



[MC Frontalot - It Is Pitch Dark](#)

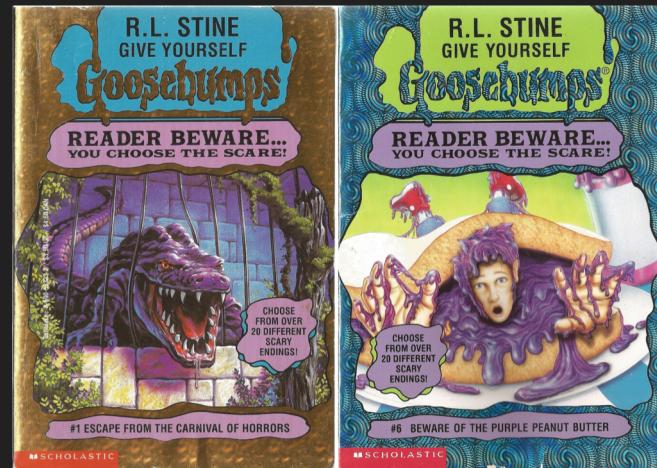
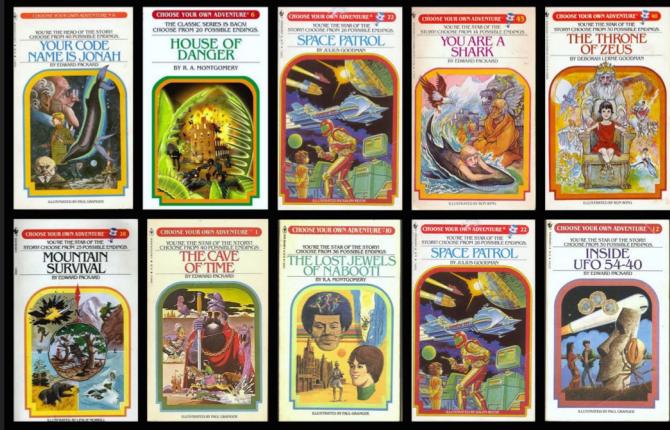
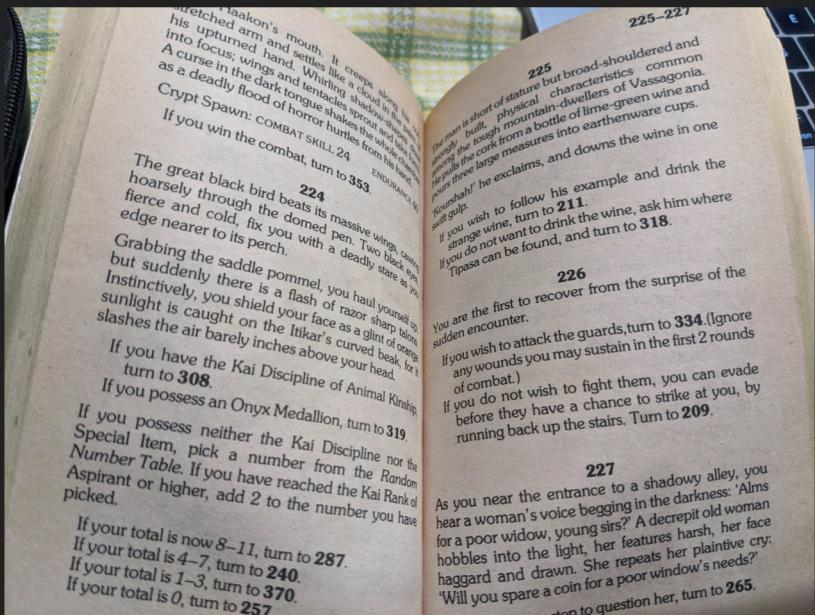
Text Adventure Games

Daphne Ippolito
Chris Callison-Burch

<http://interactive-fiction-class.org>

Paper Interactive Fiction

In the 1970s, “Choose your own adventure” books grew in popularity.



CHOOSE YOUR OWN ADVENTURE™ 5

YOU'RE THE STAR OF THE STORY!
CHOOSE FROM 36 POSSIBLE ENDINGS

THE MYSTERY OF CHIMNEY ROCK

BY EDWARD PACKARD



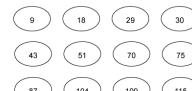
ILLUSTRATED BY PAUL GRANGER

Special
Book
Fair
Edition

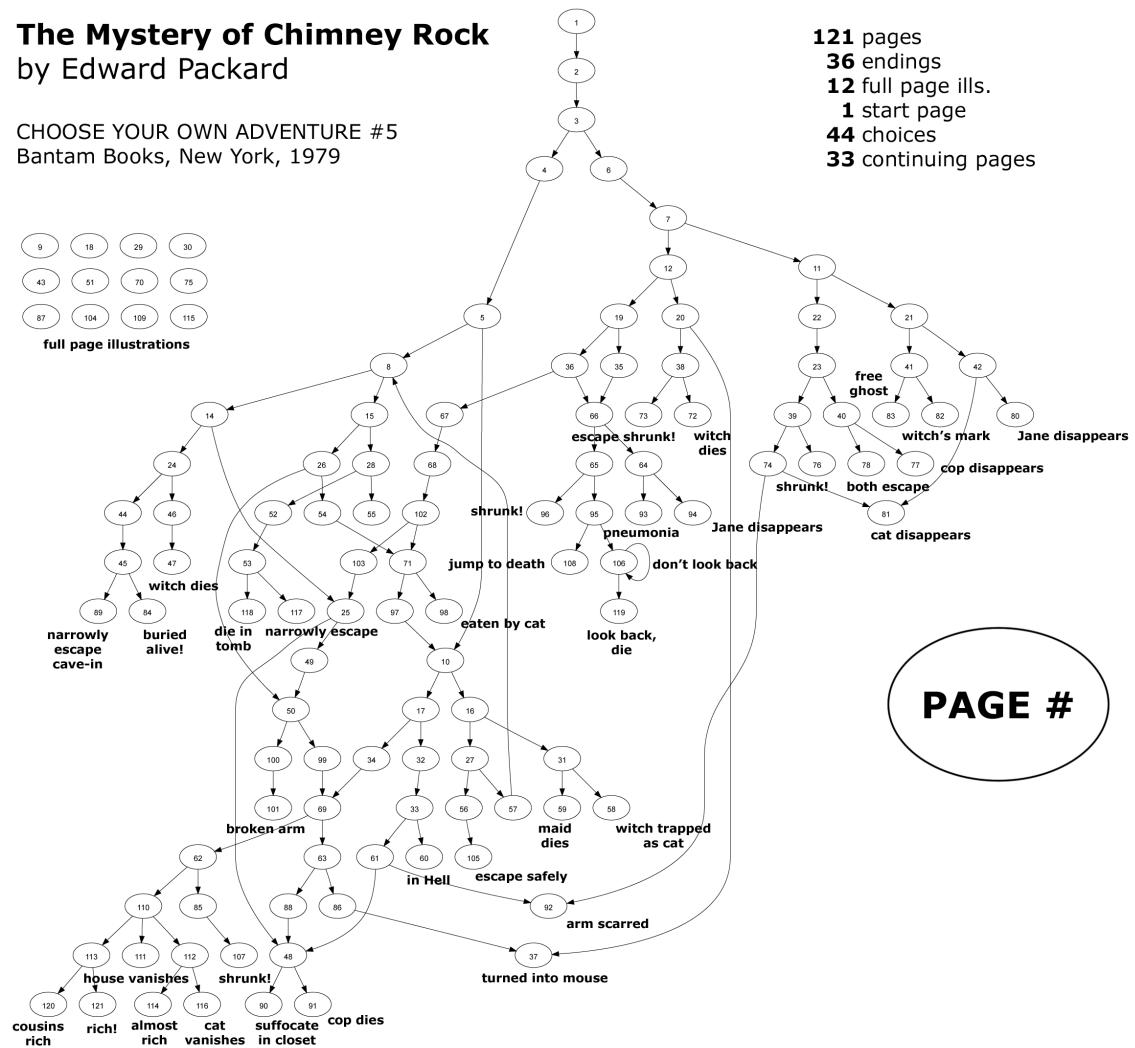
The Mystery of Chimney Rock

by Edward Packard

CHOOSE YOUR OWN ADVENTURE #5
Bantam Books, New York, 1979

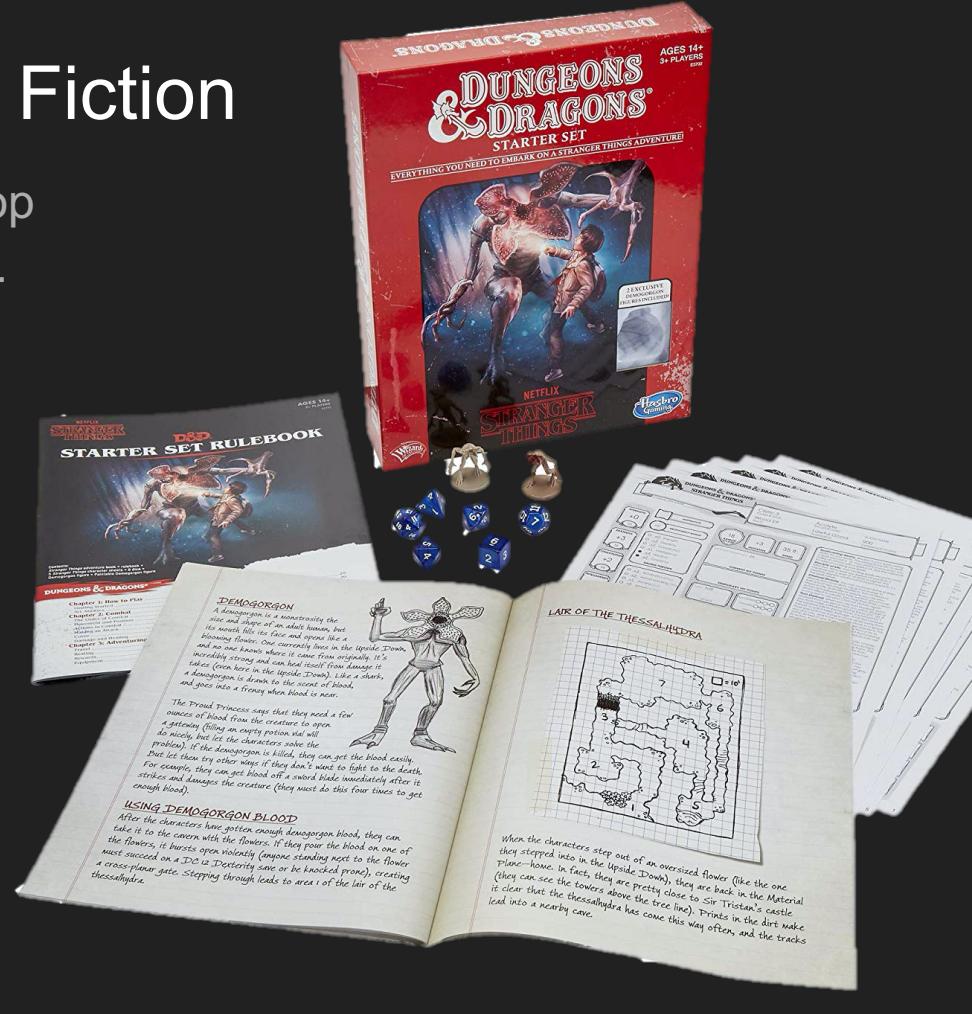


full page illustrations



Paper & Pencil Interactive Fiction

Dungeons & Dragons is a fantasy tabletop role playing game first published in 1974.



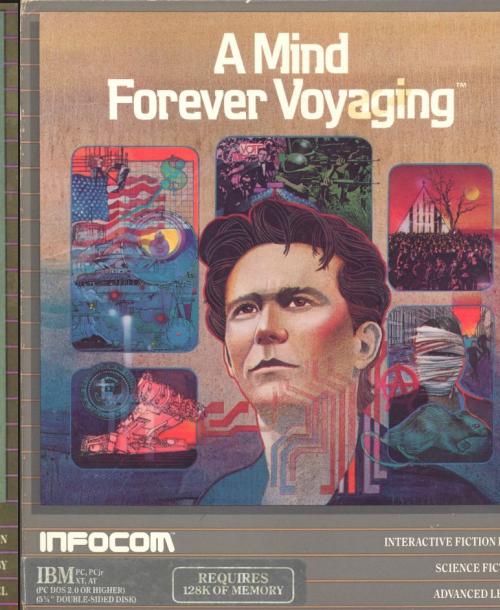
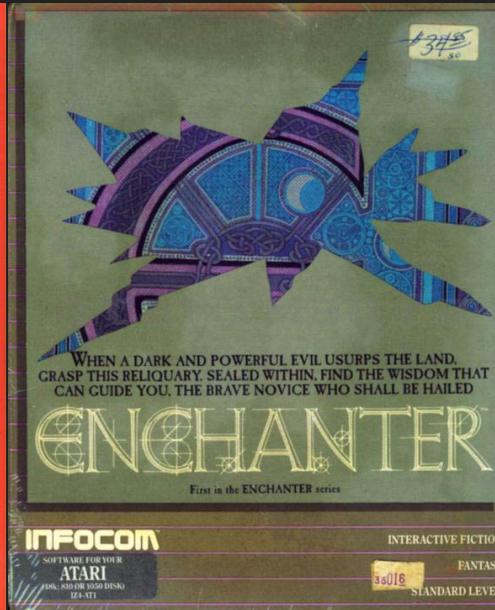
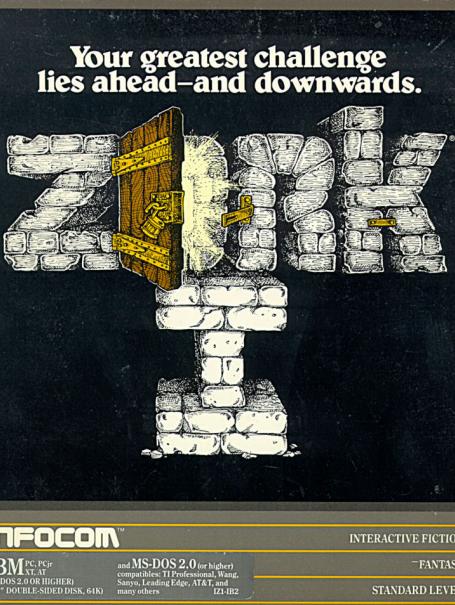
DUNGEONS AND DRAGON

D&D is an open-ended game in which the players assume the roles of characters in a story and can have them attempt any action they want. The game is controlled by a dungeon master, who uses tables, dice, and personal judgment to decide on the effect of a character's efforts.

The players say what their characters do within the world of the campaign. Dice are rolled to help determine the outcome of combat and other encounters. Over the course of many adventures, the members of a party advance in level and become more powerful-and the dungeon master devises new challenges for them.

Computer Games Before Graphics

Interactive Fiction/Text Adventure Games were the best-selling computer games of the 1980s. A company called Infocom created the most popular titles.



On the table is an elongated brown sack, smelling of hot peppers.

A clear glass bottle is here.

The glass bottle contains:

A quantity of water.

>w

You are in the living room. There is a door to the east. To the west is a wooden door with strange gothic lettering, which appears to be nailed shut.

In the center of the room is a large oriental rug.

There is a trophy case here.

On hooks above the mantelpiece hangs an elvish sword of great antiquity.

A battery-powered brass lantern is on the trophy case.

There is an issue of US NEWS & DUNGEON REPORT dated 28-JUL-80 here.

>get sword

Taken.

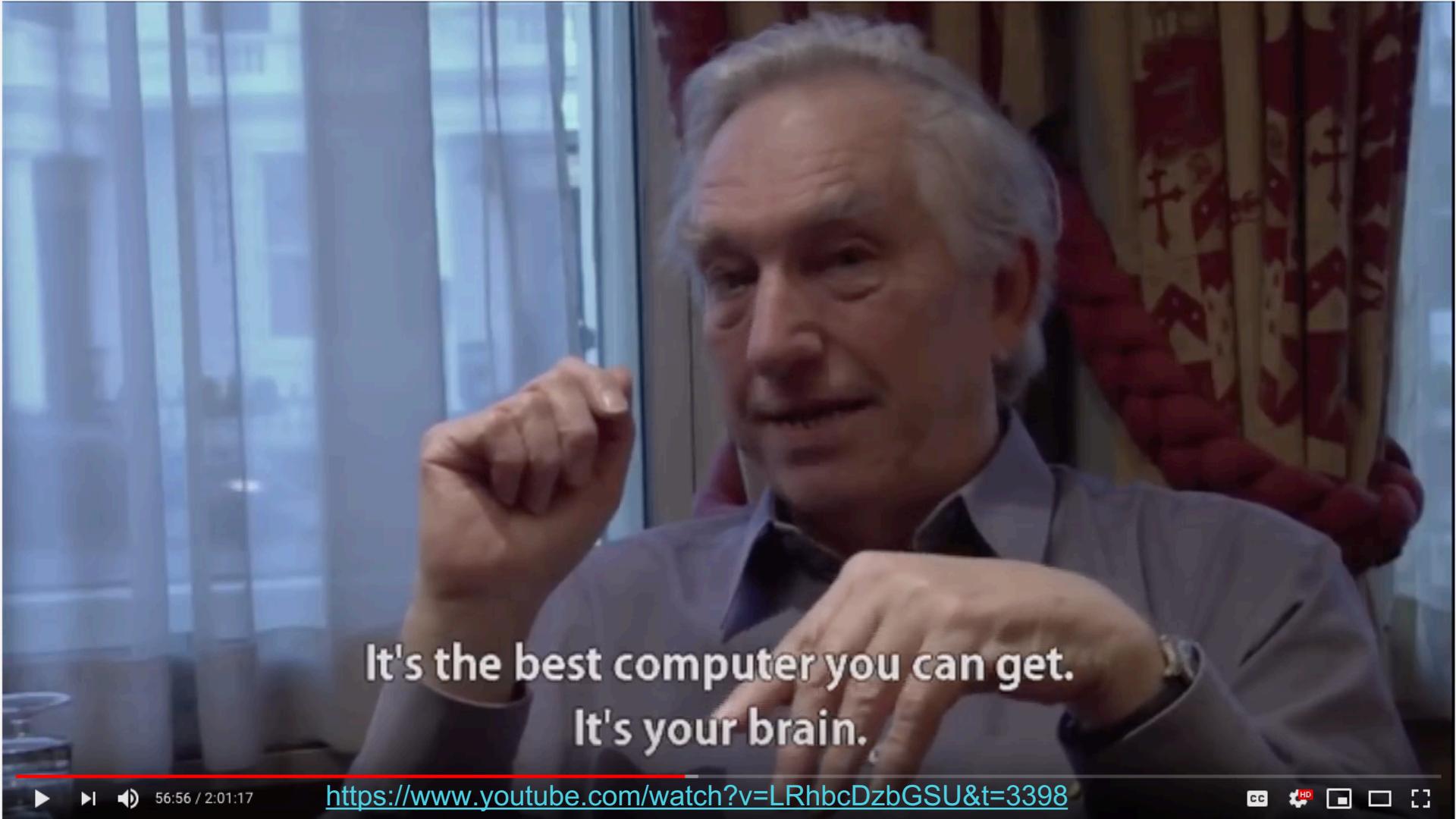
>break egg with sword

You rather indelicate handling of the egg has caused it some damage.

The egg is now open.

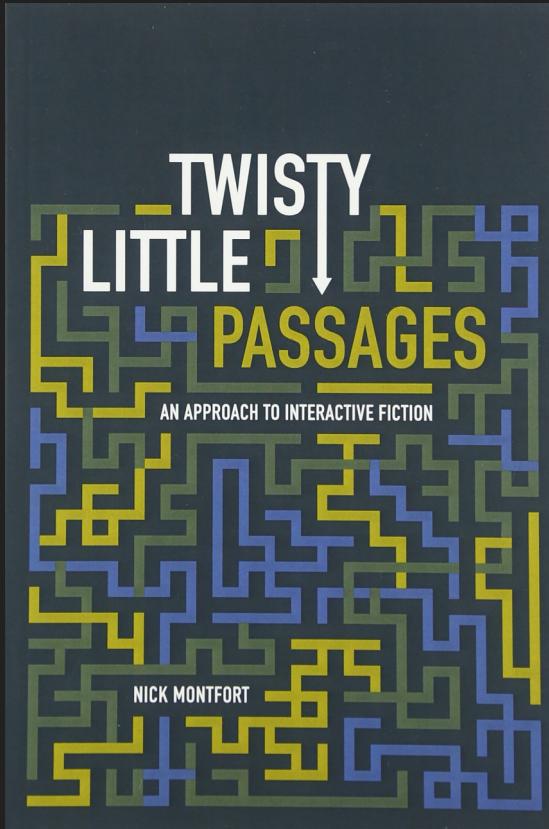
There is a golden clockwork canary nestled in the egg. It seems to have recently had a bad experience. The mountings for its jewel-like eyes are empty, and its silver beak is crumpled. Through a cracked crystal window below its left wing you can see the remains of intricate machinery. It is not clear what result winding it would have, as the mainspring appears sprung.

>_



**It's the best computer you can get.
It's your brain.**

Interactive Fiction Games



The two essential components of interactive fiction are

- The **parser**, which is the component that analyzes natural language input in an interactive fiction work.
- The **world model**, which is setting of an interactive fiction work.

Natural Language Understanding

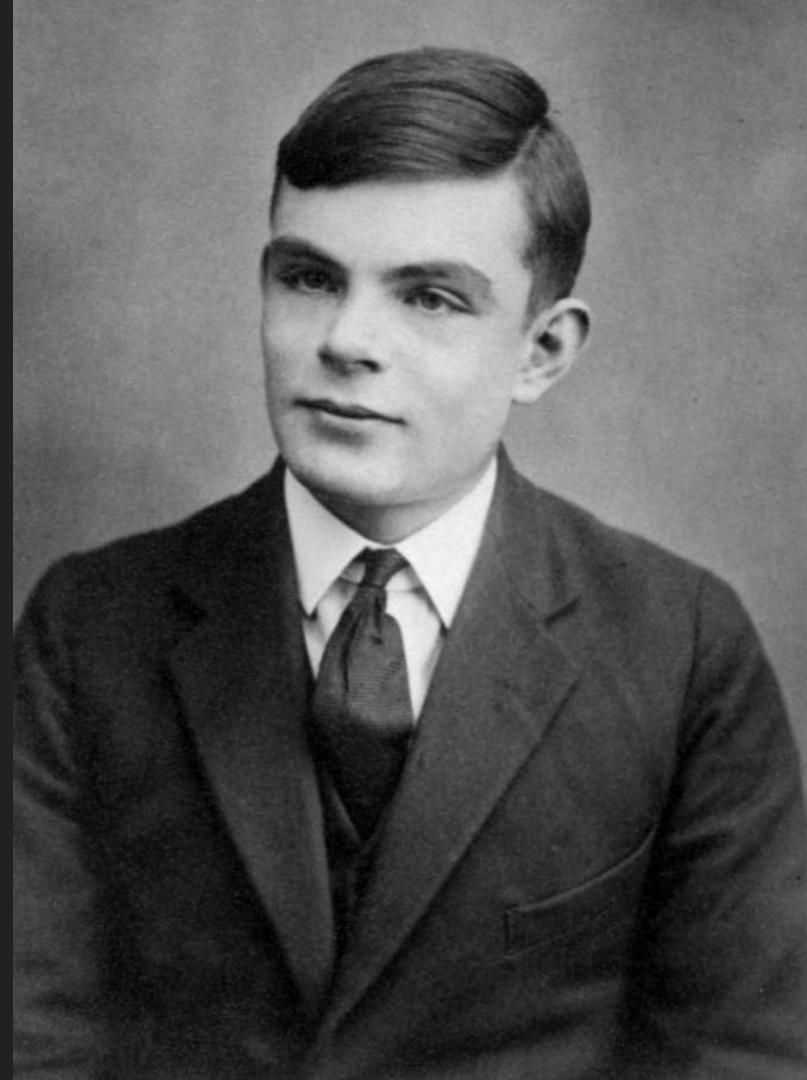
Will it rain tomorrow? Set an alarm for 6:30a.m. Play music from They Might Be Giants. How many pints are in a gallon? Add blueberries to my shopping list. When did California become a state? When is the Winter solstice? What is the weather like in Hawaii this weekend? Turn off the lights. Open the pod bay doors.



Turing Test

The idea of computer conversation was developed along with the general-purpose purpose digital compute. Turing presented it in his 1950 paper “Computing Machinery and Intelligence”. Which introduced the Turing Test. The question “Can machines think?” could then be replaced by one that was easier to answer: “Are there imaginable digital computers which would do well in the imitation game?”

Turing highlighted lighted the importance of conversational ability to our perception of intelligence, at a time when computers almost exclusively processed numbers rather than language.



Turing Test

A human evaluator would judge text-based conversations between a human and a machine designed to generate human-like responses. If the evaluator cannot reliably tell the machine from the human, the machine is said to have passed the test. The test results do not depend on the ability to give correct answers to questions, only how closely one's answers resemble those a human would give.



Early Natural Language Understanding

Welcome to

```
EEEEEE LL      IIII  ZZZZZZ  AAAAAA
EE      LL      II      ZZ  AA  AA
EEEEEE LL      II      ZZZ  AAAAAAAA
EE      LL      II      ZZ  AA  AA
EEEEEE LLLLLL IIII  ZZZZZZ  AA  AA
```

Eliza is a mock Rogerian psychotherapist.

The original program was described by Joseph Weizenbaum in 1966.

This implementation by Norbert Landsteiner 2005.

ELIZA: Is something troubling you ?

YOU: Men are all alike.

ELIZA: What is the connection, do you suppose ?

YOU: They're always bugging us about something or other.

ELIZA: Can you think of a specific example ?

YOU: Well, my boyfriend made me come here.

ELIZA: Is it important to you that your boyfriend made you come here ?

YOU: He says I'm depressed much of the time.

ELIZA: I am sorry to hear that you are depressed.

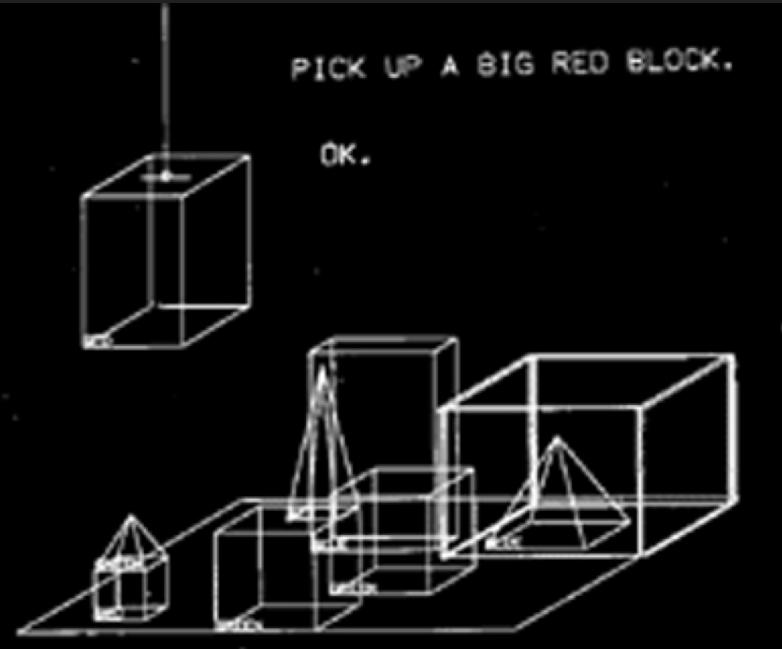
YOU: It's true. I am unhappy.

ELIZA: Can you explain what made you unhappy ?

YOU: ■

PICK UP A BIG RED BLOCK.

OK.



ELIZA

ELIZA is a language analysis program that can run scripts to have different sorts of conversations; the most famous script was DOCTOR, which was “designed to permit it to play (or parody) the role of a Rogerian psychotherapist engaged in an interview with a patient”.

ELIZA was the first computer conversationalist, the first chatbot. ELIZA searched for keywords in input. If some were found, the program would transform the input according to a rule and print out the transformed sentence. If none were found, it would provide a default (usually noncommittal) output like “What makes you say that?”

SHRDLU

Terry Winograd's SHRDLU had a dialog with the user via teletype and displayed an image of a tabletop with blocks on it. It could respond to natural language commands in real time. It would move the simulated blocks around if asked to; it could also answer questions about them.

SHRDLU used its knowledge of the simulated world to help it parse input. It represented its knowledge as procedures. SHRDLU had several different components. There was a module for generating replies to the user,, and one for simulating the blocks world.

Simulated World

What's the difference between a conversational agent and a work of interactive fiction? **The simulated world.**

It represents the physical environment, and things like

- Settings or locations
- Physical objects in each setting
- The player's character
- Non-player characters

It also represents and simulates the physical laws of the environment.



Locations

YOU ARE AT A COMPLEX JUNCTION. A LOW HANDS AND KNEES PASSAGE FROM THE NORTH JOINS A HIGHER CRAWL FROM THE EAST TO MAKE A WALKING PASSAGE GOING WEST. THERE IS ALSO A LARGE ROOM ABOVE. THE AIR IS DAMP HERE.

A location in Adventure

Maps and Mazes

There was a maze Adventure that was essentially impossible to get through without making a map.

The pirate's maze offers rooms that are all uniformly described as “a maze of twisty little passages, all alike.”

To figure out which room is which, the player character must drop objects to mark the different rooms. The rooms, once all alike, can then be differentiated based on their contents and mapping ping of the usual sort is possible.



Objects

In Adventure, instead of a realistic simulation of caving, the author placed five treasures within as an incentive to explore the cave. The player also has to figure out how to get past a snake to move deeper into the cave. The player is attacked dwarves and their treasure is stolen by a pirate.



Verbs

Players input simple sentences such as “get key” or “go east”, which are interpreted by a text parser. Parsers may vary in sophistication; the first text adventure parsers could only handle two-word sentences in the form of **verb-noun** pairs.

Action Words

Farmer and Mrs. Pig certainly have a lot of children. And they are all doing something.



“open the red box with the green key then go north”.

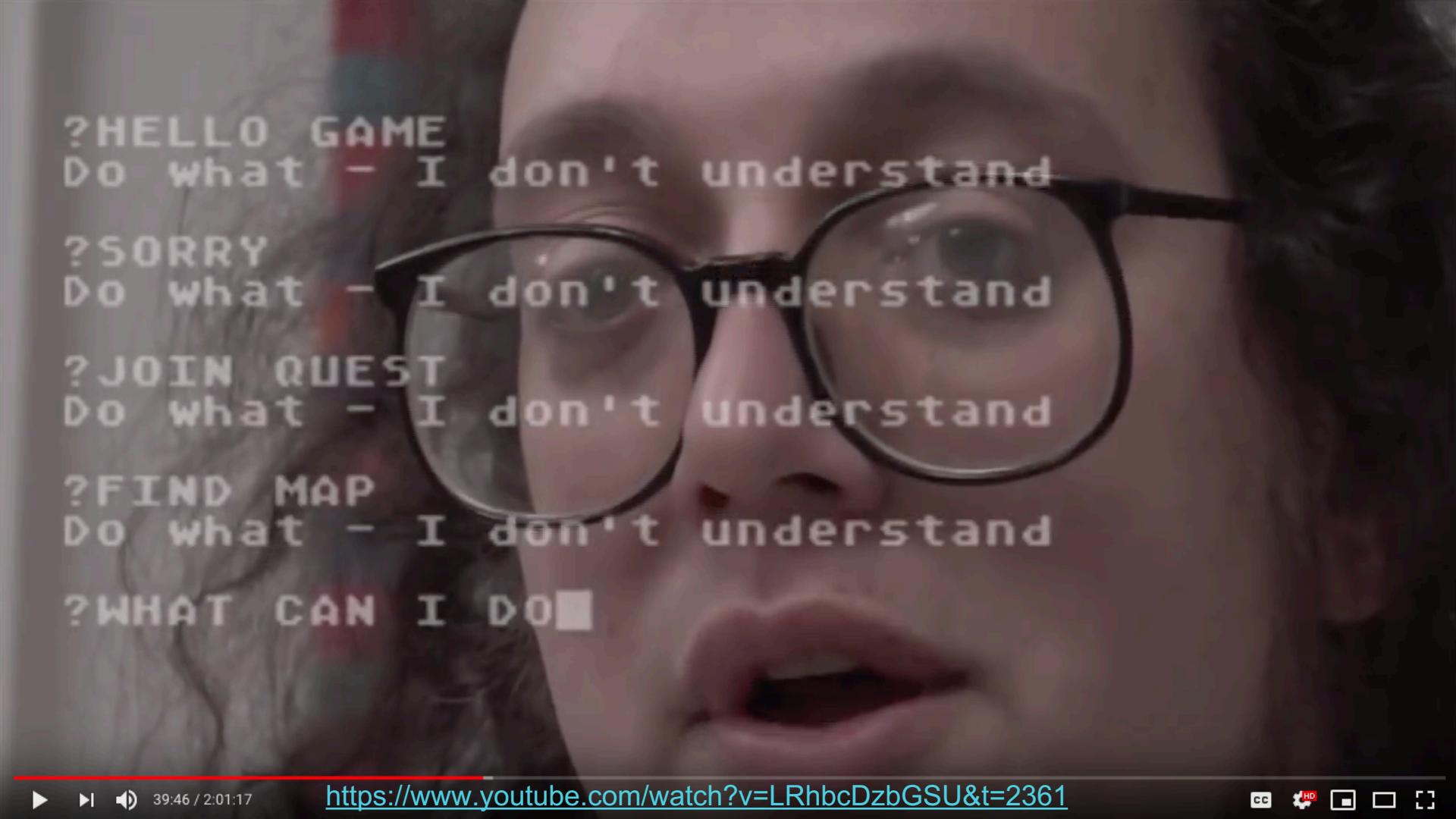
Later parsers, such as those built on ZIL (Zork Implementation Language), could understand complete sentences. They could handle more complex inputs.

Early Parsers

Adventure's language parser was extremely primitive but removed ambiguity. Adventure, with its primitive but effective way of understanding language, that endures and that became widespread. It also became the archetype of the text adventure and of interactive active fiction.

Z-machine

Infocom developed a virtual machine to deploy standardized “story files” on many platforms. The Infocom parser was the best of its era. It accepted complex, complete sentence commands when its competitors’ parsers were restricted to simple two-word verb-noun combinations. Its parser was actively upgraded, and later games would ‘understand’ multiple sentence input: ‘pick up the gem and put it in my bag. take the newspaper clipping out of my bag then burn it with the book of matches’.



?HELLO GAME

DO what - I don't understand

?SORRY

DO what - I don't understand

?JOIN QUEST

DO what - I don't understand

?FIND MAP

DO what - I don't understand

?WHAT CAN I DO■

Why were parsers so bad?

Puzzles

In most interactive fiction, puzzles (sorts of challenges or obstacles) are part of the world the player character moves through. In order to complete the IF work, the interactor must figure out how to meet these challenges.



Mike Gentry

Interactive fiction author

With a game where you're trying to
create a narrative, there's a push.

Theater mode (t)

Puzzle Solutions

The solutions may be arrived at through the player character's senses or by having the player character manipulate things in the surroundings and then observe the results to determine the workings of the world.

Most interactive fiction does not have great replay value. You cannot simply "replay" a riddle if you know its answer.

However, once you learn to play a board game, the knowledge gained from playing it once game doesn't ruin the experience of playing it again.

Writing Style

Interactive fiction features two distinct modes of writing: the player input and the game output. Player input is expected to be in simple **command form** (in linguistics sentences in command form are called **imperative sentences**).

> look in tea chest

“That was the first place you tried, hours and hours ago now, and there’s nothing there but that boring old book. You pick it up anyway, bored as you are”. –Graham Nelson *Curses* (1993)

The responses from the game are usually written from a **second-person point of view**, in present tense.

"I could not unlove him now, merely because I found that he had ceased to notice me".
– Charlotte Brontë's *Jane Eyre* (1847)

First-person – A first-person narrative is a mode of storytelling in which a narrator relays events from their own point of view using the first-person pronouns "I" or "we".
The narrator is the protagonist, or retelling events that they witnessed.

"You are not the kind of guy who would be at a place like this at this time of the morning. But here you are, and you cannot say that the terrain is entirely unfamiliar, although the details are fuzzy."

Jay McInerney's *Bright Lights, Big City* (1984)

Second-Person – The reader is character within the story. This is done with the use of second-person pronouns like *you*. Stories and novels in second person are comparatively uncommon.

Third-Person – The narrator refers to all characters with third person pronouns like *he*, *she*, or *they*, and never first- or second-person pronouns. This makes it clear that the narrator is an unspecified entity or uninvolved person who conveys the story and is not a character of any kind within the story.

Stories

And it was clear to me from my small experience of Adventure,
the description of Zork, the stuff I saw
on these monochrome monitors



Robert Pinsky
Poet Laureate of the
United States, 1997-2000

Artificial Intelligence

Text World

Text-based games are great tools for AI research because to succeed at a text-based game an AI needs to understand language, perform common-sense reasoning, deal with a combinatorial action space and overcome common reinforcement learning problems like partial observability and rewards sparsity.

These skills are ultimately key skills needed for artificial general intelligence.