

Chapter 2

Print Narrative, Interactivity, and Collaboration

All storytelling begins with a conversation

Narrative and Knowledge

Stories are a way to share ideas and create meaning. Today, the intellectual involvement with content is often mediated by physical engagement with the narrative artifact, sometimes the printed pages of a book, sometimes the pixilated screen of a personal computer. There is a difference between engaging with a story through a material artifact as we do today, and engaging with it orally, as was done for millennia before written stories became common. This difference is our starting point for discussing interactivity and collaboration in narrative as it has evolved since the first days of the codex.¹

Literary tradition as we know it in Western Society came to us in its first written representation as the epic of Classic Greek civilization (around 800 BCE). Although presented through the voice of Homer, the *Iliad*, and subsequently the *Odyssey*, were a compilation of stories that had been passed down within the oral tradition of Greek culture, a tradition of collective authorship (Whitman 1958). The newly evolved written text, however, had its detractors. In *Orality and Literacy* Walter Ong discussed the changes that the shift from orality to literacy caused in various societies. He presented the philosopher Socrates' beliefs (circa 400 BCE) that writing was not a good vehicle for dialogue, which he saw as critical to humanity. For Socrates, writing was a dead medium; it reified ideas. That is, it set ideas in concrete text that was immutable (Ong 2002).

¹The codex was the first book artifact. It consisted of sheets of papyrus or parchment, bound together, and protected with a cover. It had replaced the scroll as the common form used for narrative by about 600 CE.

Socrates did not write down his ideas. They were brought to us through the writings of the philosopher Plato, one of his students. In the dialogue *Phaedrus* (circa 370 BCE) Plato had Socrates discussing with his disciple Phaedrus the idea that knowledge could only be attained and conveyed through back and forth oral dialogue. *Written* words were not able to defend themselves through dialogue (Cooper 1997).

From Socrates' perspective, writing was knowledge communication rather than knowledge creation; only oral discourse could convey man's true intellectual participation in making knowledge. "Reading mere words, in his mind, is akin to looking at a lake rather than swimming in it—or worse, looking at a lake and thinking that now you know *how* to swim."² Socrates implied that humans fooled themselves if they believed that writing could replace oral dialogue and represent their finest ideas (Ong 2002).

In orality, discourse is dynamic—humans speak with each other and have the opportunity to respond immediately. As an ideal, such a dynamic exchange is difficult to achieve when the interface used is a narrative artifact such as a manuscript or print text, which seems at first glance to be mute. The value given to dialogue and exchange as a means of knowledge creation provoked those who produced and used written materials to find ways to present ongoing discussion. In medieval times *glossae ordinariae*, comments on content, were included in new versions of texts and provided evidence of the dialogue between scholars. Manuscripts, and later printed books, were published with commentary added to, first, the original text and, subsequently, to texts that incorporated previously made comments. The contents of the manuscripts would evolve with each new copying.

In *Decretals of Gregory*, a thirteenth century manuscript of biblical commentary (Fig. 2.1), we see an example of the juxtaposition of original text and subsequent commentary made by different scholars. The discussion surrounding the content of the written page is, if not dynamic, visible. Scholars also made notations for themselves in the margins of manuscripts (*marginalia*), which provided a further exchange of thoughts as these manuscripts were shared among scholars. A very common format for this period, the *glossae ordinariae* showed that human ingenuity could prevail over limitations a medium might initially seem to have. The manuscript as narrative artifact had become a site of both communication and exchange: it did not only pass on knowledge but endeavored to create it.

²Cartoonist and designer David Malki on writing <http://wondermark.com/socrates-vs-writing/>.



Fig. 2.1 *Decretals of Gregory* shows both *glossae ordinariae* and marginalia. Circa 1241

The First Computers

Even before moveable type brought readers mass production, authors were pushing the boundaries of the codex. The dialogue between author and reader was made tangible when in thirteenth century Europe manuscripts began to include manipulable devices in their texts.³ These included as simple a device as a sundial illustrated on a page on which a reader could place a stylus to ascertain the time, to complex combinatory devices such as volvelles. Volvelles consisted of one or more graduated or shaped paper disks sewn together within the manuscript that readers could manipulate to align information “geometrically as matrices; relationally, as concepts; and ideologically, as radical new paradigms for interdisciplinary thinking” (Helfand 2006).

The first volvelle that has been found in a European manuscript was designed by Matthew Paris, a Benedictine monk. Paris included the volvelle, a simple disk that determined the changing lunar date of Easter, in his *Chronica Majora* (circa 1250). Much more complex were the volvelles designed by Ramon Llull for his *Ars Magna* (*The Great Art*, circa 1305). Llull was a prominent and prolific Majorcan

³ Volvelles were first used in Arabic writings around 1000 CE (Turner 1992).

writer, philosopher, and scientist of the thirteenth and fourteenth centuries (Gravelle et al. 2012). At a time when writers in Europe were beginning to create narratives in the vernacular, he is noted for writing the first major work of prose fiction, *Blanquer*, in Catalan (Doody 1997). At 33, Llull underwent an epiphany and became a Third Order Franciscan. With the purpose of using logic and reason to persuade Muslims to the Christian faith, he developed a method that combined religious and philosophical ideas to create new paths of insight and combine elements of thinking (as evidenced by words and phrases) to logically construct “proofs of God.” He fashioned a series of mechanical devices that used as content the classification system he had devised to categorize everything in nature into a higher and lower order and attributes of God as he had defined them. The *Ars Magna* provided four devices that recombined letters or terms strictly defined according to his classification system. The last of the four devices was a volvelle that consisted of three moveable disks. Llull believed that by manipulating the disks and combining words to create statements, a higher knowledge would be revealed and would provide logical answers to questions about religion and creation (Dalakov 2015). Llull’s purpose was not to reproduce knowledge that existed but to investigate truths, instigate new ways of thinking, and produce new proofs through these combinatory devices. His expectation was that individuals who had access to his manuscripts would interact with the devices included, collaborate in creating knowledge, and be swayed in their convictions by the logical proofs that the combinatory devices provided (Zweig 1997).

Figure 2.2 shows *Figure One* from the four figures in Llull’s *Ars Magna*. Each level of the volvelle represents one segment of a sentence, which, when combined, stated an irrefutable religious or theological truth. Also shown is *Figure Four*, the volvelle, as it was included in the manuscript.



Fig. 2.2 Ramon Llull’s *Figure One* and the *Ars Magna* open on *Figure Four*. 1305 CE

Figure 2.3 shows the terms used in the *Four Figures*. When combined *Figure One* terms identified absolute principles—‘Wisdom is Power.’ *Figure Two* terms identified relative principles—‘Angels are different from elements.’ *Figure Three* terms provided questions: ‘Where is virtue final?’ *Figure Four* terms generated complex propositions and questions.

	Absolute principles	Relative principles	Questions	Subjects	Virtues	Vices
B	Goodness	Difference	Whether	God	Justice	Avarice
C	Greatness	Concord	What	Angel	Prudence	Gluttony
D	Eternity	Opposition	Whence	Heaven	Fortitude	Luxury
E	Power	Priority	Which	Man	Temperance	Pride
F	Wisdom	Centrality	How many	Imaginative	Faith	Sloth
G	Will	Finality	What kind	Sensitive	Hope	Envy
H	Virtue	Majority	When	Vegetative	Charity	Anger
I	Truth	Equality	Where	Elemental	Patience	Untruthfulness
K	Glory	Minority	How/with what	Instrumental	Piety	Inconstancy

Fig. 2.3 Letters and attributes used in Llull’s *Four Figures*

The importance Llull placed on using dialogue and collaboration was demonstrated in his use of interactive elements in both the *Ars Magna* and the *Ars Brevis*, as well as by depictions of himself and his leading disciple, Thomas le Myésier, in the midst of discussions they had. Their dialogue was visualized in the miniature illustrations in the *Electorium Parvum Seu Breviculum*, a fourteenth century compilation of Llull’s writings, one of which is shown in Fig. 2.4.



Fig. 2.4 Ramon Llull and Thomas le Myésier in discussion. Circa 1321

As the disks were spun, they produced text and generated meaning for Harsdörffer. Figure 2.5 shows the *Denckring*. In each of the four corners are illustrations of hands that indicate the physical interaction through which the artifact engaged the reader. Harsdörffer was continuing a tradition of combinatorial poetry that had existed since the Centos of the third century. Poets borrowed segments of other poets work and combined them to make a new work, or a Cento, of their own. Centos were governed by rules laid down around 350 CE. One such rule stated that Centos were to be made completely of segments of other poets work (Palmieri 2012).⁶ The author collaborated with other poets through their poetry to create new work.

In addition to volvelles, manuscripts and printed books included lift-the-flap images called moveables. These flaps were used to show before and after scenes, to view human anatomy, and to complete diagrams. A typical example of the use of moveables is in Johan Stoeffler's treatises on mathematics, astronomy, and astrology, *Elucidatio Fabricae Ususque Astrolabii* (1524), a standard work used by astronomers and surveyors for many years.⁷ Figure 2.6 shows an image of an astrolabe, an early computer used to make astronomical measurements before the development of the sextant. It consisted of a disk with the edge marked in degrees and a pivoted pointer. The fold-out sections were used to make it easier to understand the circles and lines bound by the astrolabe.

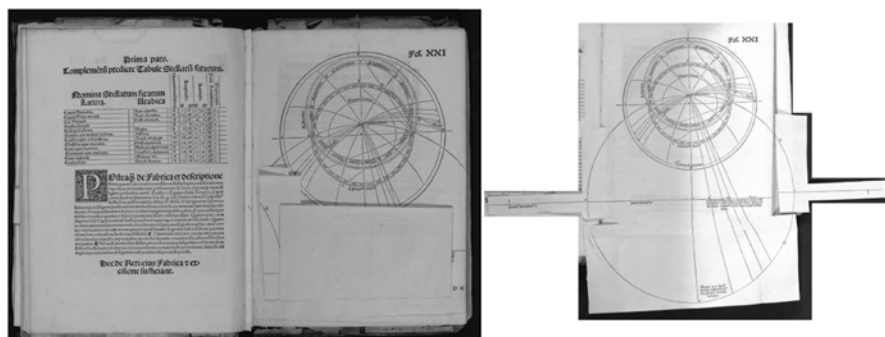


Fig. 2.6 Sixteenth century lift-the-flap image of an astrolabe by Johan Stoeffler

The artist Pietro Bertelli was a vanguard of socially inspired, rather than scientific or mystical, interactive images/texts. Working in Venice, which was noted for its opulently dressed courtesans, he created a number of works that reflected courtesan culture. *Cortigiana Veneza*—Venetian Courtesan, from *Diversarum Nationum Habitus* (1591), shown in Fig. 2.7, has a lift-the-flap of the gown skirt that reveals the courtesan wearing man-style breeches and the extremely high footwear

⁶A reconstruction of combinatorial poems written as early as 330 can be found on the Florian Cramer's website *Permutations*. <http://permutations.pleintekst.nl>.

⁷The entire *Elucidatio Fabricae Ususque Astrolabii* can be found at https://books.google.com/books?id=__E5AAAAcAAJ&hl=en.

(calcagnini)⁸ of the era. Readers could engage, if and when they chose to, with this daring reveal, and in a new and intimate way participate through personal interaction to co-construct the visual narrative about courtesans. These works were at the leading edge of the tangible interactivity that would become very popular in print narrative in the next centuries.

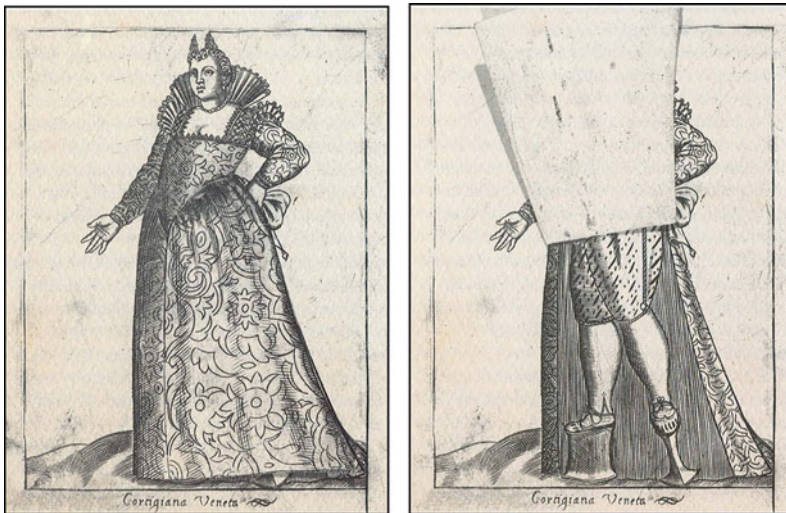


Fig. 2.7 *Cortigiana Veneza* lift-the-flap by Pietro Bertelli. Circa 1591

Tangible Narrative

Interactive or moveable devices used to enhance and make tangible *literary* narratives became popular at the end of the 1700s. Named metamorphoses, mechanicals, harlequinades, transformations, and turned-up books, these narrative devices took a number of different forms. All included some kind of device that could be opened or moved by the reader or that transformed when a page was opened. Some devices were simple, others consisted of intricately cut and complex structures.

Harlequinades were first created in 1765 by the printer Robert Sayer. Sayer, inspired by the pantomimes of the day, wanted to show stories in a series of changing scenes that emulated a performance. The harlequinade was printed on one sheet that was cut and folded into flaps rather than pages. It could be opened and closed to reveal images and text in various combinations and lead readers through a sequence

⁸Information on Calcagnini can be found at http://irenebrination.typepad.com/irenebrination_notes_on_a/2013/06/calcagnini-palazzo-mocenigo.html.

of scenes that told the story. Figure 2.8 shows a harlequinade of a play popular at the time, *Queen Mab* (Madej 2002). It consists of four pages each of which has two attached flaps. Each section illustrates in sequence one of the 12 six-line stanzas of the poem used as text. Readers unfolded the story by raising or lowering the flaps. They could follow the sequence of the text or could open the flaps randomly, which provided an unusual juxtaposition of sequences. The dialogue between reader and text was made tangible when the reader physically manipulated the flaps and collaborated in enacting the cause and effect that moved the sequences forward.



Fig. 2.8 *Queen Mab or The Tricks of Harlequin*, #6, Robert Sayer, 1771

In the early 1700s, books, including moveables, were still primarily published for adults. As is the case with some books today, the line between adult and children's literature was often blurred. Many adult stories, such as *Robinson Crusoe*, were adopted by children as their own; many fairytales were considered suitable reading material to be enjoyed by adults. As childrens' book publishing was more vigorously pursued after the mid-1700s, more books that had moveable parts were created for them. This was in keeping with progressive notions promoted by John Locke in *Some Thoughts on Education* (1692). Locke believed that children needed to enjoy and to be actively engaged in their reading to learn most effectively (Locke 1996).

The blurring between adult and children's interactive books is very evident in the toy books that were first made as novelty items in the 1820s.⁹ Thomas Dean, one of the most successful publishers at the time, created the *New Scenic Books* series in the mid-1850s. These books incorporated the first pop-ups, although this term was not employed until much later. Each book included at least three scenes that a reader

⁹University of North Texas Libraries has an extensive collection of pop-ups which can be seen at <http://www.library.unt.edu/rarebooks/exhibits/popup2/introduction.htm>.

could view as a three-dimensional stage set. Another series, *Home Pantomime Toy Books*, incorporated different sized pages that, when a reader turned them, revealed changes in the scene. Figure 2.9 shows the popular fairy tale *The Beauty and the Beast* set on a proscenium stage.



Fig. 2.9 *Beauty and the Beast*. Home Pantomime Toy Books. London: Dean & Son. Circa 1873*

Emerging Story

In the examples provided to this point in the history of interactive narratives, the reader co-created an existing story. At that point in the development of print narrative the reader's collaboration in co-creation took on a different note. In the following examples readers are provided the opportunity to add their own intentions to the story and actively change the meaning of the story. The distinction comes from the emergent nature of narrative opportunities offered by a particular type of physical artifact.

As one of their ventures in the 1860s Dean & Son also began publishing pull-tab books in which characters were attached to pull tabs that a reader could manipulate. In the harlequinades readers would unfold and reveal parts of the story, changing the sequence but not the story. In *The Royal Punch and Judy* (see Fig. 2.10) the reader could physically manipulate the characters to act out the scenes in the story by moving pull-tabs. Although there is a traditional and very limited set of actions associated with the story, readers could, nevertheless, choose to use these actions when they felt the actions best expressed the personality of the characters and their part in the story. This was, in small measure, emergence in the process of storytelling, during which the reader collaborated with the author's story content to produce an unscripted version of the story.

*The moveable page can be seen at the UNT site: <http://www.library.unt.edu/rarebooks/exhibits/popup2/dean.htm>.



Fig. 2.10 *Moveable Book of the Royal Punch & Judy as Played before the Queen at Windsor Castle & the Crystal Palace*. London: Dean & Son. Circa 1861

The opportunities for the reader to collaborate with the making of the story jumped to a new level when paper dolls were included as an insert in a book. Paper dolls were introduced as play objects as early as the 1790s. Samuel and Joseph Fuller introduced paper dolls as an accessory to their stories in 1810. When they did so, they moved the engagement readers enjoyed with the story off the page into the reader's physical space and under the reader's authorial control.

The Fullers sold the first of their *Paper Figure Adventures* in their London shop *The Temple of Fancy*. In *The History and Adventures of Little Henry* (1810) readers could follow Little Henry on his adventures in a life that had him improve his status from ragamuffin to sea captain. Unlike other paper dolls which consisted of a base doll with clothes that could be put on and taken off the figure, these early cut outs consisted of sets of clothes in stand-up scenes with the character's head as a separate object that could be moved from one set up to another. The author provided a text for readers to follow and Henry's set ups suggested how the character should be played in a particular scene. Readers could follow the sequence of the written narrative or could act out scenes in a different sequence. Once they had Henry physically in their hands they could also take complete authorial control and add new plot twists or make up completely new stories about him. That same year the Fullers also published *Little Fanny* with her own set of adventures (Fig. 2.11).

Both pull-tab characters and paper dolls offered readers more than a collaboration with the author's text to co-construct an existing story, they offered agency through a simple affordance: tangible characters that could be controlled to construct an emerging rather than static narrative.

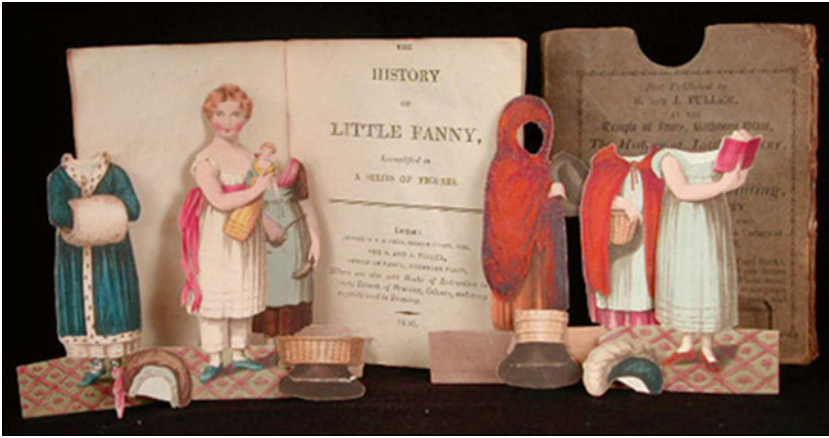


Fig. 2.11 *The History and Adventures of Little Fanny, exemplified in a series of Figures.* A. and J. Fuller, London, 1810

Production Teams

Underlying the narrative experience was the production team that collaborated to create the narrative artifact. In the eighteenth and nineteenth century, not only print narratives but performance narratives: plays, puppet theatres, opera, and ballet, provided opportunities for authors, artists, musicians, and producers to work together to collaboratively create, develop, and bring stories to an audience. In some cases the scripts/texts were the responsibility of one writer, such as the libretto for Mozart's opera *Figaro*, written by Lorenzo da Ponte. In other cases texts were the result of authors working collaboratively in teams. George Melchiori tells us in his introduction to Shakespeare's *King Edward III* that after 1597 records of receipts for payment to playwrights "were to teams of three or more working on single plays, or to add writers for 'additions' to existing play-books. There could be no better evidence that play-writing for public playhouses was originally conceived as a collective endeavor, in which no doubt the actors themselves had the last word" (Shakespeare 1998, p. 13).¹⁰

Collaborating in teams on narrative was exemplified in the twentieth century by the production team required for movies. Early movies "began as novelty not as narrative." Scenes were produced from written synopsis, sometimes as short as one-line descriptions. Without sound, film scenes could be obscure and viewers needed cues to follow. The synopsis, which, like the title cards, provided continuity, was

¹⁰ Production teams that include authors working collaboratively with other specialists go back significantly farther than the sixteenth century, at least to ancient Greek theatre and probably to Ancient Egyptian narratives. The topic is unfortunately not the purview of this book.

often printed to hand out to viewers both as promotional material and to help them understand the film.¹¹ During this early period it was also common for a lecturer or bonimenteur to explain the film to viewers. The delivery and reception of early films was an exercise in improvised collaboration: necessity dictated.

When films became longer after 1900 the requirements for a cohesive narrative became greater and so did the need for scripts. The first scripts were lists of scenes that identified what was to be in the picture. It was up to the director to work collaboratively with his production team so that scenes unfolded cohesively in front of the camera. One of the first movies for which an extensive scenario list was made was Georges Melies's *Trip to the Moon* (*Le voyage dans la lune*, 1902). By 1915, however, movie scripts had become "not merely scripts but, in fact, complex packages comprised of multiple production documents" (Gay 2011). Informal and improvised collaborative teams were soon of a standard comparable to those of major newspapers or publishing houses.¹² For the audience, who at one time had engaged with the film via title cards, a lecturer, musicians, and a printed synopsis card, co-creation of the film became more cognitive and less tangible as these forms merged into the talking films of today.

Of all the performance narratives, one was noted for offering interactive opportunities for the audience. British pantomimes (Pantos) were based in the Italian Commedia dell'arte as translated by the British Music Hall tradition. Introduced by actor manager John Rich in 1717 (Theatre Britain 2015) the first performances encouraged collaboration between the actors and the audience in the form of verbal exchanges intended to engage the audience in moving the performance forward. This tradition has continued until today with the production of contemporary pantos (all based on traditional stories) in which the patter between the actors and the audience is expected and formulaic. The audience is asked to cheer the hero/heroine, boo the victim, and to participate in a dialogue exchange with the characters. The audience, familiar with the patter, willingly and enthusiastically collaborates with the actors in turning in a performance. *A Short History of British Pantomime* (2010) share the following dialogue:

Ugly sister: "I'm much prettier than Cinderella"

Audience: "Oh no you're not!"

Ugly sister: "Oh yes I am!"

Audience: "Oh no you're not!"

¹¹ The synopsis for *Pillow Fight*, an 1897 film made by Edison Studios, read "Four young ladies, in their nightgowns, are having a romp. One of the pillows gets torn, and the feathers fly all over the room." More examples at <http://www.screenplayology.com/content-sections/screenplay-style-use/1-1>.

¹² Telephone, radio, and television narratives were similarly produced by a team of authors and directors working collaboratively to create a narrative artifact.

Choose Your Own Adventure

A major innovation in how authors and readers collaborated in narrative print environments came about in 1979 with the *Choose Your Own Adventure* (CYOA) series of books. CYOA were game books in which the reader determined the main characters' actions and the plot's outcome. While text adventure games were already a reality in the computer world at that time—Will Crowther had created *Adventure* in 1975—computers and game consoles were yet to become a common household presence and the audience for these early games was very limited; print was still sovereign.

The CYOA series originated as a bedtime story that the author Edward Packard was telling his two daughters one evening. When he asked them what happened next, they each gave a different answer. Packard provided an ending for both ideas and the branching story evolved from there. He produced a manuscript of the story with all of its branches but wasn't very successful with selling it and put it aside until he saw an ad placed by a small publisher looking for innovative books. Interested in his concept of an interactive book in which the audience played a part in choosing an outcome, Vermont Crossroads Press accepted and published the manuscript as *The Adventures of You on Sugarcane Island* in 1976 (Hendrix 2011). The company subsequently sold the rights to much larger Bantam Press who were excited about the idea of interactive books and wanted to launch a series entitled *Choose Your Own Adventure*. Packard wrote the first book, *The Cave of Time*, in the new series.

The Cave of Time was 118 pages long and had forty different endings (Lodge 2007). Figure 2.12 shows the cover art promoting “You’re the star of the story! Choose from 40 possible endings” and the narrative map for the story. It was difficult to strike a right balance between interactivity and narrative in print books. To have 30 or 40 endings in a book that was less than 150 pages meant only 6 or 7 pages for each scenario. As pointed out by one of the authors, Raymond Montgomery, that number of pages didn't allow for much character, setting, or plot development. The number of endings grew fewer as the series progressed, until in the final books there were as few as ten endings with more narrative complexity in each scenario—interactivity gave way to narrative in print (Neilsen 2002).

Between 1979–1998, 180 different CYOA books were produced and 250 million copies of these were sold. The enthusiasm for the books shows that readers had a high level of interest in engaging interactively with a story in which they were given the agency to directly affect how the story developed and ended. The interest in interactivity in storytelling exhibited by these avid audiences was readily embraced and vigorously actualized in the emerging world of digital narrative games. Although the readers might have been common to both, it would be difficult to ascertain whether CYOA was a direct influence on early text adventure games. At least in one case, it wasn't. Shortly after he'd

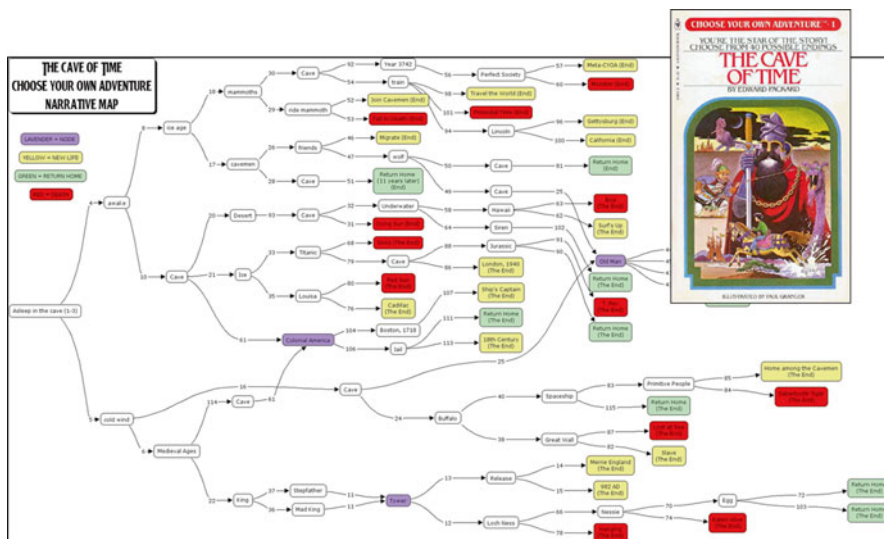


Fig. 2.12 *The Cave of Time*, 1979, cover and narrative map*

created the text adventure game *Zork* in 1977, David Lebling saw the *Choose Your Own Adventure Series* and thought it was a knock-off—someone was “trying to do an adventure game as a book” which had a lot less interactivity than a text game (Hendrix 2011).¹³

The next section provides an introduction into the history of the symbiotic rise of interactive fiction and the technologies of new media and the approach taken to accommodate interest in being a participating partner in story evolution.

*The narrative map of *The Cave of Time* can be found at <http://www.samplerreality.com/gmu/fall2008/343/wp-content/uploads/2008/09/caveoftime.jpg>. A structural analysis is at: <http://samizdat.cc/cyoa/gallery/cave-of-time.html>.

¹³Interactivity in books would take a different turn as publishers began to explore the more extensive use of photos and manipulables. An example of a successful contemporary interactive book is *The Bob Dylan Scrapbook*. This biography consists of text, images, an audio CD of interviews, removable facsimiles such as handwritten song lyrics, and pull-up flaps. Simon & Schuster. New York, NY. 2005.

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