. The dreaded “lost in hyperspace” [27] problem is due partly to our awareness that hypertexts exist in virtual, three dimensional space (which may or may not be represented to readers via maps or spatial navigational tools), partly to our awareness that links often involve recursion and complex conditionals, making visiting every lexia or link once seldom the equivalent of having experienced the entire work. When we consider the affective dimension, however, the absence of guides for the length of time occupied by our engagement or immersion may be still more significant. When we sit down with a novel, settle ourselves into a Broadway theatre or our local cinema, we know approximately how long our immersion or engagement will last. Book chapters, like film running times, often owe as much to the length of time writers require to develop stories and episodes as they do to publishers’ and producers’ perceptions of the attention span and disposable time common to contemporary audiences. While audiences can prove equally adroit at immersing or engaging themselves in lengthy narratives fanning out over weeks and, even years in radio and television serials [7, 23] as well as in professional sports [7, 8], they require clear-cut guides on the duration of each local session. Football, basketball, and hockey are clock-determined; baseball has nine regular innings; plays have either three or five acts; serials occupy thirty or sixty minutes of airtime. Time can also increase the signifying power of narrative developments and tropes: cues about a character’s impending mortality that may not seem particularly significant in Act III acquire dramatic significance when revealed to us in the final moments of Act V.

Not coincidentally, designers of interactives frequently build into games central metaphors or tools that rely on time. All the *Virtual Murder* interactives use a conceit about the seven hours that generally elapse between the discovery of a crime and the swearing out of a warrant for the suspected perpetrator’s arrest [32, 33, 34, 35]. Both *Titanic* [84] and *Last Express* [62] unfold against time

constraints imposed by, respectively, the sinking of the liner and the onset of World War I. Further, in both the *Virtual Murder* series and *Titanic*, agents periodically surface both to remind you of time passing and to nag you to keep assignments, ensuring your immersion doesn't shade quickly into frustration. Other interactives rely on stages that signal readers' progression through the text: "ages" for *Myst* [64], "realms" for *Obsidian* [87]. Hypertext fictions, however, lack such clear signals to readers, making it difficult for readers to determine if their script-acquiring and -developing have been successful in helping them understand the hypertext as a structure of narrative possibilities, or if they need to accommodate, modify, and generate still more scripts. Some writers have built forms of closure into hypertexts that enable readers to pause in their reading or leave it completely [23, 46, 54, 67]. But link conditions in complex hypertexts can yield different juxtapositions of lexia and fresh narrative possibilities, just as a familiar episode may branch in several unexpected directions the next time out, mitigating the cues potentially offered by these approximations of closure.

Finally, while immersion may shade into engagement—now an imminent development with recent calls in the interactive game industry for more backstory and narrative [14, 80]—and engagement into immersion, neither of these affective dimensions maps all that tidily onto most definitions of interaction [12]. As Joyce [47] and Aarseth [1] have noted, readers of most hypertext fiction are merely exploring the narrative, not constructing its links and rearranging its structure, or even generating lexia and links themselves. While the advent of the World Wide Web and collaborative structures like Brown's Hypertext Hotel [18] suggest that hypermedia's contribution to aesthetics may be a blurring of the line between reception and creation, the relatively limited interactions of immersive or engaging interactives should not likewise limit our quest for features, metaphors, and conventions that enhance our affective experiences.

Given the enhanced immersive possibilities of full-motion video, not to mention virtual reality, coupled with hypertext fiction's complex possibilities for engagement, future interactives could easily enable casual readers to experience what Mihaly Csikszentmihalyi calls "flow," a condition where self-consciousness disappears, perceptions of time become distorted, and concentration becomes so intense that the game or task at hand completely absorbs us [21]. Since flow involves extending our skills to cope with challenges, a sense that we are performing both well and effortlessly, this state hovers on the continuum between immersion and engagement, drawing on the characteristics of both simultaneously. Presciently in the early eighties, Sherry Turkle [85] noted something like flow states in teenagers grappling with computer games. Where immersion involves identification with characters and narrative elements—the local details that keep us involved even when we know the plot's trappings intimately—engagement involves deciphering the author's or game designers' intentions. During a flow state, Turkle

noticed, teenagers both identified utterly with the objects they were manipulating—the equivalent of "becoming the pinball," unthinkable to the player of the analogue arcade game—just as they also were deeply involved in determining the constraints built into the game. Most vitally, however, she witnessed player after player obliged to keep up with a rhythm dictated by the game itself, a "relentless. . . demand that all other time stop. . . and that players take full responsibility for every act" [85]. The combination of all three conditions, she realized, when she interviewed inveterate game players from teenaged social misfits to stressed-out banking executives, enabled players to experience the same characteristics of flow first identified by Csikszentmihalyi. All players attested to a sense of stepping outside both the real world and its time, while at the same time retaining an acute perception of the constraints of the game-world and game-time and an ability to play strategically within its constraints.

Flow is, however, elusive, fleeting, and intensely problematic. The social misfits and uptight executives Turkle interviewed most likely achieved flow states during gameplay at least as much due to their desires to achieve mastery over something, however brief and fictive, and not necessarily because they identified intensely with the all-but-non-existent characters or environment in the video games they played. Artists, writers, professional athletes, and musicians can experience flow states during practice or performance—as can connoisseurs of music, film, dance, or sports. For example, film critics may notice how deep focus, changes in film stock, and oblique angles frame a sequence or allude to other films—an extra-textual perspective on the film that is characteristic of engagement—even as they remain deeply immersed in the characters and plot developments of the narrative playing before them. Further, since engagement tends to focus our attention on the frame and materials themselves, texts like *Ulysses* or *afternoon* tend to immerse us only for short periods before demanding our engagement. As interactives, however, begin offering us worlds that increasingly resemble the one outside the text [14, 78], and writers begin introducing into them complex plots, characters, and orienting devices like voice-overs or agents, even casual readers may one day experience the flow that today only a privileged few enjoy when watching or creating narratives.

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