

Sharing personalised stories on iPads: a close look at one parent–child interaction

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Abstract

Little is known about how specific iPad applications affect parent–child story-sharing interactions. This study utilises a case-study approach to provide an insight into the patterns of interaction, which emerge when a mother and her 33-month-old daughter share a self-created, audio-visual ‘iPad story’. Multimodal analysis allowed us to gain insights into the complex interaction patterns orchestrated in this new, personalised story-sharing medium. We found that the app-mediated story-sharing context produced a harmonious and smooth interaction, achieving a coherence that is typical of ‘happy’ oral stories. We suggest that the observed interaction resembles that of experiencing a piece of art, and we highlight the need for a holistic approach to understanding the implications for research and practice of children’s interactions during multimedia story sharing.

Key words: narrative, reading, Early Years, digital literacy/ies, multimodality, new literacies

Introduction

The increasing ubiquity of mobile and tablet devices in the lives of young children growing up in affluent societies leads to many opportunities to access and produce stories, which transmit meanings in new ways. Since their emergence in the early 21st century, touch-screen devices such as iPads have made inroads into the everyday experiences of many of us, including very young children. iPads and other similar tablets are different from previous technologies in that they integrate portability and ease of manipulation of separate digital tools into one, multifunctional and aesthetically pleasing device (cf. Sheehy et al., 2005). Currently, iPads contain a range of ‘older’ technologies, including audio-recorder, picture-camera, drawing pad and an on-screen keyboard, which are useful tools for self-creation and self-publication of multimodal-personalised stories. In addition, their size approximates that of a child’s book, making them suitable for ‘intimate’ one-to-one story sharing (for example when a parent and child share a story together with the child sitting on the parent’s lap).

Tablet software programmes (the so-called apps), which are concerned with stories and narratives,

are particularly popular among young children (Hutchison et al., 2012). Such applications offer various new, customisable ways of sharing personalised stories between parents and children. Yet, there is little research regarding the affordances they provide, and the influence of these on the patterns of parent–child interaction and the activity of shared story reading. Given the novelty of the medium, studies evidencing the nature and significance of use of these new tools are only beginning to emerge. So far, most work on children’s use of iPads has been based on group observations from preschool settings (e.g. Hutchison et al., 2012), or case studies of children with limited language skills (e.g. Jowett et al., 2012). Very few studies, if any, have focused on children’s engagement with iPad stories in situations in which children are most likely to encounter them, namely, in their homes.

This investigation builds on our ongoing research, which documents and analyses young children’s use of story-creating tablet applications. We are interested in how these new tools mediate, reflect and supplement young children’s everyday experiences, especially interactions occurring at home, between children and their parents. In this article, we discuss the interaction between a parent and her daughter as they shared a multimodal and multimedia personalised story, created and shared with an iPad application called *Our Story*. Before presenting our methodological framework, we explain what we mean by a multimedia, multimodal-personalised story and describe the specific features of the *Our Story* app.

Personalised multimedia and multimodal stories

Our focus in this paper concerns the potential that touch-screen digital technologies offer for the sharing of personalised multimodal stories produced in multiple media. We refer to stories that are individualised and created for a specific child as ‘personalised’, particularly those that are created by adults (parents or teachers) for children. Stories can build on families’ and especially children’s ‘funds of knowledge’ (Gonzalez et al., 2005), i.e. the skills and knowledge which are constituted through specific activities and events occurring at home or other personal places.

Unlike most stories found in commercially produced books, highly personalised stories are customised for a particular child, intrinsically relevant to the child's socio-cultural experience and aligned with the child's personal experiences. In addition to having a very specific sense of audience, personalised stories typically capture the personal interests, preferences and values of the story authors and thus are, by their nature, unique or authentic, and very specific to one particular child and parent (or other adult or older child). In this respect, personalised stories differ profoundly from fictive stories or myths, although they may contain elements and references to other folk or popular stories. We can find personalised stories in self-made books, and many literacy interventions encourage the creation of self-made paper-based books created by parents for their children (e.g. Pakulski and Kaderavek, 2004), or co-authored with the children (Bernhard et al., 2008). In terms of their format, personalised stories can be created with any book-making resources available (paper, scissors and cardboard) and also electronic media (e.g. the book-making software RealeWriter, see <http://www.realewriter.com/>). The distribution of social and material resources, which allow personal stories to be expressed via new technologies, is privileged in certain contexts more than in others. In addition, the ways in which some technologies support user-generated content – and specific degrees of personalisation – varies from one technology to another. iPads offer the possibility for creating and sharing personalised stories in a multimedia device that offers the use of audio recordings, photographs, film and writing, and the subsequent production and sharing of multimodal stories using sound, images and typed text. The publication and preparation of such personalised multimodal stories are delegated to specific iPad applications, one of which is the *Our Story* app.

The Our Story app

Our Story is a tablet-compatible and iPad-compatible app, which we co-developed with our colleagues at the Open University in England. The app was purposefully designed for the creation and sharing of personalised stories with young children. *Our Story* has a child-friendly user interface, with big buttons and iconic rather than text-supported navigation (see Figure 1). The app brings together features available within iPads (or tablets) for creating stories and allows the users to easily incorporate their own text, images and/or sounds into one storyboard. As such, the app is open-ended and facilitates the use and convergence of a written, image-based or audio-recorded commentary (thanks to the iPad's inbuilt microphone and camera) in story creation and story sharing. In addition, it benefits from the tablet's portability and inbuilt wireless transmission capability in that it allows for story writing and story sharing in the moment or across time and space boundaries. Personalising (or customising) a story is easy, as the user can simply add or delete images, text and audio sounds at any moment.

The "*Our Story* stories" are thus not traditional or electronic books, diaries or photo albums. Rather, they could be perceived as a new platform, which capitalises on the affordances of book media for capturing past and present experiences and authentic story-making practices. Consequently, an important question is the way the affordances of *Our Story* stories shape parents and children's interaction during this form of story sharing.

Influences on parent–child interaction during narrative construction and sharing have been studied primarily in relation to differences in story formats and story

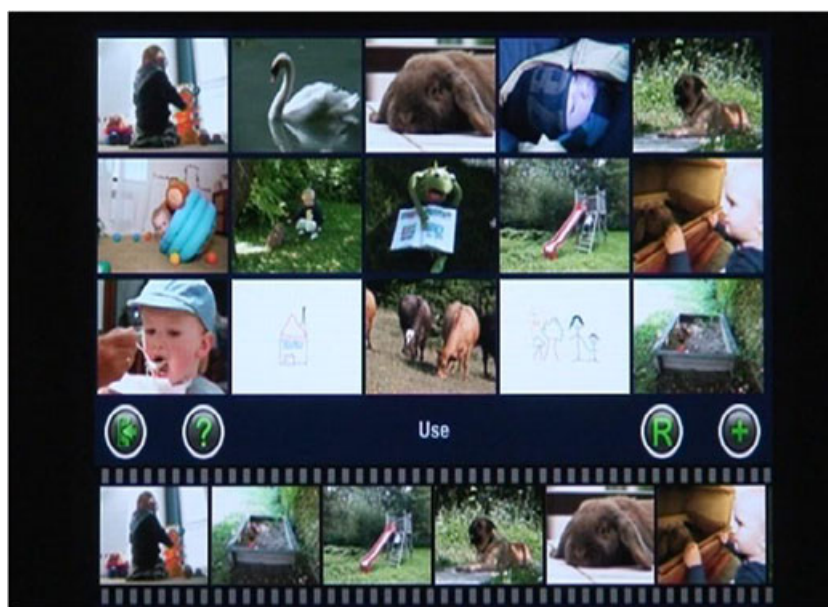


Figure 1: The user interface of the *Our Story* app (first generation). The screenshot shows the gallery of individual pictures on the top of the screen. These can be dragged and positioned in a filmstrip (bottom of the screen), which can then be displayed full screen with sound and text, in a similar manner to a picture book

types. Comparisons have been made between parent-child interaction when they share a paper-based or electronic book (Kim and Anderson, 2008), or when they share books of different genres, for example, informational versus narrative texts (Anderson et al., 2009). With commercially produced books, systematic and objective comparisons are possible, as the books are consistent (or can be matched) in terms of their defining features such as the number and kind of pictures they contain, overall story length and complexity or the emotional side of the story plot. However, with personalised books, it would be impractical if not impossible to undertake such comparisons given the unique effort, investment and creativity, which goes in each self-made book. In the present research, our aim was to understand these influences through careful observation of one naturally occurring interaction. Previous findings suggest that when parents and children share their own as opposed to commercially produced books, they show greater pleasure and signs of enjoyment during the story sharing (Janes and Kermani, 2001). In addition, Kucirkova et al. (2012) found that parents and children reading books with personalised as opposed to non-personalised features displayed more signs of engagement (e.g. the number of smiles or verbal activity) during the story sharing (Kucirkova et al., 2012).

With the possibility for representing one's own past experiences in a visually appealing, portable and compact digital format, "*Our Story* stories" could be expected to give rise to different interaction patterns than those accompanying paper-based personalised stories. With the new affordances of digital media, the app creates situations, which blend written, spoken and visual narratives in the moment of reading an original story. For example, with the *Our Story* app, parents and children can easily add, edit or remove text and pictures during the actual activity of story sharing. This means that their stories can become more fluid and responsive to the instant moment of the parent-child story sharing. The iPad camera and audio-recorder make the visual and audio material immediately accessible and amendable, which may have consequences for the there-and-then as well as anticipated future interactions. For instance, a played sound of the narrator's voice recorded in the past can be replayed in the present and extended by including a comment by the child, or it can be deleted and left blank to be completed in the future. Alternatively, a pre-recorded spoken sound can be changed to a song or a soundtrack of the user's choice, as the user can access his or her favourite tune impromptu, using the online access option inbuilt in the iPad. Similarly, a picture in the story can be changed to a different picture, taken and inserted almost instantaneously in the moment of story reading, using an inbuilt camera or any web-based picture depository. The same responsiveness applies to the written text accompanying each story: with keyboards instantly

accessible through the app, making both the reading and writing experience responsive to the 'in the moment' story sharing. As such, a story created (written and narrated) at an earlier time can be altered at the moment of sharing – and this transformation can occur in three different modalities (written, audio and visual).

Given the novelty of these affordances for story sharing, it is difficult to predict what their influence on parent-child interaction patterns might be. We were interested in a detailed examination of naturally occurring interaction patterns as parents and children share a self-made audio-visual portable story. In the following section, we detail our methodological orientation and analytical approach.

Methodological approach

We adopted a multimodal interactional analysis approach, which is suited to the analysis of stories conveyed through a combination of modalities (Norris, 2004). Multimodal analysis makes a distinction between embodied (gesture, gaze and language) and disembodied (e.g. a book, iPad and picture) resources used for meaning-making (see Flewitt, 2012). These resources can be viewed to include modes associated with face-to-face communication, such as speech and gesture and also modes mediated by new technologies such as moving images or sound and writing on the screen (Kress, 2010; Jewitt et al., 2009). In this study, we considered parent and child interaction (both verbal and nonverbal) and also the communicative modes of the object they interacted with, focusing on the iPad's sounds and images. This approach builds on traditional narrative research, which tends to focus on the verbal, on the interplay between verbal and visual elements in children's picture books (Yamada-Rice, 2010) or on the functional and compositional elements of children's narratives (Peterson et al., 1999). Our study also contributes to understandings of how story sharing is mediated in triadic parent-child-story sharing patterns (Fletcher and Reese, 2005).

We used a case-study approach because the nature of our study was context-bound and particular to the specific personalised parent-child narrative. Our choice of a case-study approach was also made with the goal of emphasising the exploratory nature of our analysis. Our conceptual and methodological insights led us to the following research questions:

- What are the important features of multimodal parent-child interaction patterns when they share a personalised iPad story?
- To what extent could these patterns be attributed to the *Our Story* affordances for personalised multimodal stories?

The case-study participants

In this study, the focus is on one mother (Andrea) and her 33-month-old daughter, Jenny, who was the only child in the family. The family lived in a small village in the east of England, with good access to educational institutions and community support. We worked with this particular family at various stages of our research, and the mother had taken part in a previous research project undertaken by the first author of this study. English was the native language of both mother and the child. Pseudonyms have been used to protect participants' anonymity.

Study procedure

The current analysis draws on one episode from a series of case studies undertaken over the course of 2 years as part of our research into personalised stories created and shared by parents with their children. We use this excerpt to illustrate the particularities of interaction patterns during our home observations. The following is an analysis of a particularly relevant interaction we observed during one of our home visits with Andrea.

After obtaining the ethical permission for this study, we contacted Andrea via e-mail and telephone and asked whether she would be interested in creating a story for Jenny using the *Our Story* app. We told Andrea to use the app as she wished; no further specifications were given, and the mother was free to choose the storyline, story characters or story setting for her story(ies). After approximately 1 month, the first author of this paper visited the family at home and video-recorded the mother sharing the story with her daughter.

Due to the quantity and detail of information that can be obtained when using visual methods of data collection and multimodal analysis technique, for the purposes of this paper, we focus on one short exchange, which occurred when the pair was looking at the fifth frame in the story sequence of Andrea's story. We chose this particular frame (approximately 1.5 minutes long), because it is illustrative of the patterns of interaction we observed throughout the whole story-sharing episode of approximately 24 minutes. To support our analysis, we used two-dimensional pictures taken from the video clip using a basic Windows Movie Maker. We used Microsoft Power Point version 2007 to annotate the pictures with text, which represents the spoken words and gestures of Jenny and her mother, produced within an approximately 5-second time span of when the picture was taken. Such data presentation format and analysis technique are similar to that used by other researchers using this methodological approach (e.g. Sissons, 2012).

Findings

Multimodal analysis of the selected story frame

The interaction involves the mother sitting closely together with her daughter on a sofa in the living room. The mother holds the iPad, with her right arm embracing Jenny from the back and the iPad on Jenny's knee. The mother's and daughter's facial expressions show satisfaction and happiness in the form of smiles, almost mirroring the smiles depicted in the pictures they are looking at. Their gestures are integral to the unfolding of the verbal narrative process, with both mother and child pointing to the iPad screen when they talk about individual elements depicted in the picture. At the beginning of the analysed interaction, Andrea does not use any gestures as she firmly holds the iPad in both hands. However, she uses her left-hand index finger to point to the figures depicted in the photographs when she asks the child 'Who's that?'. Jenny's gestures are independent of the central narrative, as she repeatedly pushes the audio button to play the sound of her mother's recorded voice that accompanies each photograph. The overall experience afforded by the multimodal functionality of the iPad story, which is the combination of both visual and audio presentation made accessible through touch, seems to be reflected in the body posture of the mother and child: the mother is physically connected to her daughter with her left upper body part as she leans towards her daughter. Since they are both manually manipulating the iPad (mother by holding it and the child by navigating through the app), they are also both physically connected to the device.

The spoken narrative, which accompanied the short exchange in the selected moment along with the accompanying gestures, facial expressions and body postures, are represented in the sequence of pictures in Figure 2. In the following section, we describe the results from an integrative view of the individual communicative modes we observed.

Integrative interpretation of the results

In the analysed verbal exchange, the mother focuses the talk on who was present and where the child experienced the event depicted in the picture. She uses the present tense to ask questions related to a past experience (*Where are you?*). However, her recorded voice on the app, repeatedly replayed by the child, narrates the story in the past: *My friend Kate was also on holiday*. The use of past tense in the written and audio-recorded narratives moves the story and discussion to the past (see Ellis, 1987) and may have been the reason why the child, in our case, did not follow the mother's transition to reminiscing. By replying *There!*, smiling and pointing to herself in the picture, Jenny's response brings the narrative back to the 'there-and-then' of the story. As such, her answer appears to reflect the actual, in-the-moment spatial and temporal

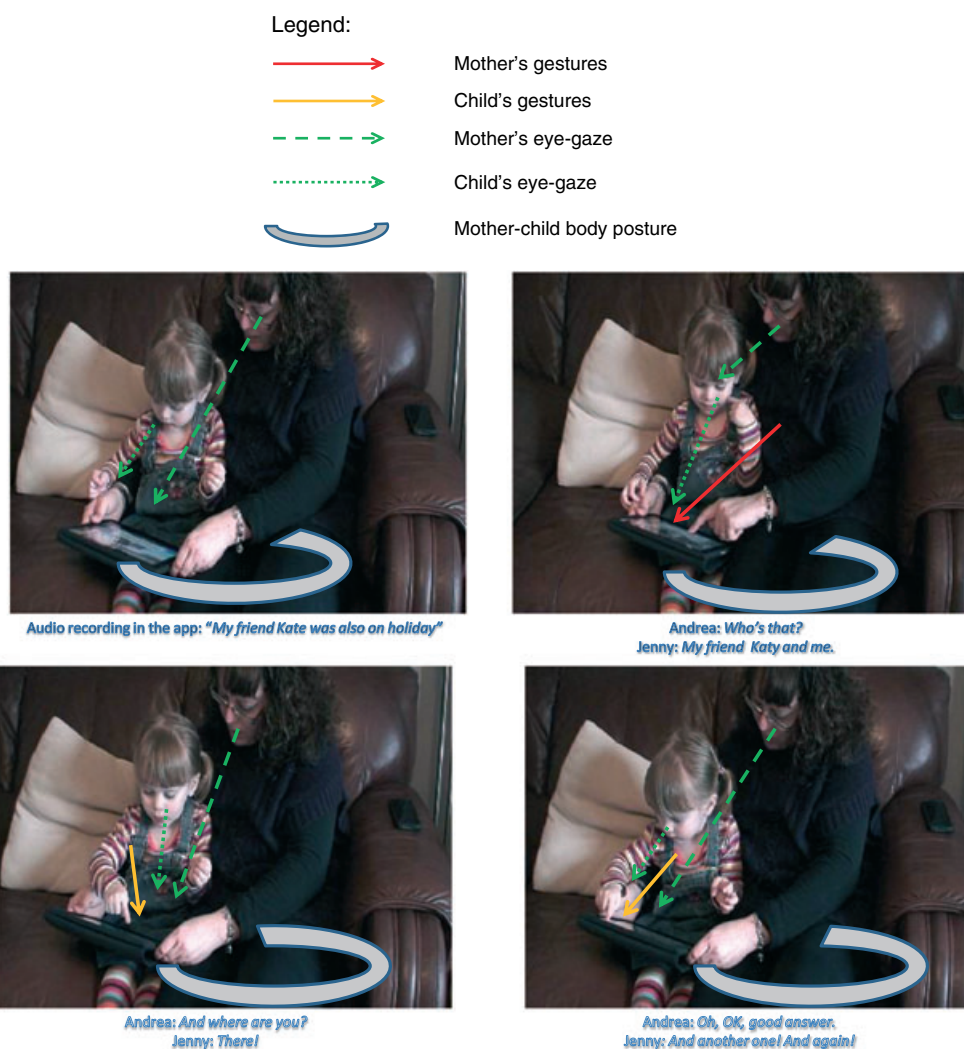


Figure 2: Graphic representation of the multimodal exchange, highlighting individual components of the multimodal exchange

arrangement of the narrative embedded in the app. Similar to sharing a story or viewing a picture in a paper-based medium, the child responds to what she sees depicted in the story happening in the image. However, when considering her verbal response in conjunction with her gestures and facial expression, another interpretation comes to light. Namely, the child's narrative could be interpreted to be situated somewhere in between the actual story-sharing moment, and the representations of past events and narratives provided by the iPad story. The child's gestures were synchronous in terms of her own 'in the moment' narrative, as her words 'And again!' were accompanied by her hand movements. Nonetheless, within seconds, she was able to attend to her mother's actual narration, and used her finger to answer her mother's question and pointed to her face in the app picture. Her verbal response (*There!*) did not match her mother's 'past' and geographically distant discourse, suggesting she may be less familiar with stories being about past and distant events. However, the child's ability to consolidate the various narrative inputs afforded by the context was demonstrated by her coordination of modes in her response. The child was physically manipulating the iPad, listening to the

recorded mother's voice while pointing with her finger to figures depicted in the picture and immediately responding to her mother's question. Andrea's perplexed "Oh, ok! Good answer" followed by a smile shows that she was surprised by the immediacy of this switch from past to present and also acknowledged the formidable task the child had of assimilating information in the spoken, written and visual modes and accommodating her response to the immediate experience.

In this short sequence, there was congruency between the written and spoken words accompanying the picture, as the mother's audio recordings were a direct duplication of her written text. With a meaningful text—sound correspondence, the story provided experience of an early step in understanding the printed word, i.e. that the written words have a relationship to particular events and concepts (see Stanovich, 1980). There was also congruency between the audio-visual narrative in the app and the parent-child actual oral narrative accompanying the app-mediated narrative, which, to a certain extent, facilitated the amalgam of the narratives and learning opportunities here. To what extent could the observed

pattern be attributed to the particular affordances of *Our Story*? In the Discussion section, we seek to explain the findings by drawing on the specific affordances of the app and their possible mediating role in the observed interaction.

Discussion

Personalised stories produced and shared with iPad apps such as *Our Story* offer written, audio and visual presentation of information in a multimedia format and as such, provide parents and children with new opportunities for creating and sharing their own stories. Multimodal analysis is especially suitable for understanding such situations, as it supports the description of complex, multimodal meaning-making processes. This was applied to this observation of a short excerpt of a mother–daughter interaction to understand the role an iPad-personalised story can play in interaction patterns. Although it is difficult to identify the precise influence of the app on the nature of observed parent–child interaction, we can estimate some enabling factors given the app affordances for personalised and multimodal stories. Multiple modes are always intertwined in any interaction, but for ease of explanation we discuss separately the relative influence of the multimodal nature of the story (i.e. the mode of delivery) and the personalised nature of the shared story (i.e. the actual content of the story).

The influence of the medium and modes of story delivery on parent–child interaction

In comparison with paper-based or audio books, the *Our Story* app gives a multimedia representation of an experience, which extends the modal choices available during the process of story sharing by capturing users' sounds, texts and pictures and allowing a seamless combination of modes in a harmonic multimodal ensemble. The affordances of the app for the multimodal representation of stories were leveraged differently by Andrea and Jenny. The mother used the audio feature to narrate part of their experience, and the child used touch to navigate between pictures, text and sound. During story sharing, the mother and daughter interacted and communicated using combinations of embodied modes (gestures, movements, touch and talk), and this interaction was mediated and physically shaped by the medium of the iPad device and disembodied modes (pictures, recorded voice and typed text). The opportunities for engagement with a story via touch, speech and audio are more consistent with the nature of real-life experiences than those afforded by print-based books (Al-Yaqout, 2011), and it could be that this book–life correspondence resulted in the smooth character of the observed session.

In addition to the multimodal platform of *Our Story*, the findings alerted us to another possible influencing factor in the way this parent and child shared their story. Namely, one explanation for the complementary use of the mother–child meaning-making resources may lie in the embodied physical connection involving the mother, child and the iPad situated in between them. Here, the size and portability of iPads cannot be neglected in our understanding of the nature of the interaction. Sitting closely together, the mother–child–iPad trio seemed to create an almost circular body posture in contained physical space. This may have grounded the parent–child–iPad narratives within the in-the-moment 'lived experience', giving the parent–child dyad a sense of place, at least with regard to parent–child gestures and body postures. Parent–child gestures permeated the 'lived' spatial distance between parent and child, and the visual part of their story (pictures and text) embedded in the app. Similar to a happy atmosphere often observed during parent–child book reading with paper-based books (Bus, 2003), the physical spatial connection may have served as a combining force, which brought the mother, child and their personalised iPad story into a shared, intimate and 'happy' arena. It is possible that such a physical spatial connection could have been achieved with traditional small books or other portable electronic book-reading devices (such as Kindle or android tablets). To our knowledge, no study has so far examined the possible influence of the physical size of the story medium, and it would be interesting to see if the intimate and happy atmosphere of parent–child interaction would have occurred with smaller or larger tablets (e.g. the iPad mini).

The influence of the personalised story content on the observed interaction

The personalised nature of the shared story may have largely contributed to the positive nature of the interaction. Janes and Kermani (2001) showed that when parents personalised stories for their children, the shared reading interactions were more enjoyable and engaging for both parents and children, in comparison to their use of commercially produced books. In our study, Andrea created the story for Jenny, based on their shared experience of a family holiday. During story sharing, the interaction was enhanced with both Andrea's and Jenny's individual and spontaneous contributions to the story, which derived partly from their memories of past shared experience and partly from their present shared revisiting of those memories. The happy tone of their voices and frequent smiles during this short episode clearly indicated that the story was based on a shared memory of a positive experience.

Taken together, it is impossible to disentangle the effects of the app from the personalised character of the shared story and from the unique way that this

parent and child interacted. However, what we can suggest is that the personalised story context generated by the *Our Story* app exposed the mother–child dyad to a new experience of story sharing, which they responded to by orchestrating a complex interplay of communication resources. They used the app’s resources alongside their own resources for meaning-making. With the app, the mother could accommodate the multimodal and personalised features of a real-life story and could reproduce, enrich and integrate this in the moment of the story sharing by drawing on events separated in time and space, and using different means of expression. Despite a rather complex set of interaction possibilities, there was evidence of the pair achieving a way of harmonising events separated in time and space, and bringing them into a shared story space. In this respect, the observed interaction achieved a coherence which is typical of happy moments during story sharing or reminiscing (e.g. Haden et al., 1996). The app allowed Jenny and Andrea to support the pictorial representation of their experience with authentic, personally meaningful sounds and, in a convenient and immediate way, the pair could express and materialise their memories in the lived moment of story sharing. Although not apparent in the present analysis, it is conceivable that the possibility of changing an original story in the moment of story sharing (by inserting new or editing previous comments, text or even digital images) can significantly affect the nature of the interaction, the shared and individual memories of the event and the actual story. Turning a shared memory into a unique, ‘lived’ story, composed of jointly contributed present and past multimodal story elements, elevates the story-sharing experience to a level of abstraction that is akin to experiencing and interpreting a piece of art. Our perspective is supported by Hudson et al. (1992) who studied spontaneous oral narratives produced by 3-year-old children. Hudson et al. (1992) found that narratives with a happy content did not contain a clear structure or sequence as is the case in many traditional mainstream children’s stories. In their conclusion, the authors equated the value of such stories with an artistic artefact:

“The appeal of these stories did not come from the sequence of events leading up to or following that happy moment. Instead, they achieved the kind of coherence of a still-life painting or of haiku poetry” (Hudson et al. (1992, p. 142).

Inspired by the synergy of our findings with those of Hudson and colleagues, we recommend that future research approaches to studying similar interaction contexts consider an artistic perspective on personalised iPad stories. With their multifunctionality and efficiency of use, it is likely that iPad story-making apps come closer to a physical oral narrative experience and create new realities for those involved in the story creation and sharing process. In addition, personalised multimedia stories might serve unique speaker-internal and communicative functions, which

may not fit neatly into current theorisations and understandings of traditional parent–child–story sharing patterns. An appreciation of these complex multimodal-personalised contexts from an artistic perspective could offer an alternative analysis of their unique, authentic value.

The use of an artistic perspective in evaluating story-sharing contexts has been suggested before (Stern, 2010), and its value was recently highlighted in evaluating human interaction contexts mediated by new technological innovations (Dannenberg et al., 2011). An artistic perspective ‘plays a critical role in helping to illuminate a different side of everyday classroom life’ (Collins and Chandler, 1993, p. 203) and may appeal to practitioners who lay emphasis on the subtle, often abstract and complex processes of meaning-making. In our case, recognising the contribution of individual communication modes to the overall parent–child interaction helped us to appreciate the role played by multiple modes during the intimacy of mother–child sharing of a multimedia personalised story.

Strengths and limitations of the study

We recognise that there is an inherent ambiguity in interpreting the communicative modes of parents and children sharing a personalised narrative in a complex and intimate relationship that the researcher is intrinsically not part of. We sought to establish the extent to which the *Our Story* app’s specific affordances may have influenced the observed parent–child interaction patterns and acknowledge that the explanatory power of the software and hardware characteristics may have been intertwined with the characteristics of the observed parent–child interaction. Multimodal analysis allowed us to acknowledge the coordination of the communication modes pertinent to narratives that appear in multiple media, highlighting the audio-visual and haptic perception of time and space in narratives that are inherent features of the app. In contrast to mainstream narrative analysis approaches (Preece, 1987), we did not foreground language as the primary communication mode as we believe such an analytic approach would not provide sufficient description of the range of communication modes involved in a complex narrative situation.

To conclude, the present study revealed a detailed analysis of a parent–child interaction during the sharing of a self-created story with the *Our Story* app. As such, we hope that the study provides a deeper insight into the authentic value of personalised stories and in particular the value of multimodal narratives mediated by story-making iPad apps. Considering these values from a holistic perspective, such as an artistic point of view, may help with our understanding of the role new technologies can play in parent–child

personalised stories. *Our Story* stories expand the palette of self-made stories children might encounter in their homes and schools. It is hoped that an insight into one such story will be valuable to those implementing new story-sharing contexts with young children.

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