

Scenes from the Digital Paperverse: Interactive Books in the Context of Digital Games

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ABSTRACT

In recent years, digital games have increasingly turned to remediating movable toy books, especially pop-up books, which lends more urgency to comparing the two media. In this paper, I explore the questions of how digital games remediate movable toy books and for what purpose they do so. In three separate scenes, it becomes apparent how the influence of interactive books as ludic mechanical devices extends to digital games. The article covers apps for portable devices as well as digital games such as *What Remains of Edith Finch*, *The Room*, *It takes two*, and *Tengami*. It becomes evident that digital games must be considered a hybrid experience from the get-go, melding material practices from the well-established paperverse and the fledgling digital games.

KEYWORDS

Interactive books; Digital games; Paperverse.

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Prelude

The book's long history and cultural significance have created an immense aura of importance in the Western world. Even today, books continue to have an effect and their almost ubiquitous presence is unbroken, if less pronounced. Although readily and regularly pronounced 'dead,' even in the digital age it is hard to imagine life entirely without printed books. As such, books are but one representative of the much larger cultural space of paper and cardboard. Both are inconspicuous yet immensely influential and multifaceted materials of media culture, as Lothar Müller (2012) has shown in many examples. Arguably, "paper is a material foundation of modern life" (Conrad 2022, 317).

In keeping with their importance, books often become the object of what Jay David Bolter and David Grusin — building on Marshall McLuhan and W.J.T. Mitchell — have termed 'remediation,' i.e. "the representation of one medium in another" (Bolter and Grusin 2000, 45). Bolter and Grusin understand remediation as "a defining characteristic of the new digital media" (Ibid.) which includes digital games. Winfried Nöth argues that remediation is part of an overarching tendency of media culture since the 20th century, in so far as "the mediators have turned to representing representations. Instead of narrating, they narrate how and why they narrate, instead of filming, they film that they film the filming. [...] The messages of the media are about messages of the media, whose origin has become difficult to trace" (Nöth 2007, 3).

Media makers' tendency to remediate media also encompasses digital games, not least digital games remediating books. An early example of such an attempt is the game *Spell Book*, published in 1988 by Soft Stuff for the Commodore Amiga. In this educational game, children are supposed to practice spelling by solving tasks presented on the open pages of a remediated picture book. In addition, many digital games include interfaces designed in book-like fashion, they may show interludes that suggest that the stories they tell are read in a book, or books are depicted as objects in the narrative world¹. Exemplary of all three of these aspects is the intro of the puzzle adventure game *Myst* by Cyan (1993), chosen by Bolter and Grusin (2000, 94-99) as an example for a game remediating a book as well as film. This puzzle adventure starts with a book bearing the title of the game falling out of a fissure in the space-time structure. The players hear a spoken explanation: "I realized, the moment I fell into the fissure, that the book would not be destroyed as I had planned. It continued falling into that starry expanse, of which I had only a fleeting glimpse. I have tried to speculate where it might have landed, but I must admit, however, such conjecture is futile. Still, the question of whose hands might someday hold my *Myst* book are unsettling to me". The book must then be clicked on, which opens a short video sequence depicting the flight to the location of the action, the island of *Myst*. If the players click on this sequence, the game starts at the point where the video sequence ends. In addition, making a digital game appear to be a book can even include the sales packaging (Conrad 2022, 316) — a field of games marketing in decline for some time now (Wolf 2021) — as the example of the 1996 point-and-click adventure *Fable* by Symbiosis Interactive illustrates (Fig. 1). In her study *Interactive Books: Playful Media Before Pop-ups*, Jacqueline Reid-Walsh argues, that digi-

¹ See Dietrich 2017a and 2017b, who discusses remediated books as important elements in worldbuilding.

tal games and movable books² should be looked at side-by-side. Reid-Walsh highlights that both are similar in so far as they “invite immediate engagement” (Reid-Walsh 2018, 2) and thus “both the study of movable books and narrative computer games should focus on key aspects of interactive design and the engagements these designs afford. For, indeed, the two forms exist as interactive, narrative, ‘playable media’” (Reid-Walsh 2018, 3). In recent years, however, digital games have increasingly turned to remediating movable toy books, especially pop-up books, which lends more urgency to the comparison of digital games and interactive books. Using a range of examples from a corpus of c. 80 digital games and focusing equally on the areas of game aesthetics and game mechanics, this paper explores the questions of how digital games remediate movable toy books and for what purpose they do so.



Fig. 1 | Screenshot from *Fable*, Schachtel.

Interlude

A few months after starting with the research presented here, the tech company OpenAI unveiled the artificial intelligence prototype ChatGPT. In early January 2023, by way of experiment, I queried ChatGPT with the question of how digital games could be like pop-up books. ChatGPT replied:

A videogame could be like a pop-up book in several ways:

- Interactive elements: A videogame could include interactive elements that are triggered by the player's actions, similar to the way pop-up books have interactive elements that are triggered by the reader opening and closing the book.
- 3D environments: A videogame could create a sense of depth and dimensionality in its environments and characters, similar to the way pop-up books create 3D elements through paper engineering.
- Story-driven gameplay: A videogame could have a narrative-driven gameplay experience, similar to the way pop-up books tell stories through their illustrations and interactive elements.
- Interactive illustrations: A videogame could incorporate interactive illustrations or mini-games within its gameplay, similar to the way pop-up books include interactive elements within their pages.
- Immersive environments: A videogame could create immersive environments that draw the player into the story and world of the game, similar to the way pop-up books transport readers into their illustrations through interactive elements (OpenAI 2023)³.

ChatGPT's concise hypothesis provides interesting impulses, even though it is not based on knowledge of or experience with either digital games or interactive books. In fact, evidence for all five of the AI's suspected phenomena are observed in digital games. Nevertheless, the hypothesis is not nearly exhaustive because it ignores the actual media-historical context. I therefore discuss below, beyond the AI hypotheses, four notions of movable toy books' remediation in digital games. In three separate, yet interconnected scenes, it becomes apparent how the influence of movable toy books as ludic mechanical devices extends to digital games: (1) movable toy book apps, (2) movable toy books as historical and magical artefacts, (3) movable toy books as puzzles, before finally addressing movable toy books and the digital 'paperverse'.

² In the following, I refer to movable toy books as such movable or interactive books that feature typical paper mechanics such as flaps, pull tabs, pop-ups, volvelles, and the like, and that are primarily visual-narrative and ludic-explorative in nature. However, the study of digital games shows that most often pop-up mechanics are remediated, i.e. paper mechanic constructions which create three-dimensional objects by employing two-dimensional cardboard elements that automatically unfold from the page when it is opened. I use the term digital game to address all software programs which a predominantly ludic in character, regardless of platform or distribution.

³ I quote from screenshots I took from the reply, which are not openly accessible or otherwise reproducible.

First Scene: Movable Toy Book Apps

Not to be regarded as games in the strictest sense, although sometimes furnished with game elements or mini-games, a number of mobile apps for tablet computers and smartphones have been appearing since the early 2010s that attempt to remediate movable toy books.

In the summer of 2008, digital gaming changed thoroughly because of the opening of new software distribution platforms. Apple launched its App Store in July 2008 for the low-friction distribution of games and applications for the iPhone and Macintosh-branded personal computers. In August of the same year, Google opened a competing platform with the Play Store for the Android operating system. With a delay of some years, Microsoft followed suit in 2012 by rolling out its Windows Store. All three stores allow users quick and effortless access to software for mobile devices, making selecting, downloading, and installing new games and other software a mere matter of seconds. By 2023, Apple's App Store alone lists 3.59 million applications of which 984.000 or 21,8% are digital games (Curry 2023).

As companies struggled to create and publish new software products, digital picture books were soon identified as suitable candidates for digital remediation. Several of the aspects of pop-up book remediation adopted by ChatGPT can be identified in the movable toy book apps: they use interactive elements or interactive illustrations (including mini-games), they rely on immersive three-dimensional spaces in which two-dimensional objects are presented in a way that creates the impression of spatiality.

From 2012 to 2015, Dublin-based company StoryToys launched several series of digital pop-up books between, spearheading the application of pop-up-book design to digital apps. Previously, browser games like Disney's *Winnie the Pooh*, developed by Disney Interactive and already released in 2008 with a Windows port released in 2011(?)⁴, proved the concept. Here, Winnie is guided by clicking on hotspots through the Hundred Acre Wood. As Winnie pursues his search for honey, each new scene is staged as one double-page spread of a pop-up book. Apps with a similar approach prove successful. For instance, the digital picture book app *Fairy Tales – Children's Books* (also *Fairy Tales – Bedtime Stories*) by Tashkent-based Amaya Kids, which is also based on the aesthetics of pop-up books, has been downloaded over 1 million times in the Android store alone and has received above-average ratings from users (Fig. 2).



Fig. 2 | Screenshot from *Fairy Tales*.

One Jesse Smith, for example, praises: "Thrilled! I've been looking for an app like this since we had our first child. The narration is fantastic, the stories are varied and entertaining, the animations are brilliant, the games are fun, there are no ads and it holds my child's interest. Guilt free screentime [sic] that actually works? Heck yes. Great job, team!"⁵. Evidently, the app is well received by its audience. This is

likely also due to its low-threshold availability, which allows access to the game in most countries and households⁶.

⁴ Disney's *Winnie the Pooh*: in the International Games Database, the game is recorded as follows: 2008 Web browser, 2014 PC/Windows "Disney Winnie the Pooh" (2008) (igdb.com). On Steam, however, it is listed as 2011 "Winnie the Pooh" (steampowered.com).

⁵ I quote from the App's page in the Google Play Store at <https://play.google.com/store/apps/details?id=com.amaya-soft.bookstore4.en&hl=en&gl=US>. Accessed February 15, 2023.

⁶ See, for example, Jere-Folotiya et al. (2014) concerning app-accessibility and its relevance to children's learning in the Global South, and Picton (2014) on the impact of digital books for developing reading skills for children from disadvantaged households.

Nevertheless, studies on reading literacy show that reading digital children's books contributes less to reading comprehension than printed books (Furenes et al. 2021), although parental involvement seems to be crucial for acquiring reading skills regardless of the medium (Lauricella et al. 2014). There is also evidence that multimedia extensions of picture books in the digital medium, such as animated images, music, and interactive elements, can enhance children's acquisition of reading skills (Takacs et al. 2014; Smeets and Bus 2015). It appears, perhaps unsurprisingly, that movable toy books, too, are affected by the general shift in media consumption away from print and toward digital formats. In turn, playful forms of interactivity that are essential to movable books, as Reid-Walsh (2018) has shown (and as the title of the present *Journal of Interactive Books* highlights), are transformed and may in future be — although never entirely, as Jenkins and Thorburn (2004) have argued — replaced by new forms of interfacing with media as societies gradually move away from paper.

In a reductionist fashion, the pop-up mechanics known from paper-books are remediated in the movable toy book apps. While the functional implementation of the moving elements is indispensable in movable toy book, the apps often merely attempt to create the general visual impression of such mechanics without adequately reproducing the mechanics themselves. For example, in the app by Amaya Kids, various fairy tale books are displayed on a virtual table. The stories are predominantly conveyed in the form of illustrated texts on simulated book pages, which are turned over via swipe gestures. Every few pages, a pop-up image interrupts the reading flow. As the pages open, they emanate tiny twinkling stars conventionally associated with magic. The virtual table can be tilted and rotated by a few degrees via gesture control. This is probably intended to equally emphasize the three-dimensional impression and to emulate the manual use of a printed movable toy book in order to deepen the immersion. For this purpose, figures and scenery are placed as two-dimensional objects on the three-dimensional surface of the book. By staggering the figures on the book page, a spatial impression is created in the same way, although the principle is not reserved for game picture books, but is also familiar from folding perspectives and paper theatres. However, the characters and objects do not fold out of the paper, but are quickly faded in one after the other and at the same time subjected to a transformation in which they are stretched, first vertically and then horizontally.

The resulting impression resembles the unfolding of figures in movable picture books like Leopold Chimani's *Bunte Scenerien aus dem Menschenleben* (1836) without actually re-creating it (Fig. 3)⁷.

Throughout, the pop-up images in the app do not aim to be authentic representations of paper mechanics; rather, they attempt to use simpler means to achieve a comparable effect that echoes the aesthetics of pop-up books without incurring the technical expense of mechanical design and, subsequently, accurate digital replication of the mechanics. They stand in for the original paper mechanical components but replace them with simpler effects that can be achieved more quickly and cheaply.



Fig. 3 || Screenshot from *Chimani*.

⁷ On Chimani, see Beisbart 1997; Pohlmann 2010.

Second Scene: Movable toy books as historical and magical artefacts

Children's toy books have a rich history that dates back to the early 19th century, but they reach their first artistic peak towards the end of the 19th century with the books by publishers Dean & Son and Ernest Nister, as well as artist and paper engineer Lothar Meggendorfer. In some digital games we find movable toy books corresponding to this first artistic peak as historical objects from the Victorian era, a historical period intensely connected in popular imagination to the eerie and gothic. This is the case in the third part of the puzzle game series *The Room* by Fireproof Games, published in 2015. In the course of the story, the players enter a library where they find a curious wooden device similar to a book that reveals a pop-up picture by inserting a specific object. At first, however, only a poster of the fictitious magician Simon Greyson, who performs under the stage name 'The Great Khan', can be seen in this device. On this poster, a small pyramid object floats above the magician's hands; next to this we read, "He holds the mysteries of the universe in his hands!" As the game's story progresses, the players obtain these pyramidal objects through



Fig. 4 | Screenshot from *The room*.

solving numerous puzzles: Each major section of the middle part of *The Room Three* ends with collecting one of the objects. Thus, the poster's motif links to the background story of the game and to the game's plot. Once the aforementioned contraption is closed, a metal cube can be taken out, which can be transformed into a sphere in another apparatus. Once this sphere is inserted into the poster apparatus, the poster no longer appears when the apparatus is opened; in its place, a pop-up picture unfolds that shows a theater proscenium (Fig. 4).

The fact that the apparatus must be opened by means of a 'key', a cube that has to be transmogrified into a sphere first, has its reason primarily in the linear way in which the game leads the players from one puzzle to the next with players usually only being confronted with one puzzle at the time. Accordingly, keys serve as gatekeepers that stop player's from progressing in a non-linear fashion. At the same time, thematically the transformation of the cube, which has no real-world physical foundation, recalls the magic that 'The Great Khan' stands for: Turning a cube into a sphere corresponds on a three-dimensional level to the impossible squaring of the circle in two-dimensional geometry. In the game, this problem is solved through magic. The movable toy book in *The Room Three* is thus presented as an object that is at least adjacent to the realm of magic. The self-erecting picture in *The Room Three* takes on a magical dimension itself, in so far as it can be entered through a gap in the curtain. To do so, players need to apply an eyepiece, a device and attached game mechanic introduced earlier in the game. Through the lens of the ocular, players can see a vortex of otherwise invisible objects twirling around the gap in the curtain. They can then enter the theater stage through this gap. Shrunk down to the size of the toy theatre, players find a gramophone on the stage that is key to solve the next puzzle.

In doing so, the game follows a metaphoric trend since the 19th century of describing toy books as magical or wondrous that would lend itself to a metaphorological study along the lines of Hans Blumenberg's theoretical approach (Blumenberg 2010). This is exemplified by paratexts of interactive books like Dean's *New Magic Peep Show Picture Book* (Dean & Son 1861), Wilhelm von Breitschwert's *Das wunderbare Bilderbuch: Ein Festgeschenk voll komischer Sachen, zum Staunen und Lachen für heitere Kinder* (Breitschwert c. 1870), Tom Seidmann-Freud's *Das Wunderhaus: Ein Bilderbuch zum Drehen, Bewegen und Verwandeln*

(Seidmann-Freud 1927), and carries through until today, e.g. in Matthew Reinhart's *Disney Princess: A Magical Pop-Up World* (Reinhart 2015). The re-print of Nister's revolving pictures book *In Wonderland and What Is to Be Seen There* (Nister 1895) under the title *Magic Windows. An Antique Revolving Picture Book* (Nister 1981) is a striking point in case. This metaphorical look at toy books is not limited to the publications' paratexts but also encompasses theoretical approaches, for instance Jean-Charles Trebbi's *The Art of Pop-up: The Magical World of Three-Dimensional Books* (2012) and Francesca Telli's and Sara Degrado Valdevira's article *La magia dei libri pop-up: Restauro di libri rari e straordinari* (Telli and Degrado Valdevira 2022). Also, recall the magical stars in the children's book app mentioned above.

That the pop-up image in *The Room* shows a theater points to the proximity of paper theaters and interactive books, both of which were typical entertainments in the nurseries of Victorian middle-class homes. Moreover, the pop-up image in *The Room* is presented as part of a Victorian media world that includes, among others, in addition to the gramophone, other mechanical and electrodynamic media apparatuses such as telescope, telephone, phonograph, and coin-operated fortune-telling machine. Consequently, the movable toy book is staged in the game as a mechanical, potentially magical media product associated with the past.

Similarly, *The Inheritance of Crimson Manor*, a 2022 first person puzzle game by MediaCity Games set in a Victorian mansion, includes two movable toy books. One is a pop-up book in the style of Nister's pop-up books, the other a picture book with pull-tabs in the same general vane as Meggendorfer's many movable picture books (Figs. 5-6). Here, too, the presence of the books at least in part intends to set the stage for a gothic setting by calling on a somewhat distant past by presenting (media) artefacts from times gone-by. By including movable toy books as media from the past, the digital games implicitly supplant them through remediation.

A third game to be considered in this context, is Stockholm-based Hazelight Studios' two-player-coop-platform action adventure *It takes two*. The work, which collected many accolades since its release in 2021, presents the players with the simple story about a married couple undergoing a divorce whose child wants to run away because they see themselves as the reason for their parents' difficulties. Through the touch of their child's tears, the parents, embodied by the players, are magically transformed into dolls, one made of modelling clay, the other made of wood. Under the pretence of seeking a way to be turned back into humans, the parents undergo a process marital counselling guided by the (Mexican stereotype-laden) Dr Hakim, a personified guidebook aptly titled *Book of Love*. The gameplay alternates between sequences that feature intense platforming and fighting or solving puzzles, and less hurried passages. In these slower sequences, players encounter c. 25 mini-games that invite them to stay a while and play a game within the game. These remediated mini-games range from traditional children's outdoor and ball games like tug-of-war or volleyball, coin-operated automated amusement machines like rodeo bulls, tin toys, slot cars, chess, an Etch A sketch-like drawing toy, and a number of types of older video games. At times, the game itself even takes on the looks of other types or genres of digital games.

One of the game's sequences takes Cody and May to Rose's playroom where they find two interactive books. The first is



Fig. 5 || Screenshot from *Crimson Manor 1*.



Fig. 6 || Screenshot from *Crimson Manor 2*.

a sound book that at the touch of a button replays four different sounds (pig, alarm clock, ambulance, rooster). The second is a pull-tab-pop-up book that shows the fable *The Tortoise and the Hare* as well as *Little Red Riding Hood* (Fig. 7). Players can interact with both books, pulling tabs or pressing buttons as they please, to set the characters in motion or make the sounds play. Much like Nöth has pointed out, in *It takes two* “messages of the media are about messages of the media” (Nöth 2007, 3). By remediating many different games and toys, *It takes two* mimics party video games such as *Party Mix* (1983), the *Mario Party* series (since 1998), or *Wii Party* (2010). Moreover, the game establishes itself by the by as an archive of interactive artefacts that sit in a cross-section of media history and toy history. Presenting different types of games and ludic devices, *It takes two* forms what appears to be a history of modern interactive media and toys and places within this space the two interactive books, presenting them as part of the history, social, and media context of digital games such as itself.



Fig. 7 | Screenshot from *It takes two 2*

While neither of the three games discussed in this section purports to be a movable book, *The Room Three*, like its prequels and sequels, exhibits a heightened attention towards the way players interface and interact with the puzzles in the world that it presents. Whereas many puzzle games typically are operated by no more than the flick of a button, either on a mouse, keyboard, or gamepad, *The Room Three* makes players perform gestures either by swiping the finger over the screen of a tablet computer, or by keeping the mouse button pressed and moving the mouse — depending on the platform the game is played on — to slide open secret doors, rotate conspicuous discs, or pull up hidden flaps. Hence, in *The Room Three* solving a puzzle, e.g. opening a puzzle box one hidden compartment at a time, is always a mechanical performative process that is not entirely unlike manipulating an interactive book.

Third Scene: Movable toy books as puzzles

Nyamyam’s *Tengami* (2014) uses a similar approach to the mechanical way players interface with the game. Inspired by the art of sumi-e, the platform adventure game set in a Japanese landscape sends players on a chase for cherry blossoms in an effort to revive a dead cherry tree. Quite unlike the aforementioned games, however, the spaces players navigate in *Tengami* presented as the pages of a pop-up book⁸. This book, which lies on a table in the background of the menu screen, opens and is zoomed in on at the outset of the game in an introductory sequence, letting players know that the story they are about to experience takes place on the pages of this book. The pages themselves, then, function and look much like a theatre stage.



Fig. 8 | Screenshot from *Tengami*.

Puzzles have to be solved in most spaces before moving on to the next space by turning over the page, which makes the present scenery fold in onto itself and a new backdrop to unfold from the following page (Fig. 8). The game ostensibly presents itself as pop-up book on whose pages the story as well as the setting unfolds in a literal sense. Much like ChatGPT hypothesised, the game uses interactive elements that are manipulated by clicking, dragging, and pulling. Dragging elements opens and closes them, dragging on the corner of the screen will flip over the whole page, and pull-tabs serve to manipulate puzzles.

⁸ Nyamyam uses the same pop-up aesthetic in its 2019 comedy interactive narrative *Astrologaster* in which players take on the role of the notorious astrologer and healer Simon Forman (1552–1611). Players, however, do not navigate the spaces; instead, the mechanic of turning over the page serves as confirming inputs and relates to the volumes of notes about his cases and dealings Forman has left after his passing.

Tengami is praised for its aesthetic, which closely resembles that of pop-up books. However, reviewers criticise that *Tengami* works well on tablet computers, which favour shorter play sessions, more immediate interfaces, and less mechanical complexity, but fails to impress on PC for the same reasons (Laukota 2015). It is indicative of this perceived incoherence of game mechanics and game interface that the iOS and Wii U versions of *Tengami* received much higher average scores on the review aggregator *Metacritic* than did the PC version (see works cited below for references). Interfacing with games by means of a screen on desk as well as mouse and keyboard potentially creates distance between the players, the game device and the game itself. Mobile apps operated by touching a device in one's lap or hand may significantly reduce this distance and, in turn, increase immersion. This may explain the success of pop-up apps and games on mobile platforms.

Other games follow a similar design choice of using the pop-up pages as landscapes, with *Tengami* possibly being of some influence due to its wide critical reception. In *Bookend* (2019) by independent developer Paper Crown Interactive, a short action-puzzle game, players must steer a young witch through a sequence of pop-up book pages (Fig. 9). The main character flees an angry mob that blames their mother, also a witch, for an asteroid threatening to destroy their village. On a game mechanics level, each self-contained double-page spread of the simulated book is a section or level of the game, and on a narrative level, the double-page spread corresponds to a segment in the girl's journey. The pages correspond to the unit of the level or stage common in digital games.



Fig. 9 | Screenshot from *Bookend*

While games under development are subject to change, it bears mentioning that, that Nuremberg-based independent games studio Besworn Games is currently working on a pop-up book-inspired game of their own: *The Orphan: A Pop-up Book Adventure*, for which they acquired funding by the media fund FilmFernsehFonds Bayern. Similar to *Tengami*, the demo of *The Orphan* reveals that the pop-up-pages folding out of the centrefold serve as a landscape that the player character has to navigate through manipulating interactive elements. The action that follows takes place on the pages of the pop-up book; to navigate them, the character must unfold pop-up elements, pull tabs, and perform other actions typical of game picture books — simulated by mouse and keyboard inputs. The pop-up book forms the landscape here. Traversing it is the primary obstacle that must be overcome to win the game. The pop-up book permeates the whole game as leitmotif on many levels: from the game title to the save icon, media history trivia on the loading screens, its aesthetics, spaces, mechanics, puzzles, and enemy design.

As described on the developer's website, the game

is a 3D side scroller, single player, puzzle adventure game with a scary atmosphere. A child finds a battered and tattered pop-up book in the attic. With curiosity, he opens it and, to his surprise, is magically transported into the book where it [sic] experiences the story of the orphan child in the book. The world of the main character is shaken when a fire breaks out in the house one night, which devours the house and its [sic] parents. In search of a new home, the orphan experiences adventures, must defy dangers and always be on the lookout for the henchmen of the orphanage director, the shadow men. The walls of the orphanage keep a dark secret. Experience the story of the child in search of a new home and family in the magical world of *The Orphan* ("The Orphan: A Pop-Up Book Adventure").

Once more, the toy book is described as magical. In the terms of the popular digital encyclopaedia *TV Tropes*, it serves as a 'portal book' ("Portal book"), a trope invoked in numerous books, films, and other media, prominently in Michael Ende's *The Neverending Story* (Ende [1984]). In *The Orphan*'s introductory video sequence, the book dates to 1890. Regardless of the ahistorical notion that a pop-up-book in the style of 1930s Blue Ribbon books should have come out in the late 1800s, this date serves to mark the

book as a media artefact from days gone by, in the same way the books in *The Room* and *The Inheritance of Crimson Manor* are.

Lastly, Dionous Games's 2021 adventure *Watch Over Christmas* should be mentioned. The work is a point-and-click adventure game faithful to genre conventions, which tells how twelve-year-old Cisco frees Santa Claus from Krampus' clutches on Christmas Eve in order to save Christmas. Near the end of the game, Cisco frees Santa Claus from the prison cell where Krampus holds them locked up. Cisco finds the key to



Fig. 10 | Screenshot from
Watch over Christmas.

the cell in a pop-up book, which serves as an inside narrative about how Krampus was able to capture Santa Claus. The book is hidden in a shelf in Krampus's office and has the talking title *The Trap*. When the player clicks on it, the book is shown in a close-up that fills the entire screen (Fig. 10). It features pull-tabs and other movable toy book mechanics. By replaying Santa's capture — as a game within a game — and thus solving the puzzle, a hidden drawer in the spine of the book opens to reveal the key. Here, the book itself serves as the puzzle, instead of being the staging ground for puzzles embedded into it as seen before.

Finale: Digital games and the paperverse

At least since the 2000 release of the first iteration in Nintendo's *Paper Mario* series, a growing number of games show a strong interest in the aesthetics of paper or cardboard as well as drawing and writing. Consider *Okami* (2006), *LittleBigPlanet* (2008), *Scribblenauts* (2009), *The Unfinished Swan* (2012), *Paper Dungeon* (2014), *Epistory: Typing Chronicles* (2016), *Bendy and the Ink Machine* (2017), *Book of Demons* (2018), and *Inscription* (2021), to name but a few which refer to the 'paperverse' in one way or another. Almost ironically, it took achieving a certain level of graphic fidelity for video games to turn back to their media predecessors. Had player characters, represented by 'sprites', i.e. two-dimensional pixel graphics, previously looked flat because technology necessitated it, making them intentionally look flat in spite of technological advances took a leap. At the same time, early 3D graphic engines supported a limited amount of simultaneously polygons visible on the screen, which promoted a boxy look that lends itself well to the aesthetics of paper craft with its stiff folds and simplified shapes.

But even before that, as briefly mentioned in the introduction to this essay, paper media were strongly linked to digital games. Print manuals, cardboard packaging, decoder wheels, maps and many other tangible paper or cardboard artefacts shipped with games "are proof of how much early gaming was imbued in the paper world it had been born into" (Conrad 2022, 316) and more generally of how "computer technology and gaming are rooted in paper culture" (Conrad 2022, 320). Therefore, digital gaming must be considered a hybrid experience from the get-go, melding material practices from the well-established paperverse and the fledgling video games.

Much like the Atari VCS 2600 being clad in faux-wood, when the 1988 Amiga game *Spell Book* showed lessons on a remediated book, this study in skeuomorphism served to present pupils with a familiar look. Similarly, Nintendo brought out its "Labo" kits of so-called Toy-Cons, cardboard sheets that need to be assembled by the players to make a fishing rod, motorcycle steering bar, piano keyboard, and so on, that integrate with Switch controllers to form a hybrid gaming experience.

Only as game developers became more aware of the status of games as a medium, did they actively reflect on games and other media within games. One such game is *What Remains of Edith Finch* by Giant Sparrow, an exploratory adventure published in 2014. The game lets players relive excerpts of the life stories

of several members of the fictional Finch family. Based on the premise that many if not all of the family members die prematurely and under bizarre circumstances, players explore the family's home on Orcas Island, San Juan County, Washington. Most Rooms in the mansion that has been extended by what seems to be architectural bricolage are dedicated to specific family members, asserting a correspondence between the lifeworld and psyche of the characters who previously inhabited them. Their abodes can initially only be looked at through peepholes in the doors, suggesting media such as peepshows and dioramas which are related to movable toy books as well as digital games. Through a series of secret connections, players successively explore the rooms and unearth the stories of their former owners.

The Finch family home is a house of books: even outside its library, it is filled to the brim with countless volumes⁹, including several by Jorge Luis Borges, whose contribution to literature Tobias Unterhuber (2017) read as fundamental to the history of digital games. Other volumes include such canonically self-referential texts as Marcel Proust's *In Search of Lost Time* and Ovid's *Metamorphoses* (Fig. 11). In addition, the story of Barbara's untimely demise is told in the form of EC-comics style horror comic book. And the story of Milton's disappearance is told in a flipbook that references Giant Sparrow's previous game *The Unfinished Swan*, a game which itself is staged as an illustrated book. Also, the game story is told in a book, as evident from the intro animation.

In the Finch's mansion players also encounter an interactive book. The mechanism that opens one of the secret passages hides inside a pop-up book. It lies in an alcove in a pink bathroom, is attributed to Sven and Edie Finch and aptly titled 'There is a Secret in the Bathroom'. The only double page inside the book shows Sven standing in the bathroom with his children, challenging them to uncover said secret, a challenge that also extends to the players. To find the secret in the bathroom, players must consecutively activate three pull-tabs that open flaps on the page. The last one reveals a twist lock that opens the secret passage (Fig. 12).



Fig. 11 || Screenshot from *Edith Finch 1*.



Fig. 12 || Screenshot from *Edith Finch 2*.

In several ways, this interactive book appears as a mise-en-abyme of the game. For one, the book shows the bathroom within the bathroom and sits in the exact spot where the secret passage that it speaks about is hidden. Secondly, like the digital game, the remediated book creates a representation of a (fictional) three-dimensional space by means of arranging two-dimensional elements: here (simulated) cardboard, there pixel graphics. Moreover, the gesture performed by the players to open the passage — pulling the

⁹ Some of these books are found in more than one place in the mansion. The reason for this lies in memory size and bus speeds limiting the size and number of textures that can feasibly be used in the game without its performance suffering too much. However, from a naïve player's perspective, one can also argue that the effect is such that the Finch Family home is stuffed with duplicates and triplicates of the same book for reasons unexplained but possibly inherent to the way the family deals with books.

tabs, twisting the lock —corresponds mechanically, functionally, and somatically to numerous other gestures that must be performed in the game as players progress through the mansion by interacting with its contents. One more, the pop-up book in this house of books is not the sole remediated medium. Players will find (and use) a photo camera, the aforementioned comic book, a diary, a View-Master-type stereoscope and so on.

Movable toy books have thus far been chiefly remediated in children's toy apps (which sometimes include puzzles) and in puzzle games, which includes action puzzle games like *It takes two* and more laid-back games like *What Remains of Edith Finch* or *Tengami*. It seems plausible that the type of mechanical interactions known from movable books are mostly suited to games that focus on solving problems by manipulating objects, i.e. by pulling on tabs, rotating discs, or dragging pages. In his now-classic *The Art of Game Design*, Jesse Schell (Schell 2020) points to the risk of trying to make a game work on any platform, a risk that the aforementioned *Tengami* faces through its ports from tablet computer to PC. Schell, who talks from the perspective of giving guidance to aspiring game designers, argues: "If the core interaction of your game is a unique type of play that takes advantage of what is unique to that physical interface, it can get enough attention to make giving up those other platforms more than worthwhile" (Schell 2020, 291). It appears from *Tengami's* reception that pop-up-book mechanics are especially suited to tablet-style touch-interaction. In any case, it becomes clear that the way players interact with the digital games and the remediated books within those games is key to understanding digital media as well as paper media.

Edith Finch's interest in itself as a medium as compared with other media, is nowhere as evident as in Lewis's story which is told as a game within the game. Lewis, standing at his station in a cannery, where his sole purpose is to chop off fish heads, successively transforms his dull work and life into a story about himself becoming the leader of a fantasy kingdom. Players relive Lewis's time at the cannery, ever picking up dead fish on one side of the screen and moving it to the other, where it is chopped up, all the while Lewis's imaginary space takes up more and more of the screen (Fig. 13). As players move both Lewis's dream avatar with one hand (e.g. using the keyboard) and the fish with the other (e.g. using the mouse), the player's attention is directed towards the sometimes menial, performative aspects of digital gaming: pushing keys



Fig. 13 || Screenshot from *Edith Finch* 3

and interface devices, performing the same gestures time and time again. It is here that lies the main similarity of movable toy books and digital games: in touching, pulling, turning of that make the toy seemingly — magically — come to life. And it is games like *What Remains of Edith Finch* as well as the aforementioned games like *It takes two* or *The Inheritance of Crimson Manor* that task us with thinking about this relationship.

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