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Note: This is the introduction in progress from my forthcoming book “Creating Story Worlds in Inform 7.” Production notes and other presentation oddities may be scattered throughout. I would welcome any corrections, suggestions, or feedback to [aareed@gmail.com](mailto:aareed@gmail.com).

## [CN] Introduction

### [CT] Why Interactive Fiction?

The box cover is striking: a whole family, from suit-and-tie father to laughing child clutching a puppy, pulled by the hand through a bright window onto a vivid, fantastical landscape. King Graham, the square-jawed hero of Sierra On-Line’s best-selling computer game series, cheerfully leads them into the world of *King’s Quest V*, due to be released just in time for the 1990 holiday season with a marketing fanfare unrivaled in the still-emerging game industry.

“Beautiful scenery and amazingly lifelike animation,” the box gushes. “Characters that speak to one another using real voices take you into that world for an experience so real... you may forget you’re playing a computer game.” Not only is the fifth King’s Quest the first Sierra game to use the new VGA graphics cards (offering a quantum leap from 16 to 256 colors), it’s also among the first to come on CD-ROM, heralding a new age of multimedia-enabled games designed to fill those bottomless discs with art and music. (Sierra already helped jump-start the market for add-on sound cards two years previously, luring Hollywood composer William Goldstein to compose the score for *King’s Quest IV*, and AdLib or Sound Blaster equipment is rapidly becoming *de rigueur* among serious PC gamers.)

In a segment on the television program “Computer Chronicles,” host Stewart Cheifet introduces Sierra’s Stuart Moulder with a smile. “Stuart, we all remember the *old* adventure games, and the painful text entry,” he says. Stuart chuckles. “But this is another story, isn’t it?”

“It is,” Stuart responds as he demonstrates the game. “For one thing, the old text-driven approach is gone now. In this game your character is controlled through a series of icons... everything’s done with the mouse, there’s no typing at all. ...with the CD-ROM’s storage capacity, instead of reading text, you can hear the text spoken to you by actors. ...no typing in words, no ‘I didn’t understand what you said.’”

“And obviously great graphics,” Cheifet says, bending in to peer at the ten-inch screen. “I mean, look at that, it’s like watching a cartoon on TV.”

Meanwhile, software outlets quietly dump their last remaining text-only games into the bargain bin to accommodate the VGA and CD-ROM titles that show off newer PCs. The final products from Infocom, once the leading publisher of “text adventures”—or, to use their preferred term, “interactive fiction,”—have nearly vanished from retail shelves. After making a name with the popular *Zork* series in the early ‘80s, Infocom focused not on chasing emerging technologies for graphics and sound but on improving their stories.

Their games became better at understanding their players; their authors began to include prominent novelists like Douglas Adams and James Clavell. Infocom's ad campaigns, dismissive of early multimedia technology, bragged that graphics would never match the power of imagination: one two-page spread in *Analog* featured a human brain pulsing with a golden glow, below the huge banner "We stick our graphics where the sun don't shine."

But declining sales and mismanagement have scattered and shrunk the Infocom team, which closed the doors on its original Cambridge home in 1989. *King's Quest V* will go on to be the top-selling PC game of the year, and plans for *King's Quest VI* include an elaborate computer-animated intro sequence and a fully produced musical number. Sierra will soon begin constructing a multi-million dollar blue-screen studio for incorporating live actors into their games. Meanwhile, Infocom's final title, *Journey: The Quest Begins*, is marked down from \$39.95 to \$19.95 and then \$9.95. Nobody wants it.

Interactive fiction has failed, just another short-lived fad in the early days of home computing, unable to compete with the superior technology superseding it.

Time passes.

Twenty years later, in 2010, a website tracking interactive fiction called the IFDB adds a newly-written story to its archive every four days on average. Projects to bring interactive fiction (IF) to cell phones, web browsers, and game consoles proliferate. Thousands of dollars in prizes are awarded annually to winners of online IF competitions, the oldest now in its sixteenth year. A browser-based multiplayer *Zork* spin-off, *Legends of Zork*, continues to expand, and vintage Infocom games routinely sell for hundreds of dollars on eBay. Teachers in elementary and middle schools use IF to teach logic, problem-solving, and game theory, and new media and digital arts courses at universities around the world hold classes that study IF; a scholarly analysis, *Twisty Little Passages*, continues to be highly ranked on Amazon.com seven years after first publication. *Get Lamp*, a documentary about the medium's history, gets heavily Slashdotted and Twittered upon release; TextFyre, the first company seriously selling text adventures in two decades, releases the first game in its third series.

Long viewed only through the lens of nostalgia or even pity, IF is increasingly claiming a place alongside hypertext fiction and digital poetry as a serious medium of expression and storytelling, and alongside casual games and downloadable entertainment as a thoughtful, mature alternative to more violent or repetitive fare. While still not commercially successful again, some IF stories are increasingly viewed as artistically so.

The *King's Quest* series made it to a poorly-received eighth installment, before fading from the spotlight as the corporate conglomerates that absorbed Sierra divided and then largely ignored its intellectual property. There are no current plans to revive the series.

The comparison is not to say that graphical games have failed (far from it). The comparison is made to reveal an interesting truth about interactive fiction: it's one of the first genres of computer storytelling that's successfully divorced itself from the technological arms race. People still play IF not because it's the latest shiny thing, but because, at the end of the day, *you can tell good stories with it*, even twenty years after it was pronounced dead on arrival.

\*\*\*Production Directive: A text break of some sort would be nice here.

Why write interactive fiction now? Why work in a digital medium thirty-five years old, instead of playing on the bleeding edge of technology?

There are as many answers as there are IF authors, but for me, the truth lies in the older, less elegant term Infocom wanted people to forget about: text adventures. Text predates the computer, electricity, and the printing press: it is in many ways the foundation of civilization. Text can outlast the technology used to inscribe, print, or transmit it; the great texts of the past may outlive the printed book itself. And adventure is a driving force of the human condition. The need to discover, to explore, to experience—without necessarily shooting anything along the way—is stronger than ever in an age where every inch of our planet seems mapped and unavailable. Indeed, such a world needs adventure even more.

Graphics cards come and go, but text endures. And adventure is forever.

## [1]The Power of Text

Interactive fiction has often been dismissed as inferior to mainstream games for being “only text.” Curiously, though, we don’t feel a game like Charades lacks anything for being “only gestures,” or that checkers suffers from being “only pieces.” Many make the mistake of judging IF as a technological artifact of the time in which it was created, rather than on its own merits or faults as a game-playing system.

The criticism falls even flatter from the perspective of story. Shakespeare, Dickens, Lovecraft, and Tolkien all got along just fine with “only text.” I’m not sure that, were any of them alive in our century, they would decide cut scenes, voice acting, and a good physics engine were necessary to tell their stories. One can almost hear them suggesting such things might in fact be distractions.

The first step to understanding interactive fiction is to embrace its text-only nature as a feature, not a bug—an advantage, not a limitation. Let’s quickly go over some of the reasons why.

## [2]Single-developer games

Major works of interactive fiction can be created by single authors, a feat nearly impossible in any other mode of digital storytelling. Between 2006 and 2009, I spent my spare time working on *Blue Lacuna*, a full-length IF novel (and perhaps the longest interactive fiction yet written) which provides something like 18-25 hours of entertainment. Over roughly the same period of time, it took a team of more than seventy people to create *Batman: Arkham Asylum*, a well-reviewed game but one which could be played through in half the time, even with gameplay often consisting of repetitive combat.

Why this huge disparity? A science fiction entry in the 2009 IF Competition, *The Duel that Spanned the Ages*, featured this sentence in its introduction:

\*\*\*[Block quote]

“All around him, the Machines' fleet and orbital stations are blasting away at his tree ships, burning the mighty trunks like firewood.”

\*\*\*[End block quote]

Let's think about what it would take to realize this sentence in a mainstream multimedia game. We'd need to hire conceptual artists to design the ships in the fleet of the Machines, their orbital stations, and also the tree ships of the protagonist. Each individual ship design would need several iterations to find a version that pleased the game's director. Once signed off, the sketches would be turned over to a team of modelers, who would create each ship in 3D and texture them. The non-organic tree ships would probably take a lot of work to get right. At the same time, a team of programmers would be building an engine capable of rendering lots of ships on screen at the same time (or contracting with an animation studio, if budget only allowed the sequence to be realized as a non-interactive cut scene). The engine would need a lighting system that can not only light the ships in a realistic manner (even in the dark void of deep space), but also deal with the “blasts” fired by the enemy ships. (Do they give off light? Do particle effects have to be added to the engine? What is the effect when blasts hit a target?) The fire consuming the tree ships will also be a considerable challenge: creating realistic fire might require significant R&D effort, not only to look visually compelling and realistic but to incorporate dynamic firelight effects into the engine's lighting system. We'd also need to record or license sound effects—for the blasts firing and striking, the tree ships burning, perhaps ambient noise like pilot cockpit chatter—and probably record a symphonic orchestral soundtrack to lend the scene the appropriate gravitas. The composer will need to write the track as well as perform it (or possibly hire guest performers, which may be a budget and scheduling nightmare) and then someone will need to mix the recording into a final form and compress it to fit on the game media. We will probably also need to hire voice actors to narrate the events of the scene. And this is before we find a team of quality assurance testers to find all the things that don't work and need to be fixed.

As IF, all the author had to do was write those twenty-two words.

Mainstream games are to IF as films are to novels. While there will always be a market for multi-million dollar entertainment produced by committees of hundreds of people, our greatest stories often come from the undiluted visions of single artists. IF lets that sacred space exist in the realm of digital, participatory stories.

## [2]Prototyping

Perhaps counter-intuitively, IF can be a useful tool for designers of multimedia games as well. The speed with which game mechanics and plot events can be mocked up and iteratively improved makes IF a wonderful medium for prototyping any sort of interactive story.

As illustration, this book's example game, *Sand-dancer*, contains multiple locations, plot-advancing setpieces, over a dozen locations and several puzzles, four characters that can

be interacted with, flashbacks, weather and lighting effects, and other elements: yet the process of building a prototype in Inform 7 took only about a day's work. A day after finalizing the design, I had a playable version that, while basic, still gave me a sense of the story's consistency, interest, and playability. It forced me to answer key questions like "What is the nature of the player's role in this story?" and "Is this going to be any fun?" These are the sorts of answers it's good to have before spending countless hours, not to mention any amount of money, on a story-based game.

## [2]Demographics

IF's text-based nature also means it is widely accessible to audiences disenfranchised from other styles of computer game. Blind fans of IF are a large and often enthusiastic component of the online community. Gamers with disabilities who are unable to keep up with reflex-based shooters are delighted to immerse themselves in the slower-paced mental challenge of interactive fiction. The more mature and often less violent tone of some IF stories can also appeal to an older audience with the patience and attention span to appreciate them.

Compared to the mainstream game industry, the audience for IF may be small—but it's surprisingly broad.

## [2]Literary Quality

The written word can do things even the most expensive multimedia cut-scene cannot. Here are some snippets from various modern interactive fictions, demonstrating the wide range of genres and tones to be found. Many of these are certainly not the sorts of moments you expect to find in a video game:

"She listens intently, expressing no reaction -- no judgement, no amusement, no boredom or distraction -- and you find yourself straying into more personal territory. Not dark secrets, but incidents that have no bearing on anyone but you. Standing on the porch of a friend's house while the Santa Anna winds stripped branches off the palm trees and made the telephone poles bend and sway, restless with the electricity in the air. The sort of thing that would make little impression now, but which at the time seemed wonderful and strange." – *Galatea*, Emily Short (2000)

"I began to have my doubts about Mr. Booby almost as soon as the balloon had made its ascent from Berkeley Square." – *To Hell in a Hamper*, Jason Guest (2003)

"Calm down. All you have to do is write a thousand words and everything will be fine. And you have all day, except it's already noon." – *Violet*, Jeremy Freese (2008)

"A man could go mad trying to describe the desert to another man -- it's easy enough to talk sand, mind you. It's harder to get down to brass tacks with endlessness and loneliness, to talk the truth about anything, really, except the long white curves of the desert. But they're not even curves, really. Maybe closer to waves, maybe closer to doodles drawn by a half-asleep Picasso." – *Blue Chairs*, Chris Klimas (2004)

“In the beginning was the Word, and it was hungry.” – *Slouching Towards Bedlam*, Daniel Ravipinto and Star Foster (2003)

“Parts of the city like this one give you a special tingle and suggest that Santa Claus and Jesus will be able to coexist in peace.” – *Book and Volume*, Nick Montfort (2005)

“You are standing in a circle of hot, white light in the midst of a great darkness. . . . In the center is a glittering stainless steel table and, suspended beyond that, the silver throne of the Inquisitor. . . . criticised by many for his leniency, his reliance on mercy, but he still is an imposing figure, floating in mid-air, surrounded by a dozen black video screens and surveillance cameras.” – *Kaged*, Ian Finley (2000)

“Rowdy Juanita stands behind the bar, a six shooter in each of her upper set of hands, a third being reloaded by her lower arms.” – *Gun Mute*, C.E.J. Pacian (2008)

“Your corpse is now just so much meat scattered across the grass, but enough of your face remains that you can tell that, yes, it’s definitely you the dogs are eating.” – *Shrapnel*, Adam Cadre (2000)

Good writing can evoke visuals and sounds, but also tastes and smells, textures, emotions; it can reveal the mental state of the viewpoint character or other characters; it can create multiple layers of reality, narration, and truth; it can use metaphor, rhythm, dramatic irony, stream of consciousness, and other techniques refined over centuries of tradition.

For the last twenty years, digital games have been trying their hardest to be like films. Maybe some of them should try being like literature instead.

## [1]Why Inform 7?

Inform 7, first publicly released in 2005, is the preeminent design system for IF today. Its lineage can be traced in a fairly straight line all the way back to *Zork*, the first interactive fiction released by Infocom.

By the early 1990s IF had been declared dead on arrival, but a growing online community was celebrating their favorite games and even making some of their own. The hero of *King’s Quest* was losing his luster, but another Graham, this one decidedly less fictional, was equally willing to lead people into new realms of storytelling magic. In 1993, Dr. Graham Nelson of Oxford University announced he had created both a new language for creating interactive fiction, and a compiler for this language that produced files readable by the many existing Infocom interpreters. Of his “Infocom-format compiler,” called Inform, Nelson modestly wrote “It is not a marvelously well-written program, but it does work, and it is documented.”

Twelve years later, after nearly 100,000 newsgroup posts mentioning Inform and something like a thousand stories written with the language, Nelson announced Inform 7, a radically new language entirely. While the old Inform was “a computer programmer’s tool which aimed to be welcoming to creative writers,” Inform 7 “aspired to be the other way around”: a tool for making interactive stories designed first and foremost for writers, not coders.

Why choose a language like Inform 7 over a more traditional general-purpose programming language like C or Python? Why choose it over other IF design systems, such as TADS 3 or even Inform 6? A few of the biggest reasons are outlined below.

## [2]Natural Language

Inform 7 uses a natural language (NL) syntax that lets authors use English sentences to create their story worlds, which Graham Nelson calls “a radically humanising interface for the writing of interactive fiction.”

Inform 7 is not the first programming language to have an NL structure—the effort dates back at least to 1959 and the creation of COBOL—and experts have accused similar systems for being long-winded and lacking clarity. While traditional programming languages are better at solving traditional programming problems, Graham Nelson asserts (and I agree) that the writing of interactive fiction is *not* one of these problems.

Take, for example, this sentence of real Inform 7 code (adapted from an example in Nelson’s 2005 paper “Natural Language, Semantic Analysis, and Interactive Fiction”):

```
Every turn when a container (called the sack) held by someone visible (called the unlucky holder) is bursting, say “[The sack] splits and breaks under the weight! [if the player is the unlucky holder]You discard[otherwise][The unlucky holder] discards[end if] its ruined remains, looking miserably down at [the list of things in the sack] on the floor.”
```

Here is the same snippet rewritten in Inform 6, which has a more traditional programming structure:

**\*\*\*PRODUCTION NOTE:** This code block, unlike the rest of the code in this book, should be styled like traditional code: fixed width font etc.

```
Initialise [;
    ! start a daemon for every sack object in game
    objectloop (s ofclass Sack) {
        StartDaemon(s);
    }
];
Class sack
    with daemon [ unlucky_holder;
        ! check to see if sack is bursting and its owner is visible
        unlucky_holder = parent(self);
        if ((self.bursting == 1) && TestScope(unlucky_holder, player)) {
            print (The) self, " splits and breaks under the weight! ";
            if (unlucky_holder == player) {
                print "You discard";
            } else {
                print (The) unlucky_holder, " discards";
            }
        }
    ]
];
```

```

        print " its ruined remains, looking miserably down at ";
        WriteListFrom(child(self), DEFART_BIT + ENGLISH_BIT);
        print " on the floor.^";
    }
},
has container;

```

Both versions produce identical games, but the first is easier to understand, since it reads like a natural English sentence. We still must learn the kinds of sentences Inform understands, to be sure—but we can guess, and are likely to remember without needing reference material, what “every turn” means much more easily than “StartDaemon(s)”. The first version likewise does not need clarifying comments, because the words explain themselves—whereas in the second version, we feel obligated to remind the reader that “TestScope” relates to whether or not something is visible; to translate the code into human-readable text. One of the great innovations of Inform 7 is reducing the need for this extra layer of translation between the writer and the compiler.

Since IF communicates with the player in plain English, and the player communicates back in plain English, it seems only natural that the author should be able to do the same thing. Or, in Nelson’s words, “the natural language for writing IF is natural language.”

A subtler benefit of natural language is the playful creativity engendered by a fuzzier boundary between coding and writing. Soon after Inform 7’s release, people began writing source texts that were not only functional games, but functional poetry. The following limerick, which is also a complete and valid Inform 7 program, plays on the old text adventure clichés of lamps and dark spaces:

```

The Underground Hole is a room.
The description is "Cavernous gloom."
    The lamp is in Seoul.
    Before going in Hole,
say "You're likely to meet a grue soon."

```

## [2]Accessibility

Inform 7 compiles stories into one of two formats, z-code and Glulx, both of which can be played with an appropriate interpreter program on an astonishing variety of devices. IF interpreters have been written for the Mac OS, Windows, Linux, UNIX, Commodore, PalmOS, iPhone, Javascript, Java, Flash, Xbox, GameBoy, Google Android, Silverlight, a number of long-dead systems and probably systems not yet invented at the time of this writing.

As a result, your stories will be playable on nearly any type of computational system imaginable, with no extra work on your part, and as the fan community continues to write new interpreters at a steady pace, your stories will still be playable and enjoyable ten or twenty years in the future on computer systems we can’t even imagine yet.



IF also tends to be much simpler, computationally, than mainstream games, meaning neither you nor your audience needs to have the latest, greatest hardware. IF theoretician Nick Montfort went so far as to release “hardback” editions of his story *Winchester’s Nightmare*—installed on cheap, aging laptops.

## [2]Community

A supportive and vocal community of Inform authors and players can be found online, offering advice, playtesting, and active discussion on the theory behind interactive narrative. Other online resources include a dedicated wiki, databases of games and reviews, tutorials, screencasts, and more detailed documentation.

URLs to some of the best resources at the time of publication can be found at the end of Chapter 2. Up-to-date links will also be maintained at this book’s website for as long as possible.

Your best long-term bet to find the community, of course, is by typing “Inform 7” into your favorite search engine.

## [2]Extensions

Inform 7 was designed from the ground up to make it easy to package useful source texts as “extensions,” which allow authors to easily add more functionality to their games or customize built-in behavior. The official website hosts hundreds of extensions, all freely available for download and use within your own stories. You can incorporate a tutorial extension, for instance, which will teach your readers how to play an IF story. You can grab another that prints an on-screen map of the territory explored. There are extensions to add specific types of objects to your game world, like horses or ropes, and others to add systems for combat, conversation, or magic. Why recode the wheel?

## [1]Navigating this Book

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