

# Interactive Digital Narrative: The Genealogy of a Field

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**Abstract:** *A gifted young storyteller, orphaned at birth, has traced their origins to the city of knowledge. Fascinated by the youth's potential, the scholars each lay claim.*

The cinematographer maps their filmic features, a vocabulary of edits and frames; the actor cites their own history of interactivity and dynamic audiences; the author notes the storyteller's obvious place in the illustrious family of narrative convention; the computer scientist, present at the birth, is keen to ensure their place is recognised; the ludographer, youngest of the scholars, denies such reliance on any family history, instead seeing them as the start of a new, illustrious line - and encouraging the storyteller to define a new way of thinking.

This chapter charts the intertwining, dynamic and interdisciplinary history of interactive digital narrative. Drawing on the breadth of scholarship, it provides a convenient primer for the convoluted, often-contradictory genealogy of the field and its complex relationship with authorship, along with open questions to consider.

**Keywords:** Interactive Digital Narrative, digital humanities, communications

*A gifted young storyteller, orphaned at birth, has traced their origins to the city of knowledge. Fascinated by the youth's potential, the scholars each lay claim.*

This chapter charts in broad strokes the intertwining, dynamic, and interdisciplinary history of interactive digital narrative (IDN). Drawing on the breadth of scholarship, it hopefully provides a convenient primer for the convoluted, often-contradictory genealogy of the field. From these origins emerge common concerns about authorship which this volume seeks to address.

Even the name *interactive digital narrative* betrays the complex strands that converge within it. *Digital* is there to distinguish the expressive potential of digital computers [1] from analog forms of interactive narrative, a definition that will suffice for this chapter. The same cannot be said of *interactive* and *narrative*.

Writing in 1989, scholar Michael Moore [2] was already describing *interactive* as carrying "so many meanings as to be almost useless." Do I interact with my cats in the same way as I interact with people, for example, or with computers in the same way as a novel? Is all interaction equal? "Just as chlorophyll was used to

sell toothpaste in the 1950s”, wrote George Landow [3], so *interactivity* is often assigned incredible, universal properties that are not reflected in every (or even any) specific form of interaction.

*Narrative*, too, is a term with a multitude of meanings. Describing the period between the early 1990s and mid-2000s, a period which coincides with the flourishing of early IDN, Marie Laure Ryan argued that few other words have “enjoyed so much use and suffered so much abuse” [4] within academic communities.

Behind these terms, we have another problematic notion, the one upon which this volume is focussed: *author*. Apparently simple definitions like that of Alexander Nehamas [5] – “the actual historical agent causally and legally responsible for the text” – are undermined when we learn that Nehamas’ definition comes from an article that, following pioneering critic Michel Foucault, seeks to separate this definition of *writer* from the notion of *author*. Does my intention as a writer override your interpretation as a reader? Why can you *write* a shopping list but not be said to *author* one? What happens when a work is the product of many collaborators, a group that may include the reader themselves?<sup>1</sup>

For now let’s pin these slippery terms,<sup>2</sup> and first provide a brief outline of significant developments in IDN, and how they affect our understanding of authorship.

“To my mind,” wrote pioneering scholar of humanities computing Janet Murray in 2018, “digital interactive narrative practice can be traced to 1966 – a little over 50 years ago— when Joseph Weizenbaum’s *Eliza* program introduced the first interactive digital character to the world” [6]. Developed at the MIT Artificial Intelligence Laboratory, this computer program simulated a conversation between a Rogerian psychotherapist (whose echoing back of the patient’s language leant itself to the technological limitations of the time) and the user. A decade later (1976), computer programmer Will Crowther developed *Adventure*, a text-based game in which the user explores a cave system by typing in short commands. This experiment would provide the basis for subsequent similar games like Infocom’s 1979 *Zork*, which expanded on the affordances of Crowther’s earlier work.

Even these early experiments bring our understanding of authorship into question. Writing in 1976, Weizenbaum reports one user sending him out of the room during a session, while others were incensed at his monitoring of their chat logs [7]. Who is the author in this situation, the source of meaning in these conversations? Has the creator been usurped as author, with the user entering into dialogue with the machine? In an analysis of Crowther’s work, Steven Levy [8] notes that *Adventure* was “expressive of the personality and environment of the authors”, commenting on the attempted recreation of real-world cave environments Crowther enjoyed.

These preliminary text-based experiments in interactive storytelling were complemented by later developments in branching narrative. Michael Joyce’s

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<sup>1</sup> For more on the “author”, see the chapter by Kitromili and Reyes in this volume.

<sup>2</sup> For another attempt to define these terms, see the introduction of this volume.

1987 work *afternoon: a story* arguably defined the initial formal qualities of what became known as hypertext fiction: “more than one entry point, many internal branches, and no clear ending”[9]. Composed of short passages (Lexia) connected by links, hypertext fiction works like Judy Malloy’s *Uncle Roger* (1986), Shelley Jackson’s *Patchwork Girl* (1995), or Stuart Moulthrop’s *Victory Garden* (1991) were literary experiments that gave readers a measure of control over the order in which they encountered story elements. Their DNA can be found in games like Inkle Studios’ *80 Days* and *Heaven’s Vault* (2014 and 2019 respectively), and in platforms like Chris Klimas’ interactive fiction writing tool *Twine* (initially launched in 2009) – though these later works favour the single point of entry and exit typified by linear works. Whether offering one place to start and finish, or many, these works proceed by navigational choices made by the user.

While they have the virtue of historical “firstness”, text-based IDNs were soon augmented by developments in computer graphics. This expansion in the aesthetic potential of IDN saw new innovations in storytelling. Successful video game series like *Monkey Island* (1990-present), *King’s Quest* (1980-2016), or *Myst* (1993-2020) built on the puzzle-solving work of pioneers in text-based narrative, establishing conventions both narrative and technical that are still explored today. The ambiguous moral choices of *King’s Quest* are echoed in the branching paths found in the work of Telltale Games or Supergiant Games, while the humour and puzzle-solving of *Monkey Island* and *Myst* respectively can be found in Valve’s *Portal* (2007) or Jonathon Blow’s *The Witness* (2016). Similarities with cinema can be seen in IDNs like Hazelight Studios’ 2018 *A Way Out*, while works by Quantic Dreams (founded in the late-1990s) attempt to emulate their cinematic forebears - to mixed effect. The “highbrow” of hypertext fiction and its antecedents has at times been contrasted with the “low-brow” of the more commercially successful, populist genre of video games. Today we distinguish less between these forms, as IDNs rise to become a dominant form of expression and amalgamate these strands beyond the point of useful distinction.

Histories of interactive digital narrative tend to speak in terms of waves or phases or trajectories [1, 6, 10] rather than straightforward avenues. This language is at least partly due to their overlapping periods of technological development. With each new development, existing scholarly communities saw echoes of their own disciplines, their own theories. How much of the cinematic, literary, or theatrical approach to authorship can be detected in each emerging form of IDN?

As a young field, IDN has accumulated many more questions than it has answers. At the end of each section in this chapter you will find some indicative questions worth considering as you move through the rest of this volume.

*First to speak – indeed, first to arrive - was the keeper of the scriptorium. A family tree already lay before them, along with lists of ancestral traits that proved indisputably the artist was their child.*

“Opening Hamlet at a certain point,” wrote Jill Patton-Walsh in her 1994 novel *Knowledge of Angels* [11], “will always reveal him eternally bracing himself to murder his uncle.” This passage represents the guarantee of linear media: that

however active the audience may be, however differently they may react to story events, the work itself remains the same. Older readers may recall the episode of the TV sitcom *Friends* in which Joey, reading about a character's increasing sickness, asks that the 1868 novel *Little Women* be placed in the freezer. Active or passive, engaged or deeply bored, a reader cannot affect the content of a linear print work - only their interpretation of it. Once defrosted, *Little Women* will always conclude in the same way. The writer deemed it so.

Literature has always strained against the limitations of print. The index, for example, permits connection between thematically linked passages of a linear print work, while religious works often offer criss-crossing commentaries, as scholars grapple with the work's meaning (and one another) across the centuries. Vladimir Nabokov's 1962 novel *Pale Fire*, a 999-line poem festooned with interlinking fictitious commentary, looks very much like a hypertextual network when presented as such by Professor Simon Rowberry [12], with nodes and links between ideas.

Further examples abound. Saporta's 1963 *Composition no. 1* offers 150 pages which can be rearranged and read in any order, while Stuart Moulthrop [13] describes Deleuze and Guattari's *A Thousand Plateaus* as an "incunabular hypertext" because its book sections can be read in any order, going on to describe it as "a matrix of independent but cross-referential discourses." In Kurt Vonnegut's 1969 novel *Slaughterhouse Five* the main character becomes "spastic in time" [14], moving uncontrollably back and forth between the events in his life; Martin Amis' 1991 *Time's Arrow* presents its narrative in reverse, the reader only gradually realizing the story is that of an Auschwitz scientist; the reverse structure renders atrocity mercy - and kindness cruelty.

Such structural experiments often require the reader to reconstruct the chronology of each experience, a process recalling the *fabula* and *sjuzhet* of Russian formalism. Terms widely employed within the structuralist study of narrative, *fabula* (roughly equivalent to *story*) describes the full range of potential narrative elements (characters, locations, situations) within a narrative world, and their inclusion or exclusion from the work. *Sjuzhet* (roughly equivalent to *discourse*) refers to the selective presentation of narrative elements and their relationship to one another. Vonnegut's playful reorganisation of events reflects this, but what if the order of events were in some fashion the reader's decision? In his analysis of Raymond Queneau's 1961 work *Cent Mille Millions de Poeme*, which offers ten pages of fourteen-line paper strips which can be flipped to produce  $10^{14}$  combinations, Espen Aarseth [15] wondered who it was that created each combination: The work? The author? The reader?

As we can see, it is not that digital media *invents* the notion of navigating and experiencing the printed work nonlinearly, or uniquely owns the consequences of such approaches for our understanding of authorship. Instead digital media offers tools that move such nonlinear navigation from a complex analog process to a comparatively trivial digital one.

"What is unnatural in print," argued Jay Bolter [16], "becomes natural in the electronic medium." Professor Johndan Johnson-Eilola [17] similarly argued that the physical stability of books rendered them "machines for transmitting

authority,” an authority which the flexibility of IDN may diminish. This is a common claim: Koenitz *et al.* make the argument that interactive digital narrative “promises to dissolve the division between active creator and passive audience and herald the advent of a new triadic relationship between creator, dynamic narrative artifact and audience-turned-participant” [1] just as theorist Stuart Moulthrop had argued that hypertext fiction cannot have authors “in the old-fashioned sense” [18] two decades earlier.

Describing hypertext fiction, Jane Yellowlees Douglas argued that it “consists of words, characters, plots - all the constituents of the Great Novel - and seems to present itself as narrative fiction's next leap” [19]. Electronic literature represents a partial continuity with the existing concerns of literary theory – audience, interpretation, matters of structure and device – that interactivity might illuminate.

What happens if we do grant the reader some control over the structure of the narrative? What is the author’s role in this new environment? “The relationship between narration and interactivity,” wrote Eku Wand [20], “would appear to be antithetical.” If narration is about organising the events of a story in such a way as to produce a particular effect, then what happens when the reader has some control over that organization?

This tension between interactivity and narrative coherence, in which increased player choice results in more opportunities to harm the progression of the plot, has been given various names: chiefly the narrative paradox [21] or boundary problem [22]. If we define narrative as “a perceived sequence of non-randomly connected events” [23] then permitting readers to alter that sequence changes the nature of their experience. Interactive narratives, wrote Marie Laure Ryan [4], demand choices “sufficiently broad to give the user a sense of freedom, and a narrative pattern sufficiently adaptable to those choices to give the impression of being generated on the fly.” This sentiment echoes Janet Murray’s 1997 challenge: to invent formulaic scripts “flexible enough to capture a wide range of human behaviour” [9].

But is the boundary problem really a *problem*? Do readers use interactivity to evade the author, or to encounter their creations on different terms? Seen in this way, interactivity simply expands the storytelling toolbox – much like any other new medium. “After the celebrated deaths of the author, the work, and reading,” wrote Aarseth in 1994, “the text is now giving up the spirit” [15]. We could instead consider this a rebirth – a renewed textual space for readers and authors to explore.

- How does control over sequence affect other literary structures?
- Is the relationship between reader and author really about power?
- What new literary structures are possible in an interactive medium?

*In a voice rich with a lifetime’s training, the theatre director made their case.*

Brazilian theatre director, writer, politician and activist Augusto Boal (1931-2009) was frustrated. Theatre as he saw it was too passive, almost fascistic. Terrible

violence and gut-wrenching tragedy would play out on stage, as we in the audience sit obediently and just let it happen. What was this teaching us about our responsibilities as spectators – as people? And who was the author to impose such horrors upon us?

Inspired in part by educationalist and close friend Paulo Freire, who argued that “if the structure does not permit dialogue the structure must be changed” [24]), Boal began experimenting with interactive techniques for both rehearsal and performance. The audience, previously mere spectators to the action, now became *spect-actors*, occupying a dual role as both spectator and actor. *Actor* here means something other than *performer* – it refers to a wider ability to *take action*. The events were no longer fixed - performances and rehearsals can be paused at any point by any participant, allowing changes to be made in a process called *Simultaneous Dramaturgy*.

In addition to Boal’s political approach, this collapse of the fourth wall between audience and performers has been exploited for any number of other reasons: to solicit votes on the outcome of an unfinished story, as in 1985 musical *The Mystery of Edwin Drood*; to disorient and confuse, as in 2004’s *You Me Bum Bum Train*; to situate you as hostage within an experience, as in 2012 kidnap drama *66 Minutes in Damascus*. In each case audiences bear some degree of control over the narrative. In gaining control they enjoy *agency*, “the satisfying power to take meaningful action, and see the results of our decisions and choices” [9]. At the same time the actors and director (traditionally the authors of the theatrical experience) enter into a dialogue with their audience, relinquishing some of their control over the performance.

In some respects, the computer has more in common with the theatre than it does any other pre-digital medium discussed here. Both represent a framed space within which another world exists [25]; both offer (at least in interactive theatre) the potential for real-time feedback and frictionless revision to the narrative. Brenda Laurel’s seminal 1991 work *Computers as Theatre* explores this relationship, arguing that human computer interfaces share much with Aristotlean drama. “Designing human-computer experience isn’t about building a better desktop,” she concludes. “It’s about creating imaginary worlds that have a special relationship to reality — worlds in which we can extend, amplify, and enrich our own capacities to think, feel, and act” [26].

In the theatre of the screen, events are no longer set – instead we occupy another dual role, which this time we call *the user*. Such ideas form the backdrop to Michael Mateas and Andrew Stern’s influential 2005 IDN work *Façade*.

*Façade* takes the form of a simulated evening spent in the company of a feuding couple, with interaction via simple movement controls (for navigating their apartment) and a text box into which users can type statements. Within the limited character recognition parameters of the text box, anything can be entered: users may ask about a nearby sofa, where the protagonists buy their shirts, or what they have to drink; equally they may ask who first walked on the moon, or how many people perished in London’s great fire. Writing in the paper that accompanies their project, Mateas and Stern [27] expressed concern that “players cannot yet speak in natural language to the game” and must rely on “contrived,

restricted forms” of communication like the branching conversation menu found in games like Interplay’s 1997 *Fallout* (amongst numerous others). To achieve their full expressive potential, they reasoned, games should aspire to give users a full range of expression.

*Façade* was not an entirely new direction for interactive storytelling. Poet Robert Pinsky’s 1984 work *Mindwheel* is an early example of this kind of interactive fiction, what theorist Nick Montfort [28] describes as “a program that simulates a world, understands natural language text from an interactor, and provides a textual reply based on events in the world”. An almost identical logic appears in Ocelot Society’s 2016 video game *event[0]*, in which the player can talk to a computer called Kaizen. Anything can be typed into the computer terminal, to which Kaizen will attempt to reply.

Taken on its own terms, as a research project that “pushes the formal boundaries of participatory drama” [29], *Façade* feels like a valuable transitional step that both tests and recognises the limitations of digital storytelling. “A player in an interactive drama becomes an author,” wrote Mateas [30], continuing that “these contributions are constrained by the material and formal causes (viewed as affordances) provided by the author of the interactive drama.” Joseph Weizenbaum’s earlier chatbot *Eliza* “relied upon the user’s imagination to make the conversational inferences that would lend coherence to the exchange” [4], while 2016 game *event[0]*’s malfunctioning AI provides narrative justification for the narrow range of text inputs players can use. *Façade* instead relies upon the player to meet it halfway, treating awkward pauses where input cannot be interpreted as part of the awkward fabric of the drama.

Theatre represents perhaps the ultimate ambition for one branch of IDN: seamless communication, unhampered by technological or material restrictions, in which the asymmetry between creator and audience is fully dissolved. For others, the peculiarities of the medium, its restrictions, were (and are) precisely what makes IDN interesting – and worthy of study. Before giving the latter group a chance to speak, we should swing the spotlight over to a group who inherited some of theatre’s conventions – and a fair slice of its audience.

- How closely can a digital space simulate dialogue?
- Does an asynchronous relationship always disadvantage one party?
- How do digital narratives break out of the frame?
- How does a collective narrative experience differ from an individual one?

*Next to speak was the cinematographer. Though related to scribes and actors, they heard in the artist’s speech their own unmistakable grammar of edits and frames.*

Like the printed novel, film has often strained at the limitations of its medium. In Kurosawa’s 1950 *Rashomon*, for example, we find various characters recounting the story of a samurai’s murder. Through each retelling the audience is introduced

to different versions of the same story, in turn being asked to reflect on their bias toward one version or another.<sup>3</sup> As with earlier linear print experiments, we see cinema testing certainties in the contract between author and reader.

Other works have experimented with cause and effect, sharing with literary theorists a preoccupation with notions of sequence and our understanding of reading. In Gaspar Noé's controversial 2002 film *Irréversible*, for example, fourteen scenes are presented in reverse chronological order. This decision (echoing Christopher Nolan's *Memento* from two years earlier) resulted in the audience encountering Mick's violent murder before the assault that turns his killing from random act of violence to grim revenge tragedy. The reversal of events withholds the "pleasure" of genre convention from the audience.

Cinema as an interactive medium has its own distinct history. A collaborative project under director Radúz Činčera, *Kinoautomat* (1967) placed its audience in a small, customised cinema. Each seat was equipped with a red and green button, and at key points during the film audiences voted on where the story would lead. Twin projectors ensured the chosen section could be played. While movies like 1995's *Mr. Payback* allowed audiences to vote where the story would go using joysticks in the theatre's armrest, the cost of customizing theatres for such novelty experiences was usually prohibitive.

Depicting in real-time the lives of a Los Angeles ensemble as they prepare to shoot a movie, Mike Figgis' 2000 film *Timecode* attempts to achieve a similar effect without the need for such technical paraphernalia. In its original theatrical version, the film is presented as four continuous 93-minute takes occupying the four corners of the screen. Control over point-of-view - "one of the most important means of structuring narrative discourse and one of the most powerful mechanisms for audience manipulation" [31] - shifts to an extent from filmmaker to the audience, as we determine which quarter we want to watch.

While an interesting experiment, the poster's tagline - *Who Do You Want To Watch?* - does not reflect the reality of the experience (in theatres at least). The audio mix amplified whichever story was considered most significant at that moment, and dialogue sequences in one quadrant were often accompanied by extended periods of silent contemplation in the others. While in principle the audience was free to focus on whichever section they chose, in practice the limitations of the medium still presented one dominant narrative line.

Despite such formal experiments, it was primarily with the move from theatrical spaces to the home console and computer that interactive cinema gained some prominence. *Timecode*'s DVD release had an interactive mode that allowed users to switch audio tracks in real time, for example - a marked improvement on its theatrical predecessor. Following the success of such full motion video (FMV) games as 1992's *Night Trap* and the *Wing Commander* series, the genre largely fell out of favour until the independent game revolution of the mid-2000s, when

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<sup>3</sup> *Rashomon* itself was adapted (largely faithfully) from Ryunosuke Akutagawa's short story *In a Grove*, which also experiments with the impact of multiple competing retellings of the same story.

developers began experimenting with the integration of video into game experiences.

Sam Barlow's 2015 *Her Story* takes the form of the Graphical User Interface (GUI) for a mid-1990s Police computer. On it are stored numerous short video clips, ostensibly from a series of police interviews with the chief suspect in a murder case. Transcripts for each clip are included as metadata, meaning typing *murder* will bring up clips including this word.

"Hypertext presupposes an experiential world in which the goal is always potentially but one jump or link away" [3] and so too does *Her Story*. In an essay discussing his own hypertext murder mystery, Professor Chris Willerton [32] argued "a hyperfiction reader's wish for control is not absolute. It is subordinate to the wish to be interested and entertained." Here we again encounter the reader as enjoying rather than rejecting asymmetry, an important distinction sometimes lost in discussions which position reader and author as antagonistic toward one another.

"Interactive Cinema reflects the longing of cinema to become something new, something more complex, and something more personal, as if in conversation with an audience" [33]. One final lesson from interactive cinema is not technical, but philosophical. The structural conceits above were approached by critics as intentional devices, to be interrogated more for their intellectual rather than technological affordances. Films featuring multiple intersecting narrative lines (Rodrigo Garcia's 2005 *Nine Lives*, for example, or Altman's 1993 *Short Cuts*) were discussed for the way these techniques illuminate the nature of experience or the complexity of human relationships, rather than as spectacle alone. Radúz Činčera ensured that no matter what, *Kinoautomat* would conclude with the protagonist's apartment burnt to the ground – a satirical comment on the weakness of democracy – while Grahame Weinbren's seminal 1995 essay *Navigating the Ocean of Streams of Story* questions above all what interactivity affords audiences as an experience. Perhaps the more restrictive vocabulary presented by the limitations of linear filmmaking (and its comparatively lengthy history) has permitted more emphasis on the *why* of such experiments than has at times been found in IDN.

- Should form or content be the focus of analysis for IDN?
- Does interactivity create a more intimate relationship between creator and audience?
- Why are cinematic approaches so prevalent in video games?
- Like cinema, how should we evaluate the authorship of games created by large, interdisciplinary teams of people?
- Consider a version of *Irreversible* produced in the correct chronological order. If I saw this version and you saw the other, did we see the same film?

*The ludographer, youngest of the scholars, begged the artist to deny their family history and break with tradition.*

In late 2001 games scholar Ian Bogost produced a poster depicting an upcoming boxing match: Janet Murray on the left, Espen Aarseth on the right. Above them in heavy type are the words *LUDOLOGY* and *NARRATOLOGY*. The conflict between the two would, it seems, be resolved that year.

“The politics of the university are so intense because the stakes are so low.”<sup>4</sup> A kinder formulation, perhaps, is that within small and passionate communities there can be great, fierce debate about matters which from the outside seem comparatively trivial. To understand the importance of stressing the *interactive* or the *narrative* part of IDN, we should return to our scholars of the scriptorium. Like carpenters embarking on a new project, they brought to the study of IDN their own set of analytical tools. Better to have it and not need it, as the saying goes, than need it and not have it. Perhaps literary giants like Richards, Barthes, Iser, and the rest would have no bearing on interactive digital narratives, or perhaps their thinking might have new relevance. Better to have it, and not need it.

Others disagreed. “Even if simulations and narrative do share some common elements,” wrote Gonzalo Frasca [34], “their mechanics are essentially different.” Having previously cited the underdeveloped nature of games studies as reason for its consideration through the inadequate lenses of traditional narrative and drama [35], Frasca now joined other young scholars in seeking to define what they called *Ludology*: the discipline that studied games as games.

The antagonistic relationship between narratology and ludology is somewhat overstated – Frasca’s 2004 essay doesn’t actually *reject* the importance of studying narrative structure, only its emphasis over analysing games as a distinct medium. Nonetheless there was considerable effort in the early years of the twenty-first century to distinguish how games should be studied from the approaches of other disciplines. “Games are not part of the narrative media ecology formed by movies, novels, and theatre,” wrote Jesper Juul [36], arguing that the apparent continuities in storytelling found in the latter are fundamentally different to those of the former. The emphasis on description and aesthetics, for example, did not reflect the more rules-oriented world of the video game. “The dimensions of Lara Croft’s body,” wrote Aarseth [37], “already analyzed to death by film theorists, are irrelevant to me as a player, because a different-looking body would not make me play differently.” A rebuttal by Stuart Moulthrop, pointing out that *Mr Bean: Tomb Raider* would be unlikely to sell as well, was rejected by Aarseth on the grounds that it tells little about the actual *gameplay*.

This distinction - between what video games theorist Jesper Juul [38] calls *rules* and *fiction* - is an important one. *Rules* govern what players can do, while the *fiction*, the surrounding narrative elements, are beyond the user’s control. Juul cites early point-and-click adventure games like LucasArts’ 1997 *The Curse of*

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<sup>4</sup> Often ascribed to Henry Kissinger in his speech to Ashland University, this quip is most likely the work of Professor Wallace Stanley Sayre. He is commonly considered to have articulated it as early as 1950.

*Monkey Island*, in which the user may be presented with a spectacular tavern scene containing only two interactive elements, but we might consider *Detective Vision* instead. Found in a diverse range of games, *Detective Vision* highlights interactive world elements in bright colours, removing colour from other elements. While the normal view may show a fully populated world of consoles, doorways, switches, *Detective Vision* highlights only those elements which have interactivity: see Klei Entertainment's 2015 *Invisible Inc.*, Rockstar's 2015 *Arkham Knight*, Bethesda Softworks' 2012 *Dishonored*, and Suspicious Developments' 2013 *Gunpoint*.

These illuminated elements show us the rules that govern the world, so we can determine what possibilities exist within it. Users are "free only within the boundary of those rules", to quote Roger Caillois [39]; more positively, we may echo George Landow in describing such works as "rule-governed possibilities" [40]. A proper understanding of the way these rules function is valuable for a user, as this determines those areas over which they *do* have control. Irrational Games' 2007 game *BioShock* highlights all interactable elements in gold – would the experience be improved if the user had to try and interact with every inanimate mop and non-functional briefcase?

"No one has been interested in making the argument that there is no difference between games and stories," wrote Janet Murray, in a 2005 keynote preface that largely closed the debate, "or that games are merely a subset of stories" [41]. So how should we approach this brief but important antagonistic episode in IDN history? Here a film scholar raises her hand, offering an illuminating story from the early twentieth century. Louis Bunuel's 1928 film *Un Chien Andalou* arose when the narrative conventions of silent film (both mainstream and avant-garde) seemed to have concretised [42]. Bunuel's subversive use of offbeat intertitles as temporal markers and jarring juxtapositions [43] encourages us to engage with what is unique about film, rather than focussing on narrative convention. We might try to consider the ludologists in the same way: keen to emphasise the *differences* in this exciting medium over similarities and continuities. If we are going to study IDN, shouldn't we place at least equivalent emphasis on the form as the content?

- What are the fundamental differences (and surprising similarities) between IDN and its precedents?
- When studying IDN, should we begin with the *rules*, the *fiction*... or something in-between?
- What are the advantages and disadvantages of becoming an IDN specialist?

*Despite being present at the birth, the computer scientist wasn't sure if they would be welcome – or if they wanted to be there.*

Hypertext fiction writing environment StorySpace was collaboratively created in 1987 by literary theorist Jay David Bolter, writer Michael Joyce, and Professor of

Computer Science John Smith. In an interview with Belinda Barnet, Smith clarified the brevity of his involvement by explaining that he was “not interested in prose, in fiction” [44].

How important is it to study the code that underpins IDN? In their 2009 book *Racing the Beam*, Professors Nick Montfort and Ian Bogost noted that “little work has been done on how the hardware and software of platforms influences, facilitates, or constrains particular forms of computational expression” [45], which echoes Manovich’s earlier conclusion that “excited by all the rapid transformations cultural computerization was bringing about, we did not bother to examine its origins” [46]. Should programmers be considered co-authors?

The importance of underlying code has not gone unnoticed. Literary theorist Myron Tuman mentioned in 1992 that the author is present both whilst writing the work and “through manipulation of the software controlling the degree of ‘freedom’ the reader experiences” [47], an argument which has been adopted by the various new and emerging fields that have made digital textuality their subject.

Critical Code Studies (which focuses on the cultural significance of computer *code* rather than explicitly its functionality) was initiated in 2006 by new media scholar Professor Mark Marino: “The history of the program, the author, the programming language, the genre, the funding source for the research and development (be it military, industrial, entertainment, or other), all shape meaning” [48]. In his review of Critical Code Studies’ first four years, however, Marino notes that “the lines of code that appear in these discussions are precious few and their role in the argument is often minimal, a mere passing example, an illustration that the software does in fact have code” [49].

The last decade has seen significant change in this area, however, with MIT’s *Software Studies* series and journals like *Computational Culture* underscoring the importance of platform and software. Despite this, code itself arguably remains an underexplored and fruitful object of study.

- How important is it to study the code that underpins IDN?
- Should programmers be considered co-authors?
- How do we ensure that the platforms on which IDN were created survive?
- What are the assumptions underlying the way software is designed?

*At a nearby table an impatient merchant was listening in. The sooner this was resolved, the sooner the artist would get back to work.*

Concerns about the “parochialism and imperialism” of disciplinarity have a long history [50], as emerging fields struggle to align with, and differentiate themselves from, existing modes of thought. Dismissing the study of English literature, historian Edward Freeman argued “we cannot examine tastes and sympathies” [51]; Film Studies emerged in a hostile environment which asked whether “academic oversight was pertinent or wholesome” [52]; the early days of game

studies were rife with concern about “intrusions and colonisations from the already organized scholarly tribes” [37, 53]

“The great stake-claiming race is on,” wrote Espen Aarseth in 2005 [37]. “As with any land rush, the respect for local culture and history is minimal, while the belief in one's own tradition, tools, and competence is unfailing.” The origins of interactive digital narrative are an ultracrepidarianist minefield, and no doubt the preceding chapter offers at least one infuriating omission for every reader who navigates it. If nothing else, this should demonstrate how deeply and intricately these various fields intersect with developments in interactive digital narrative. One significant omission in this chapter worth noting is the plurality of hobbyist or small-scale independent IDN that represent the majority of works produced in any given year. Such works represent both IDN's leading edge (the extensive community that sprung up around *Twine*, for example, or various Game Jams producing novel work on a given theme) and its long tail (the still-active modding scenes for often decades-old games, for example, and those maintaining active support for platforms otherwise abandoned by their original creators.)

At the time of writing Statista places the value of the global video games market at 138.4 billion dollars. This extraordinary proliferation of distribution platforms, genres, and modes of expression grants IDN an enormous amount of commercial and cultural capital. Unpicking its impact requires a group effort by scholars, one that crosses traditional disciplinary boundaries. The indicative questions outlined above represent collective problems, which can be addressed from within any formal discipline – or none.

The history of IDN is one of intellectual histories colliding, of communities meeting on unstable ground; of territories not to be conquered, but to be explored and nurtured, together. The Authoring Problem is one such territory; this book is your guide.

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