

Blue Lacuna: Overview of a New Interactive Novel

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Abstract—Blue Lacuna is an ambitious new piece of interactive fiction, the longest work yet produced in the Inform 7 language, and by some definitions the most substantial work ever completed in the interactive fiction medium. In development for more than three years, Blue Lacuna has a number of experimental elements of interest to creators of long-form interactive stories.

Index Terms—interactive fiction, electronic literature, Inform 7

I. INTRODUCTION

BLUE Lacuna, an interactive novel containing nearly 400,000 words of prose and Inform 7¹ source code, begins by asking its player-readers to make five choices which have significance throughout the remainder of play. This sets the tone for a serious story about the nature of choice and the meaning of happiness, unfolding in a universe of mythic fantasy and complex characters.

With an average play-through comprising over three thousand moves and fifteen to twenty hours of time, *Blue Lacuna* is among the longest and most ambitious works of interactive fiction (IF) ever produced. The majority of recent work in this medium has been short form, but a longer format allows the story to develop themes and unfold plot threads on a larger canvas.

I had three major goals for the project when I began work in 2006. First: create an interface for IF that was more intuitive and required less instruction to those unfamiliar with the medium. Second: tell a story that revolved around and relied upon the player’s ability to make serious choices with dramatic repercussions, without sacrificing the authorial need to tell a compelling and rational story. Third: create a character to meet and converse with who is complex enough to develop a unique and personal relationship with the player, and whose ultimate fate is not predestined but determined by the player’s interactions with him throughout the game.

II. NOVICE-FRIENDLY INTERFACE

Modern expectations for interactive stories, often delivered on slick platforms like the Nintendo Wii and the iPhone App Store, have made it more of a challenge to attract 21st century players to IF’s steep learning curve (a remnant of its development in the era of command-line systems²). Standard IF is laden with conventions and assumptions mostly taken for granted by IF authors, but confusing to newcomers to the medium.

After observing players struggle at a public exhibition of an earlier IF work, I decided to put real time into simplifying and streamlining the classic IF interface to something

that would be easier to explain, understand, and use for average people. The goal was to devise a system explainable with a single sentence of instruction.

A. Keyword Navigation

The central concept of the emphasized keyword system devised for *Lacuna* is “type words that interest you to advance the story.”

Three types of emphasized keywords appear when navigating the story: blue nouns, green exits, and bold conversation keywords³. The player types a noun keyword to get more detail about an object of interest. Typing an exit keyword moves the player’s character in the indicated direction. A conversation keyword will move the conversation in the direction indicated by the word⁴.

The advantages to this approach are that a) new players must learn only one mechanic to start doing the three most important actions, b) mysterious abbreviations (like “x” for EXAMINE) don’t need to be taught, c) the colored keywords draw a player’s attention to the important concepts in a block of descriptive text, and d) less typing is required.

A.1 Compassless Navigation

By default *Lacuna* uses a compassless system of navigation based on exit keywords such as PATH or BEACH that refer to nearby exits from any given location. Early in the game, players are given the option to switch to traditional compass-based navigation, and may thereafter switch between either system as often as they like.

This is in part an experiment to expose the strengths and weaknesses of both navigation paradigms.

A.2 Keyword Conversation

As a conversing character brings up interesting or important topics, the player may type the relevant keyword to move the conversation in that direction: almost as if their character has resaid the word with a question mark at the end.⁵ A window at the bottom of the screen shows the currently active conversation keywords; as discussion moves forward, old keywords lose relevancy and disappear from the list.

This simplifies more traditional and verbose IF systems of conversation, and was designed to be conducive to more complicated state-based conversations, which have begin-

³ Ideally, each type would be a color, but the Glulx and Glk standards currently allow for a maximum of only two custom styles.

⁴ Compare this to the much more verbose and usually undocumented syntax in traditional IF, ASK {CHARACTER} ABOUT {TOPIC}. Traditional IF commands can still be used in *Lacuna*; the keyword system is merely an overlay on top of the existing model.

⁵ This system was introduced in the author’s 2005 piece *Whom the Telling Changed*, but has been greatly altered and expanded.

¹ Inform 7, a natural-language system for creating IF. <http://inform7.com>

² For an excellent history of IF, see Jimmy Maher’s “Let’s Tell A Story Together” at <http://maher.filfre.net/if-book/>

nings and endings and other features more common to real-world conversations, and to drama.

B. Smarter Parsing

Another component of *Lacuna*'s friendliness to novices is a more concerted effort to make sense of player commands. Traditionally, IF parsers can be pedantic and unhelpful in understanding even basic input. Often a specific but hidden grammar is required—standard Inform games, for example, understand LOOK AT {SOMETHING} but not LOOK {SOMETHING}—and most error messages do not help teach new players the expected syntax.

Lacuna includes a custom Inform 7 extension called Smarter Parser, which uses regular expression matching to search for nonstandard input that new players might use, and attempts to understand this input or return a more helpful error message. In either case the player is always instructed as to what a more valid syntax might be.

Smarter Parser can successfully understand commands like:

- I DON'T KNOW WHAT TO DO
- I WANT TO GRAB THE APPLE
- GO NORTH CAREFULLY
- GO TO TABLE
- ANYWAY TAKE THE APPLE
- TAKE THE APPLE INSTEAD
- PUNCH HIM WITH MY FIST
- LOOK AT CEILING
- WAIT FOR A WHILE

The program also understands commands new IF players often try, but are not included in standard IF syntax, including GO BACK, WAIT FOR {AMOUNT OF TIME}, USE, FOLLOW, or FIND {SOMETHING NO LONGER VISIBLE}. Typing a verb alone assumes the player means to perform the action on the last noun mentioned. Attempts to interact with out-of-scope objects print a more helpful message (the default is “You can't see any such thing.”) which mentions where the item was most recently seen. Basic typo correction is also included. All of this functionality has been released as extensions to Inform 7 for use by other authors.⁶

Lacuna also offers a “story mode” that is recommended after its first chapter to players who don't show signs of being puzzle-solvers. Story mode simplifies many of the game's puzzles and presents more opportunities to bypass them entirely or receive stronger in-game hints for them.

Fiction writers often are advised to make the first paragraph and page of their work as gripping and perfect as possible, to grab readers and encourage them to continue with the story. In IF, parser errors and responses to commands from inexperienced players are part of this crucial “first minute” experience. The author believes improving this experience is vital to expanding the audience of IF beyond the core hobbyist community.

⁶ See “Smarter Parser,” “Remembering,” “Numbered Disambiguation Choices,” and “Poor Man's Mistype” on the Inform 7 extensions page.

III. PROGUE: A SOPHISTICATED CONVERSATIONALIST

One of *Lacuna*'s largest achievements is Progue, a major NPC who alone takes up nearly a third of the game's source code.

IF has seen characters that are companions to players throughout large portions of a game, whom some players form emotional connections to, as early as Floyd in *Planetfall*⁷. In the last decade, it's also seen characters with advanced conversation systems that try to emulate more sophisticated conversations, with vastly different endpoints and developmental paths, such as the title character in *Galatea*⁸. Progue is an attempt to merge these two aspects in a single character: a dynamic conversationalist who grows and changes over the course of a lengthy story according to the player's interactions with him.

As *Lacuna*'s narrative unfolds, Progue evolves through five unique psychological states, each with different behavior patterns, default responses, and conversational scenes. In each of these states, the player has unique opportunities to define a relationship with Progue. Based on the player's actions and conversation choices, Progue forms an opinion about the player on three distinct axes:

- The affinity axis denotes whether Progue likes or dislikes the player, and how much.
- The submission axis denotes whether Progue feels more dominant or submissive in his interactions with the player—whether he is the alpha male or a follower.
- The romance/paternalism axis denotes whether Progue feels more attracted to or protective of the player. At one extreme the player becomes a surrogate child; at the other, a love interest.

As play continues, the various possible combinations move Progue towards one of twelve archetypes that define his behavior towards the end of the game. For example, positive paternalism, positive submission, and negative affinity results in the “bitter father” archetype, where Progue views the player like a disobedient and domineering child.

The way the game's story resolves is directly tied to the archetype that Progue has been placed in by the player's actions and conversation choices. Indeed, Progue's functional role in the story (protagonist, antagonist, love interest, goofy sidekick) is developed and defined largely through the player's interactions with him.

Progue's dialogue is also customized to the player's unique circumstances at the level of words and sentences. Related prose linking lines of dialogue incorporates details about Progue's current actions, feelings for the player, the immediate surroundings, time of day, status of puzzles and progress through the plot, prior conversations, and other aspects. Progue develops a unique nickname for the player, and remembers things about past encounters with the player, such as where they took place or what words the player used in speaking with him. By asking too many similar questions or otherwise being a pest, the player can

⁷ *Planetfall*, Steve Meretzky, Infocom, 1983.

⁸ “Galatea,” Emily Short, 2000.

temporarily annoy Progue regardless of the more permanent factors described above.

Consequently, each player develops a unique and personal relationship with Progue. Even though any two players will see a certain amount of overlapping dialogue, the context and meaning of that dialogue will vary based on each player’s opinions of Progue, and Progue’s opinions of the player. This is one of many factors that helps a player “own” his or her version of the story.

IV. DRAMA MANAGEMENT

A major problem in IF stories is that pacing is often in the hands of the player, who is required to solve puzzles to advance the plot forward. If a player gets stuck on a puzzle and is not able to solve it, the narrative grinds to a halt.

Lacuna features puzzles, but includes a number of mechanisms designed to help keep the story moving forward if the player gets stuck. Progress can be made along four major pathways, each of which is linked to the others:

- The puzzle chain, the sequence of puzzles that unlock new areas and story information.
- The dream chain, a series of events that happen each night the player sleeps.
- Progue’s psyche chain, the series of psychological states that Progue moves through on the way to one of his possible emotional resolutions.
- The event chain, a series of special dramatic events which introduce new information and cause environmental changes.

These four chains are interconnected such that enough progress along any one of them will start pulling the others along behind it; and as each moves forward, it unlocks new information that makes it easier for the player to move the others along. Dramatic events often reveal new clues or information that make puzzles easier. Solving some puzzles triggers Progue to move to the next psychological state, where he might reveal more clues or set the stage for another event.

Lacuna also keeps tabs on how bored it believes the player currently is, by watching for an upswing in misunderstood messages, repeated commands, or a long span of time since the last new room was discovered or conversation topic reached. After the player reaches a certain level of boredom, it becomes more likely that various hinting scenes will occur, and objects related to puzzles start being described with more obvious language. Becoming too bored can cause the game to move one of the chains forward. In this way, the story attempts to keep the player engaged even in times that would be dramatic dead space in most games.

V. DYNAMIC ROOM DESCRIPTIONS

Lacuna features room descriptions that change dramatically based on the time of day, the weather, tidal patterns, and the player’s own relationship with the landscape. While in many games the room description is only treated as prose when the room is first entered, and skimmed or

auto-read thereafter, *Lacuna* constantly varies the description of the surroundings, so the player continues reading and engaging with the story on a prose level rather than a mechanical or systems level.

The descriptions also contain subtle details designed to help orientation and navigation. Most descriptions of exits preface the player’s prior location with the word “back,” as in “you could go back to the clearing.” A number of rooms describe details of scenery using words like left, right, forward, and behind, based on which direction the player is traveling in. Finally, descriptions also vary based on which mode the player is in (story or puzzle), information they’ve learned (such as Progue’s names for various plants or animals), and what details are important at the current phase of the story.

VI. INCLUSIVE STORYTELLING

An experimental pair of games posted to the rec.arts.int-fiction newsgroups some years back offered two different experiences: one game rejected every command the player typed, and another pretended to understand every command. While the ruse was immediately obvious, many reported that the latter game somehow “felt” more satisfying.

A design goal of this project was to allow as many actions as possible, and to place as much blame for misunderstood input on the parser, rather than the player.

A. Allow rather than Disallow

As much as possible, *Lacuna* attempts to be generous in the actions it lets its players take. Unless such an action would be obviously suicidal or catastrophic, it lets you climb, swim, slap people, dig, and take other actions that many games would avoid with an excuse message like “You don’t feel like doing that.”

The goal is for the player to feel the story is being told with them, not at them. It may make no difference to the author’s puzzles or narrative if the player goes for a swim or takes a nap, but it makes a difference to the player, who feels as if he’s been allowed to play in the story world and not just observe it from afar.

B. Kind Parser Errors

Many of the stock Inform error messages assume that the player, rather than the parser, has made a mistake, or don’t provide useful feedback. *Lacuna*, whenever possible, tries to place the blame on its own inability to understand, rather than imply that the player has requested something strange or unusual:

- “You can’t see any such thing.” becomes “The last time you saw the sword, it was in the stone.”
- “I only understood you as far as wanting to look.” becomes “Sorry, I didn’t understand the part after ‘look’; guessing you meant looking.” (and reparses as “look”)
- “Real adventurers do not use such language.” becomes “I’m sorry if you’re feeling frustrated. You might try

typing HELP for an introduction to the commands, or SAVE to record your progress and come back later.”

- “That’s plainly inedible.” becomes “Apologies, but that isn’t something the story expected you to try eating.”

In the last case, for instance, the original message assumes the player has tried to eat something strange. What is much more likely, however, is that the object in question is something perfectly edible that the author has failed to implement as an edible object.

Additionally, in an attempt to psychologically separate the player’s feelings for the story from their feelings for the parser, all parser messages are printed in a unique typographical style (italics, by default).

VII. ASPECTS OF THE INTERACTIVE NOVEL

The nature and role of choice in interactive stories has been widely debated. Some have claimed that offering players real choices is antithetical to the storyteller’s role of choosing the most interesting story.

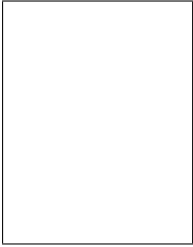
The author believes that allowing players to define what a story means for them, and take actions in the story world that assert and confirm these beliefs, can potentially create powerful, moving stories.

Perhaps the most famous moment of choice in video game history comes at the end of the original *Myst*. The player is asked to decide which of two characters to trust. But other than different ending videos, the choice is ultimately meaningless in the context of the game itself; it has no consequences that the player must live with, because the story immediately ends after it is made. Similarly, in most games some choices are “more right” than others; often there is only one “correct” or “good” ending.

A major design goal for me was to create a story space where meaningful choices are possible, where they take place early enough to have repercussions, and where each ending is equally dramatically valid and interesting. While on the surface *Lacuna*’s plot seems fairly linear and non-branching, it can tell very different stories to different people.

Testers have made *Lacuna* into a story of a young gay man who must battle with a crazed lunatic to do what he knows is right; a story about an aging and bitter widower who rediscovers what it means to love and sacrifice; a story about rejecting complacency in the face of temptation; a story about love conquering all. Each of these stories have the same sets, props, characters, and dramatic beats, but they mean very different things to different people, depending on the choices each one has made as they pass through it.

This, I think, is the power of the interactive novel: giving the player/reader a chance not to Choose Your Own Adventure, but to choose what the same adventure means to each of us. Constructing and learning your own lessons from the dramatic potential given to you is the heart of the interactive novel.



Aaron A. Reed Aaron A. Reed has worked as a travel writer, web monkey, offensive t-shirt designer, graphic artist, 3D animator, filmmaker, and murder mystery producer. His fiction has appeared in “Fantasy And Science Fiction” magazine, and his interactive fiction has won numerous awards in the new media community.