

# Engineering stories? A narratological approach to children's book apps

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## Abstract

With the rise of smartphones and tablet pcs, children's book apps have emerged as a new type of children's media. While some of them are based on popular children's books such as Mo Willems' *Pigeon* books or Beatrix Potter's *Peter Rabbit*, others were specifically designed as apps. This paper focuses on examining book apps under the aspects of implied user strategies and narrative structure. Using a narratological framework that also takes into account the unique characteristics of the medium, a terminology for the analysis of book apps will be sketched out. Furthermore, an exemplary analysis of iOS book apps for pre- and grade school children comes to the conclusion that, far from offering the child users room for individual creativity, a large number of apps rather train their users in following prescribed paths of reading.

**Keywords:** *children's media; digital literature; narratology; story; plot; interactivity; multimodality; multimedia; e-book*

With rising sales numbers for smartphones and tablet pcs, apps are no longer technical innovation but rather a cultural phenomenon that touches upon potentially every aspect of daily life in Western culture. Not surprisingly, children's literature is also affected by this development.<sup>1</sup> Children's book apps have rapidly gained in popularity and figure among the most popular kinds of apps. The proliferation of children's book apps calls for a critical examination of these apps not as commercial products but as a newly emergent form of literature that can be assessed with the means of theory, whether from the perspective of game studies/ludology, media theory, or, as this paper does, literary theory. Therefore, a narratological analysis shall be used to determine how fictional book apps work as multimodal narratives comprised of verbal, visual, and sonic signs that have been programmed to behave in certain ways. Book apps are frequently advertised as offering the child user active participation in the creative process. The stories thus produced are touted as the result of both computational engineering and user interaction. Therefore, it shall be examined whether these apps actually do allow the child user to participate in the production of stories and if so, in which ways. Finally, a look at

narrative patterns will examine how book apps may convey and enforce ideological messages with the help of technical design.

## SCOPE AND THEORETICAL FRAMEWORK

This paper proposes a narratological approach to the analysis of children's book apps. A look at current research as well as discussions with other scholars in the field<sup>2</sup> make it very clear that the study of apps still lacks a coherent terminology. Therefore, my analysis seeks to demonstrate the viability of a narratological terminology for analyzing children's book apps as narrative texts with regard to narrative structure and implied user strategies. This analysis is based on research conducted on iOS book apps for pre- and grade school children that fall into the category of fiction. Excluded were purely educational apps and those advertised as games, even though some of the apps selected show marked similarities with games.

The field of children's book apps can be approached from different angles (Cf. Buckingham 2013, Frederico 2013, Turrión 2013, Schwebs 2013).<sup>3</sup> It is possible to analyze apps as a part of

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digital literature or as examples of the cybertext or ergodic literature as defined by Aarseth. Digital literature may be defined as literature “that requires the digital computation” of computers (Wardrip-Fruin 2010, 29) and apps clearly fall under this definition. For Aarseth, cybertexts are part of “ergodic literature,” that is, literature in which “nontrivial effort is required to allow the reader to traverse the text” (Aarseth 1997, 1). The cybertext is, literally, “a machine for the production of variety of expression” (Aarseth 1997, 3). That means it requires the reader’s effort to become an artistic product/text. The keyword in defining a text as ergodic is, of course, “nontrivial” which is vague enough. While swiping and tapping to navigate from one screen to another can clearly be defined as “trivial” (much like turning a page), gestures like tapping on a hotspot to trigger an animation should be regarded as alterations of the text, namely the *story*, and can thus not be qualified as trivial.

Furthermore, Aarseth’s textonomy of the cybertext can only partially be applied to book apps. For example, the aspect of “transiency” (meaning that in a transient text “the mere passing of the user’s time causes scriptons to appear” (Aarseth 1997, 63)) is not very helpful since virtually all book apps for children are intransient text. If a book app is played in the “read-to-me” mode (the closest thing to a transient text I have encountered in a children’s book app), the reading can usually be stopped and modes switched. Transient texts present a particular challenge to the reader who is unable to control the pace in which the scriptons appear and disappear and can only hope to keep up with the programmed speed. Book apps for pre- and grade school children are usually designed to encourage beginning readers and a transient text would be clearly detrimental to this purpose. Consequently, for the age group selected, transiency in a book app must be regarded as a serious drawback.<sup>4</sup>

Approaches like those by Aarseth or Wardrip-Fruin are useful in determining which works belong to the categories of cybertext, hypertext, and digital literature. However, the focus of this paper is on a specific type of media that encompasses a variety of genres and modes. The concept of cybertext is neither limited to nor does it include all kinds of literary texts published in the digital medium. Hypertexts, on the other hand, are a specific type of fiction within this medium that is distinguished by certain technical characteristics, that is, “a text that [...] will ‘branch or perform on request’ (by links or other means)”

(Wardrip-Fruin 2010, 40). Even a cursory glance at children’s book apps reveals that only a limited number of them fall into either category. Therefore, a different framework must be used to assess this kind of media.

The analysis of book apps calls for a broad use of the term “text.” The text of an app as I understand it comprises its totality of verbal, visual, sonic, and interactive elements, or the “surface” of the app as distinguished from the underlying structure of the source code.<sup>5</sup> Furthermore, to emphasize the multimodal experience of accessing a book app, I will refer to the recipients of book apps as “users” rather than “readers.”

In applying a narratological framework, I will draw on the terminology applied by Bal in *Narratology*. Central to my analysis will be the concept of *fabula* versus *story*. While a *fabula* is defined as “a series of logically and chronologically related events that are caused or experienced by actors”—thus answering the question “what happens?”—the term *story* indicates “a fabula that is presented in a certain manner” (answering the question “how is it told?”) (Bal 1985, 5). In a similar application of the Gennettian distinction between story and discourse for the analysis of hypertexts Liestøl distinguishes between the “discourse as discoursed” (i.e. as displayed on the surface = UI) and the “discourse as stored” as well as between “story as discoursed” and “story as stored” (Liestøl 1994, 96/97). My analysis, however, will be user- and thus surface-oriented and shall therefore exclude the aspect of stored data.

For the description of user behavior and implied user strategies I will, however, use Genette’s categories of *speed*, *order*, and *frequency*<sup>6</sup> which can be especially helpful when applied to hypertextual structures<sup>7</sup> and further distinguish between *empirical* and *computed* behavior or strategies. For example, the computed minimum or maximum speed for progressing from one page to the other might substantially differ from the empirical speed of a specific user at one specific running of the app.

## APPS: TECHNICAL ASPECTS AND DEFINITION

In the domain of digital devices, apps (short for application software) can be defined as software designed to accomplish specific user tasks (in contrast to system software). For this reason, it is possible to differentiate technically between book apps and e-books, even though the two terms are

often used interchangeably. While e-books are single files that require specific software (e-reader software), apps (being software) run by themselves. Therefore, technical limitations for book apps do not depend on their medial form but rather on the devices they run on. To start with, iOS apps are designed to be displayed on devices with notably smaller screens than the average pc or smartphone. Given the fact that apps are a visual medium and many book apps for children are adaptations of print books, screen size can become problematic when illustrations that were developed for the average print format are scaled down to fit on an iPhone screen.

Furthermore, smartphones and tablets are notable for their drastically reduced physical operation instruments. Most user interaction with the device can be conducted with the help of the multi-touch screen and the home button, an aspect which leads to the “transformational” effect of apps: “as soon as you run an app on an iOS device, the entire device seems to transform because of its multi touch, screen-dominated design” (Layon 2011, 9). This also applies to book apps that seem to transform the device into a book by emulating many of its physical features such as paper structure and pages to be “turned.”

### CHILDREN’S BOOK APPS

When analyzing children’s book apps, it is useful to distinguish between apps that are *adaptations* of existing paper books and those that were designed from the ground up as apps and which I will refer to as *native e-lit*.<sup>8</sup> Even though these two types of apps can be expected to differ drastically in their intentions, both of them generally strive for two aims: First of all, the majority of book apps seek to recreate the analogue reading experience by simulating the look of a paper book. Secondly, these apps try to enhance the reading/user experience through technical additions. These technical additions usually come in the form of audio and video embedding and interactive elements such as tap-triggered animations and sounds.

The use of sound is something truly unique to both book apps and e-books. Audio elements add a new layer of meaning to the text. The function of these elements can be to intensify the emotional impact of a scene, to provide a fitting background atmosphere, or to create or increase suspense.

For example, the reading of the verbal text of *The Original Peter Rabbit* app is accompanied by sound bits from nature and music. When the

verbal narration reaches the point where Peter encounters Mr. McGregor, the music accompanying the scene rises to a dramatic pitch. In another scene, when Peter cries, sad music is played softly, then fades away to the sound of a child sobbing.

### THE FUNCTIONS OF INTERACTIVE ELEMENTS

Interactivity has become a staple of children’s apps and its functions are numerous and wide-ranging. The following is a partial list of the key functions that interactive elements perform within children’s book apps.

Interactive elements can

- create tension between (verbal) text and image, text and sound, image and sound
- propel the story forward
- add humor
- provide extra information
- suggest user activities within the app or in the real world
- offer the opportunity to record one’s own voice, reading the story or creating a new one
- allow the user to interact with others through social network integration
- offer the possibility to choose between different narrative elements (protagonists, points of view, alternative storylines)

Thus, interactive elements effectively enable the user to become co-author, co-illustrator or co-narrator.<sup>9</sup> Interactive engagement on a creative level is, indeed, what most apps promise but seldom offer in a meaningful way. Many of these features can be used in a way that is, at best, distracting and may even be detrimental to the child user’s reading experience. Hotspots and additional games can easily disrupt the flow of a narrative and distract users. Interactive elements should match children’s shorter attention span so they will not exhaust rather than excite user attention. In addition, many apps have in-app purchases and/or links to online shops, thus stimulating a kind of fast consumerism that parents may want to avoid.

### CHILDREN’S BOOK APPS: TYPES AND NARRATIVE OPTIONS

By the technical means of mark-up, cross references, and linking, apps can easily challenge the notion of linear narrative by providing a variety of reading options. Using Bal’s terminology, the

distinction between the narrative elements of fabula and story makes it possible to distinguish two types of apps that offer a variety of user options and for which I propose the terms “multiple fabula app” and “alternative story<sup>10</sup> app.” This taxonomy is deduced from the main structuring principle underlying the making of the narrative in the act of running the app. There are obviously other ways of classification that might lead to different typologies.

### MULTIPLE FABULA APPS

Multiple fabula apps follow the concepts of “creating your own story” or “choosing your own adventure.” The “choose your own adventure” concept that originated as an analogue literary phenomenon is closely connected to the principles of hypertext. Subsequently, the concept has given rise to a whole genre in literature and gaming. This type of app is most strongly affiliated with gaming and role-playing, sometimes to the extent that border lines become blurred. Narratologically speaking, these apps provide the user with interactive choices on the level fabula: users can determine (to a certain extent) *what happens* in the narration.

Consequently, multiple fabula apps are often combinatory literature that allows “a relatively small number of initial materials to be arranged, following certain rules, into a vast number of possible configurations” (Wardrip-Fruin 2010, 33).

In *The Land of Me: Story Time* the user can choose between three protagonists, three topics, and three endings, allowing for 27 possible fabulae. While the concept of building a story out of a limited number of elements may seem to encourage users to follow a limited number of plotlines, thus “rehearsing” the plots rather than inventing new ones, the app actually goes beyond that (Figure 1).

The illustrations looking like chalk drawings on a wall call to attention the fictionality of the narratives. They also emphasize the process of storytelling as one of telling and re-telling. By evoking the image of the blackboard, storytelling appears as a creative process of constant revision (wiping off, drawing anew) rather than the rehearsing of one finished script. Furthermore, pop-up comments encourage users to move beyond the prescribed fabulae and create their own stories.

Mo Willems’ *Don’t let the pigeon run this app!* places an even stronger emphasis on creative



Figure 1. Chalk drawing illustration in *The Land of Me: Story Time* app.

The box at the bottom center of the interface indicates the narrative options (protagonist, topic, ending) selected. Narrative options can be changed at any time before or during the running of the narration. © Made in Me

user participation. In the app’s “chick” and “big pigeon” modes, users find a blank space text that allows them to fill in selectable narrative options or their own pre-recorded voice. Users will quickly recognize the narrative pattern (the pigeon wants to do something he is not supposed to do) and will then be able to play with it. In contrast to forking narratives or multiple choice texts, this simple technical device allows users to create a new text with the potential to subvert the original fabula. This is one of the rare cases where an app actively encourages the co-creation of a new text. The app’s recording function and the possibility to save several fabulae in the “my stories” section allows for the creation of an unlimited and the saving of a limited number of texts.

Not all apps succeed in creating multiple fabulae that are both believable and satisfying. One app may stand here for a fairly large number of apps that follow the same pattern. In the *Magic Story Factory* app, narratives consist of six narrative units (protagonist, setting, events, denouement) that can be used interchangeably. However, the resulting narratives frequently lack narrative coherence and fail to meet the criteria experienced readers have learned to identify as “satisfying” or “good.”<sup>11</sup>

This raises the question of quality. To evaluate multiple fabula apps, it is useful to consider the actual *purpose* of this narrative device. Is it to create a random text out of random fragments or is it to encourage users to explore narrative modes (like funny, scary, sad in *The Land of Me*)? Does it give the user the opportunity to alter the fabula to produce aesthetically satisfying narratives that

have been noticeably affected by the user in a purposeful way? Is randomness the result of the app's mechanization or an aesthetic failure?

*Flip Flap Farm* creates random poems out of text fragments that are designed to create either a traditional poem about one specific animal or a nonsensical poem about a hybrid animal. This app functions very much like Raymond Queneau's *Cent mille milliards de poèmes* and its purpose is clearly to amuse the user.<sup>12</sup> In contrast, *Magic Story Factory* aims at producing amusing and comprehensive fabulae but the generated narratives are dissatisfying due to poor writing and programming.

### ALTERNATIVE STORY APPS

In contrast to multiple fabula apps, alternative story apps offer interactive options on the level of the *story* (how the fabula is told) but not necessarily on the level of the *fabula*.<sup>13</sup> Basically, all apps that offer some kind of tap-triggered dialogue, sound or animation fall into this category.

A grade school app that relies on tap-triggered dialogue and animation to alter and enhance the story is *Animal Snapp Farm*. Here, some of the tap-triggered dialogue simply repeats the information from the rhymed verbal narration. This happens when in the "Lucky Lamb" narrative the text reads "I didn't know I'd come so far. I wish I could hear mummy's baa" and tapping Lucky triggers utterances like "I wish I knew the way home," and "I want my mummy." In some instances, however, tapping may lead to a subtle change in the outcome of the narration. During the conclusion of "Lucky Lamb" the spoken verbal narration emphasizes the happy ending of Lucky's runaway adventure. While the narration reads: "Her mummy answered, 'Here I am! You're quite safe now, my Lucky Lamb,'" repeated tapping can trigger an animation in which Lucky exclaims "I won't run away again." Obviously, this line does not fundamentally alter the fabula of the text but, in stressing the aspect of a lesson learned by the protagonist, it adds a pedagogical message to its *story*.

### REQUIRED USER PARTICIPATION AND NARRATIVE STRUCTURE

While most interactive elements are optional, some apps require users to interact at specific points and this interaction may influence the narrative pattern. It is important to distinguish

between apps that require users to make narrative choices before running the app and those that demand user participation during the running, and thus, the course of the narration. The latter creates the (often misleading) impression of being directly involved in the "making" of the story.

An example of an app creating the illusion of creative interaction is *The Gift: an interactive story book*. This is a native e-lit app that works through user participation only. That means the fabula only unfolds when the user taps various elements in precisely the order and mode intended. To ensure adherence to the predetermined using strategy the app offers a "hint button" that on tapping reveals all the hotspots the user has to tap.

For example, one scene requires the user to tap all eight characters on the screen by which the scene changes to a different background where the user has to tap a tree. This causes snowflakes to fall, the last six ones being interactive elements. Tapping these produces six new interactive elements (gift packages) that, on being tapped in turn, reveal the letters D-R-E-A-M-S. As this summary suggests, this process is not only lengthy and repetitive but also far from creative or demanding.

Apps like *The Gift* allow strict control over the pacing of the narration, since the rhythm of tapping and tap-triggered animation is largely predetermined. The computing that determines the minimum amount of time the user faces an animation or has to wait for more hotspots to appear determines the narrative rhythm (and hence, the empirical speed) that, here, may be slowed down but not speeded up by the user.

Not every app that relies on user participation must be repetitive and schematic, however. *Lil' Red*, a retelling of Little Red Riding-Hood, is a non-verbal animation app. Technically, interaction other than page-turning is not required to proceed. For the user, however, it is essential for gathering basic elements of the fabula. Key elements of the fabula are tap-triggered animations that will only be displayed on user interaction with the surface. It is always possible to continue with the narration, thus creating narrative ellipses. Here, these are not particularly challenging since most users can be expected to be familiar with the fabula and thus be able to fill in the blanks. The possibility to go forward and backward, touching or skipping hotspots that trigger animation is due to a computation that allows users to handle the narratives' frequency and speed fairly freely, even though the narrative

order cannot be changed. The differences between empirical user behaviors (or between empirical speed and frequency) at each running of the app can produce radically different stories while the fairy tale's fabula remains unaltered.

Even the well-known dialogue between Lil' Red and the wolf posing as the grandmother must be accessed through user interaction. Each part of the dialogue is only shown when the user taps Lil' Red or the wolf respectively (Figures 2 and 3).

The fact that by tapping (and most likely being aware of the narrative consequences) the user is finally urged to "make the wolf swallow Lil' Red" points to a complicit relationship between user/reader and developer/narrator. More explicitly than in the act of reading, author and user become "partners in crime" in making the gruesome events of Lil' Red's temporal demise happen. This shows how apps let their users participate in enacting narrative patterns, not only receiving but actively taking part in shaping them.

### NARRATIVE PATTERNS

Book apps tend to play with the issue of (non-)linear narrative, as the sheer quantity of multiple fabula apps shows. Thus, it may come as a surprise that the majority of pre- and grade school book apps urges users to follow tightly scripted patterns rather than use them innovatively.

This tendency can be enforced by the omission of a page index that would allow users to navigate through the story at will or even skip parts of it. Many apps for children do not have this feature and thus force users to follow precisely the pre-set path of the narration. Considering this and other



Figure 2. Screenshots from the *Lil' Red* app. In order to trigger the animated dialogue between the wolf and Lil' Red, the user has to tap the protagonists. © Brian Main



Figure 3. Screenshot from the *Lil' Red* app. Here, tapping the wolf triggers the animation of him swallowing Lil' Red.

technical possibilities to determine user behavior (like the narrative pacing set by the app's computing), it is fair to conclude that an app developer can exert more power over user behavior than the average book author over reader habits.<sup>14</sup>

My argument is that one of the key functions of book apps is the teaching of narrative patterns through user participation and repetition. An app like *Lil' Red* encourages users to participate in making the story happen by triggering animations by tapping. User participation is rewarded with animated scenes while certain key points of the fabula and their narrative order remain unchanged. Going forward and backward, triggering animations or skipping them, the user thus becomes familiar with the basic pattern of the fabula. Navigation thus resembles a rehearsal of a narrative pattern. Clearly, further investigation in the field of user response is highly desirable and should yield interesting results for both literary and pedagogical studies.

It should be noted that narrative patterns are far from being neutral. The multilingual book app *Your Adventure* may demonstrate the ideological implications of narrative patterns. *Your Adventure* is an alternative story app that follows a well-known narrative pattern: an adventurous knight sets out on a dangerous quest to win the heart of a beautiful princess. Gender roles in this pattern comply with traditional ideas of masculinity (brave, adventurous, outgoing) and femininity (passivity, beauty, reduction to the function of a prize to be won) (Figure 4).

The app offers different narrative paths, that is, the sequence of events can be altered but not the nature of the events required to completing the quest.<sup>15</sup> Identifying this seemingly "interactive" app as an alternative story app makes it clear that

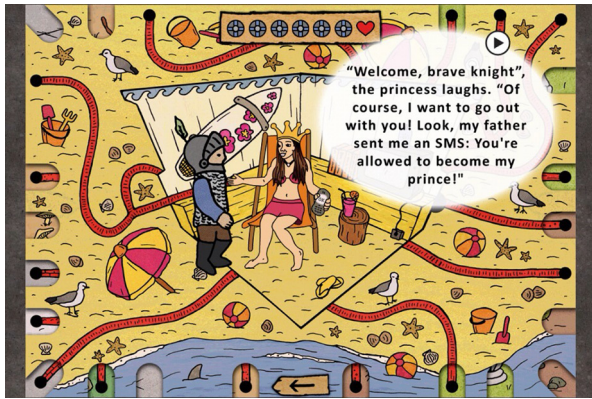


Figure 4. Traditional gender roles meet modern technology in *Your Adventure*.

The protagonist goes on a quest to win a beautiful princess as a reward. The multi-colored paths on the interface indicate different narrative paths for the user to choose. © RumdeeDum (ImproVive)  
All images used with permission.

the publisher's promise of "a wholly new experience every time" (<http://www.rumdeedum.com/releases/your-adventure/>) is far from true. Instead the user has to follow a clearly defined pattern set through conditional links: the protagonist cannot visit the princess before having obtained the king's permission (!) which is only granted on retrieving his treasure that the dragon has stolen who, in turn, can only be tricked with the help of an invisibility potion and so forth. This makes it clear that under the layer of different possible stories (distinguished by the order in which you visit the different nodes or "places") there is an underlying, prefixed causality chain/pattern that users must adhere to if they want to achieve the pre-set goal. By creating the illusion of being in charge of what happens and heavily stressing user identification with the protagonist, the app urges users to accept the narrative patterns with its ideological implications. Therefore, the impression of experiencing "your own adventure" is misleading. The only adventure to be experienced is the one preset fabula that will inevitably follow the traditionally gendered pattern as outlined above.

## CONCLUSION

The analysis of iOS book apps for grade school children has shown that the technical potential of the medium is seldom realized in favor of a pedagogy of narration. These apps tend to teach adherence to narrative patterns rather than deviation. Thus, through narrative using strategies, the hierarchy between author and user is frequently not challenged but rather re-affirmed.

Technically, apps have the potential to create a user experience that is fundamentally different from reading a book in print. The techniques that set them apart are links, audio and video elements, and interactive elements. Decidedly less common, even though technically viable, are the user-device response techniques known from gaming. Here, a whole range of applicable techniques seems bound to play a role in the future of book apps. Such features as character editing<sup>16</sup> and various forms of multi-user experience seem especially promising. The latter could be fruitfully applied to concepts of multiple fabula or alternative story apps to create alternative texts in interaction with other users. Being bound by the prerequisites of creating a coherent narrative by the means of largely predetermined visual and sonic signs, book apps cannot offer the same narrative freedom of choice as role-play gaming where the user directs an avatar more or less freely through a virtual world. The greatest interactive/creative freedom that simultaneously offers the possibility of telling a coherent fabula is probably the introduction of blanks, either literally in the interface as free space where the user can fill in words, drawings, or photos of their own choice or by using the possibilities of the device that allows users to make videos, take photos, or record their own words all of which can then be integrated into the app as forming part of the narrative.

As this brief analysis has demonstrated, the application of a narratological framework allows for the development of a taxonomy of different types of book apps. On a structural level, differences and similarities can be identified using the narrative categories of story and fabula. As the examination of narrative structures with regard to gender constructions has shown, a narratological approach can also be used for context-oriented analyses. The emergent field of children's book apps calls for a theoretical approach that considers both the literary and the technical aspect of this kind of media. Furthermore, book apps for children deserve an examination that takes into account their status as hybrid texts combining verbal, visual and sonic elements and being situated on the threshold between game and narrative.<sup>17</sup> In this context, a narratologically based framework may serve as the basis for a deeper understanding of these texts as *narratives* that form a new part of the ever-expanding field of children's literature, one that is likely to play an increasingly dominant part in the lives of children.

## BIOGRAPHY

Hadassah Stichnothe studied Comparative and American Literature at Johannes Gutenberg University Mainz. At present, she is a PhD student at Eberhard Karls University Tübingen. Her doctoral thesis deals with novels of initiation in English and German children's literature. In addition to that, she also has worked as a freelance writer for a German IT startup.

## Notes

1. According to Horne, children's book apps "have proven to be the most popular book-apps in the Apple App Store especially in Europe" (Horne 2012, 17).
2. This refers to the 9th Annual Child and the Book Conference where an earlier version of this paper was presented. Despite different theoretical and thematic approaches, the papers presented by Ross Buckingham, Aline Frederico, Ture Schwebs, and Celia Turrión all agree on the point that there is a decisive lack in terminology that needs to be addressed.
3. Buckingham uses an ecocritical approach, Frederico analyzes the construction of meaning in fairy tale enhanced e-books, and Turrión applies postmodern theories to the analysis of multimedia book apps.
4. For a useful example of an evaluative framework from a literary point of view cf. Bird (2011). An online resource for parents, educators and developers is <http://momswithapps.com>. Another resource directed at parents, librarians and teachers is the online presence of the *Children's Technology Review* (formerly *Children's Software Review*) <http://childrenstech.com/> which offers reviews of children's apps.
5. "The surface of a work of digital literature is what the audience experiences: the output of the processes operating on the data, in the context of the physical hardware and setting, through which any audience interaction takes place" (Wardrip-Fruin 2010, 48).
6. For a more detailed analysis of digital discourse time cf. Eskelinen and Koskimaa (2001). However, the terminology being based on the concept of hypertext, not all categories are applicable for book apps.
7. "Interactivity in hypermedia allows the user to choose the speed, quantity, and quality of information. By jumping from one node to another, the user creates summary and ellipsis. In hypertext and hypermedia, browsing parallels summary and ellipsis, for choosing not to follow a link creates ellipsis, by means of which the articulated discourse is made "shorter" than other possible durations of the potential text" (Liestøl 1994, 94). Though I find the equation of browsing with summary problematic, I follow Liestøl's notion of ellipsis.
8. I have chosen not to use the term "digital literature", even though apps can be included into this category. In its narrow sense of "digitally born" literary artifacts" (Simanowski 2010, 15), it would exclude all adaptations.
9. A number of studies indicate that the use of e-books and book apps may be beneficial to young children's emergent literacy (Cf. Segal-Drori and Korat 2013, Morgan 2013). Segal-Drori et al. contend "that use of new computer programs, such as e-books, together with supportive and suitable adult mediation, can promote young children's emergent reading and their achievements in the written language" (Segal-Drori and Korat 2013, 67).
10. "Story" is used here in a strictly narratological sense following Bal's definition of "a fabula that is presented in a certain manner" (Bal 1985, 5). For the concept of a narrative unit like the whole of a book app I will use the term "narrative" or "narration" respectively.
11. For example, one user-generated sequence of scriptons (s) reads: "On the coldest part of the earth in the middle of ice and snow was an igloo" (s1), "An energetic young boy named Henry spent his days playing there" (s2), "He often liked to escape into the forest, playing under the shade of the tall trees" (s3). This sequence shows a logical discrepancy between the setting indicated in s1 (ice and snow) and the one indicated in s3 (the forest) thus violating the rule that in a coherent narrative, the properties of a setting should not be changed arbitrarily.
12. The publisher has also released a print version of the app. For a short demo see here: <http://youtu.be/6D1aVQpHJH0>.
13. Admittedly, one might argue that any change to a text will automatically result in a change of fabula, since the manner of telling determines to some extent its content. This, however, would render any differentiation between story and fabula meaningless. Therefore I will disregard this aspect as impractical.
14. Cf. also Aarseth who points out that "A hypertext path with only (unidirectional) link between text chunks is much more authoritarian and limiting than (say) a detective novel, in which the reader is free to read the ending at any time" (Aarseth 1997, 47).
15. Based on Ryan's typology of textual architectures, the story of *Your Adventure* can be seen as a maze with one fixed end point (Cf. Ryan 2006, 104–106). The user can navigate through different settings or sites and fulfill a variety of tasks. In this respect, the app resembles a game while the interface carefully recreates the look of a paper book, thus confirming the hybrid nature of the book app genre.
16. I thank Georg Konwiser (Brandeis University) for this suggestion as well as for valuable technical advice on app development.
17. While the focus of this paper has been the narrative aspect of these apps, it should be noted that for example the terminology that Nikolajeva/Scott use for the description of picturebooks might be usefully expanded to describe the specific interplay between verbal, visual, and sonic elements of book apps (Cf. Nikolajeva/Scott 2006).



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- Lil' Red*. Concept by Bart Bloemen & Brian Main, tech: Tom Skidmore, audio: Lukas Hasitschka, grafix: Brian Main [www.lilredapp.com](http://www.lilredapp.com) Version: 1.03 © Brian Main.
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