Children as Readers in Children's Literature

The power of texts and the importance of reading



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'THIS IS MY SHOW!'

Beyond reading to envisioning and enacting Shirley Brice Heath

In the early eighteenth century, when peddlers' wares included English-language chapbooks, these literary portrayals cast children as villains, adventurers and imaginative creatures who could easily transform themselves into miscreants, thieves and tricksters. Little ones could pose as innocents, drawing attention away from their wily peers who meanwhile deftly parted a wealthy man from his purse. Throughout the eighteenth century, such pictures of children were meant both to entertain little ones and to remind adults of their leadership role, guiding the young to moral and productive pursuits.

Historians of English childhood have examined books and toys created for the young since the end of the eighteenth century (see Hunt, this volume). They have analysed artifacts created for children to identify changing perceptions of children's capacities and roles. These analyses have encouraged the presumption of parents and adults through the ages to believe that their role is to teach the young, passing on skills and knowledge children need as they mature into adulthood. The anthropologist Margaret Mead (1970) labeled this particular process of enculturation 'postfigurative': the young learn primarily from their forebears. Within this view has been a premise that the young not only need but also want the instruction and support that come through discipline, lessons and moral direction from their elders. The Western world's version of postfigurative enculturation reflects Judeo Christian principles and practices asserting that the 'right' written texts provide a vital component of the guidance and discipline children need. Thus children must learn both to read and to value 'proper' books and their sources.

In the second half of the twentieth century, wide reports of child development research told of the extent to which young children were being drawn away from physical activity and imaginative play by new entertainment technologies they could control for themselves. Series books, such as those featuring Olivia the pig by Ian Falconer (Olivia, the first book in the series was published in 2000), increasingly portrayed both human children and anthropomorphic animals outpacing adults in taking charge of scenarios from circuses to school plays. By the opening of the twenty-first century, a growing, but still small, share of books written for very young children portrayed enactment of their dreams, fantasies, and creativity. These books featured youngsters devising and managing situations unimaginable to their parents. Some of these featured children reading, and as the century moved on, this reading increasingly accompanied portrayals of individual children creating and acting through their own creative projects of art and science.

During this same period, prevailing beliefs about children and what they need to enter adulthood shifted away from human agents as guides toward technology as agency and source for information, social company, and development of knowledge about the world. Mead predicted this shift as early as 1970, when she outlined the 'prefigurative' world of enculturation that would characterise the future. She maintained that the pace of cultural change and need to stay open to the future would force adults to have to learn from their children as well as their forebears. In addition, to some extent, both parents and children would take part in 'co-figurative' enculturation, learning from their peers in addition to their ancestors.

Mead asserted the need to give up expectations that post-figurative enculturation could take humans into the future. In a prefigurative world, children would always learn faster and in more ways than their elders. Children would gain skills and content unknown and often invisible and unpredictable to adults. Moreover, the young would then acquire expertise and information in ways far more varied than their parents. The experience, range of skills and modes of learning of the young were sure to stretch beyond what those of prior generations could know, do, or might even value. As a consequence, Mead cautioned that adults of the prefigurative future must 'teach their children not what to learn, but how to learn and not what they should be committed to, but the value of commitment' (emphasis not in the original, 1970, p. 72).

This chapter considers ways in which books published after 2010 picture youngsters demonstrating how they integrate reading into their choice of pursuits. In these books, authors and illustrators portray children creating, building and dancing while bewildered adults observe and listen. The children of these texts and illustrations put into practice principles of learning that neuroscientists and developmentalists identify as critical if the brain's potential is not to be curtailed through parents' over-reliance on technological devices during children's early development. When adults celebrate their young children's facility with devices such as iPads, mobile phones and computers, they fail to consider what children are not doing while they respond to the entertaining appeal of what comes from swipes, taps, and button-pushing. Young children's imagination does not easily go to the intrigue of what lies behind and outside the technology of the moment. Mead would point out to those parents living out her predictions for prefigurative enculturation that children following technologies' push-me touch-me seduction rarely think beyond the immediate gratification of entertainment. Children's adeptness in making technology give them exactly what they want when they want it blinds

adults to considering Mead's cautions surrounding the critical importance of teaching children how to learn as well as how to value commitment.

Technological changes

What Margaret Mead could not have predicted within her theories surrounding prefigurative learning was the dizzying speed of technological change that would bring about unforeseen alterations in not only valuation but also processes of *what* to learn. By the end of the first decade of the twenty-first century, almost all knowledge rested literally just beneath one's fingertips by way of the Internet.

Thus children (and many parents) came to see little or no point in the insistence of school curricula on memorisation of facts and figures. Testing for this kind of knowledge within strict limits of time for exam completion increasingly drew public questioning of this kind of 'accountability'. Retrieval is what counts, or so the thinking of state schools and many parents went. Efforts accelerated to put iPads, mobile phones and computers into the hands of children at younger and younger ages. Educators and policymakers as well as corporate spokespersons argued that the future of young children's career development depended on their learning through typing, swiping and talking to various technologies. Schools and towns closed their libraries. Schools stopped teaching handwriting, music, drawing and drama. Mead's view of prefigurative enculturation seemed to be evident in every home and school where adults readily bragged that their children now knew far more than their elders would ever know about how to get the most out of technologies of all kinds.

Meanwhile, far away from primary schools and town council meetings, a different kind of technological advancement was taking place in the world of neuroscience research. After 2010, functional magnetic resonance imaging (fMRI) technologies provided neuroscientists means of examining how different sections of the brain work in synchrony and how neural dedication to particular types of tasks becomes established during childhood and adolescence. These scientists could now deepen their understanding of ways that certain activities and environmental factors shape how and what children observe, imitate, imagine, store in memory and use to form their aspirations and self-perceptions. Scientists could now view what happens in the brain during the haptic learning that derives from touching or gaining information through the 'eyes of the skin', particularly of the hands and forearms, as well as the fingers when they work as the extended tools of hands and arms (Pallasmaa 2009, 2012). Taking part in the arts, especially music, drawing, dance and drama, gives children practice in developing their haptic understanding, which in turn advances aspects of perception, language processing and conceptual representation (see Chapter 4 of Wilson 1998, for example, on the hands at work in puppetry and dramatic play and Chapter 10 on the haptic learning of musicians).

With fMRI technologies, neuroscientists can study what happens to visual images in the brain of a child gripping a tool during creative production or performance. Children receive haptic or hand-guided feedback whenever they grip an

instrument such as pencil, paintbrush, bow or neck of a violin, viola or cello. This process enhances the act of mentally visualising what lies beyond the current moment of action. Gripping with the hand sends what neurologists call 'force patterns' to portions of the brain that enable individuals to envision what lies ahead (Reiner 2000, 2008). As children learn to verbalise the sense of 'nextness' they receive when gripping objects in their hand, they learn to think before they act. The question "What am I to do now that I have this object in my grip?" becomes operative as children mature beyond their own initial assumptions about possible actions to take with gripped objects.

With maturation comes children's increasing competence in verbal expression of their imagined possibilities of what they can do with materials as they draw, build, dance and act. Haptic learning draws children toward increasingly complex powers of seeing and interpreting. Guided practice is essential, however, for the young to continue to improve visual as well as auditory perception of multi-layered details. Doing so often has to take place in the midst of seeming chaos — different kinds of messages and signals coming from peers, adults, and children's own dreams and imaginations. By 2014, neuroscientists were learning about behavioural and neural correlates of what came to be termed 'executive functioning' (EF). A collection of cognitive capacities, EF includes the ability to plan and self-monitor. The neural correlates of EF also affect children's competence in rule representation, cognitive flexibility and the mental control necessary to switch tasks without becoming confused. Musical training, with piano and strings, in particular, enhances EF, which in turn correlates with both verbal fluency and language processing speed of children (Zuk, Benjamin, Kenyon, and Gaab 2014).

As youngsters produce and create projects in either the arts or sciences, they literally 'feel' themselves as agents or builders who make things happen. However, they can do so only as they gain practice and ideally encouragement in listening, observing, envisioning and then enacting or dramatising their internal images and scenarios. This internal envisioning benefits from interests that lead children to spend hours in activities that force them to discern slight differences in features of the shape and orientation of small objects, such as Lego pieces, dollhouse furnishings and jigsaw puzzle pieces. The same point applies to listening in order to sort out acoustic regularities. Perceptual abilities advance as children sort out regularities of sounds and their contexts to predict what might come next. Through both practice and modeling of visual, auditory and tactile discernment as well as cognitive categorisation, young learners reduce the number of struggles the cognitive system faces in sorting irrelevant from relevant or pertinent cues (Grill-Spector, Henson, and Martin 2006).

What then about reading books?

Does reading with adults make a difference in young children's creativity and sense of agency? Does the handling of books, turning of pages and flipping here and there through a book to locate a particular imagine do the same? Some argue

that technologies make text and image easily available to children. What then is so different about picturebooks? Do such books and the time they capture with adults during reading teach children how to learn and to undertake commitments to positive values and activities?

An initial obvious difference between picturebooks and technologies is the permanence and immediate retrievability of image and text in picturebooks. Flipping back to prior pages, finding the same book in the same slot in the bookcase, and discerning differences in detail from covers to inside pages ensures a variety of forearm and hand movements, along with pointing to objects and their features. The fact that images 'stand still' and remain retrievable enables body movement of several types: running back to the bookcase to find a particular book, turning pages to locate a certain animal or bird and pulling out inserts and pop-up sections of books (see Wolpert and Styles, this volume).

A second immediate difference between technologies and picturebooks is the invitation books give to children and adults of reading together. In this collaboration, the two look, talk, sound out emotions and actions pictured and take control of interpretive routes. Directed talk encircles adult and child during picturebook reading. Since 2010, child language research has shown the advantages to both language acquisition and processing of language that is directed to children over that which takes place in the ambient environment (Weisleder and Fernald 2013). When eye contact and face-to-face alignment accompany talk to children, their comprehension and production of language increase. Within picturebook reading, deictic or pointing gestures by both child and adult go along with talk, creating a complex of stimuli that young children from early toddlerhood can imitate and adapt. The simultaneity of gesture, facial orientation, visual gaze, talk and image makes a memorable and often emotional impression on young children. Their frequent requests to 'read it again' indicate their readiness to take in multiple forms of direction and directness at the same time. Moreover picturebooks compel interpretation, comparison and contrast, and exploration of possibilities not explicitly addressed in pictures and text of these books. These interpretive chats between parent reader and child listener inspire imaginative jaunts as well as activities that can go on well outside the covers and contexts of picturebooks.

Beyond the reading process, the content of picturebooks published since 2010 gives further evidence of how some of these books put into place findings from child development and neuroscience research. In the picturebooks described below, children engage in creative work and play leading to innovation and invention. Underlying this sampling choice is the premise that authors and illustrators of the books chosen have absorbed from the popular press neuroscience findings that relate to brain development in early childhood. In addition, artists who work in the world of children's books are regularly featured at conferences on literacy that stress the extent to which neuroscience research findings sharply contradict directions of change undertaken in testing and curricular programmes as well as national education reform policies. For decades, artists have reflected in their works for children contradictions to the rigidly normative. Classics in children's literature routinely get rid of parents, put children in

control of their lives, and illustrate the sense and sensibilities of the young, as well as the draw of the 'forbidden' offered by books (see Smith, this volume).

In findings from neuroscientists, artists see much of their own thinking vindicated, and it would be naive not to expect them to use their creative works to celebrate these ways of thinking. Cognitive neuroscience makes evident the importance to brain development of performative learning that engages senses of seeing, hearing and touching as well as the rewards from precision with hand and forearm manoeuvres. Simultaneous engagement of the emotions in any expression of creativity enhances learning, memory and self-awareness (Damasio 2008). Artists and children, whether engaged in visual, literary, dramatic or any other performative mode of expression, envision their work as it takes shape in their head, heart and through their hands. Both artists and children 'map' in their heads as well as their sketches what they have done, think now, and project ahead (see Warnecke, this volume).

The books noted below for brief analysis reflect artists at work in partner-ship with children and also, whether knowingly or not, with ongoing findings from cognitive neuroscience. Moreover, these books portray ways that children's past experiences with reading (maps, books and notebooks) influence their process of bringing imagination into action.

Rosie Revere, Engineer (Beaty and Roberts 2013) tells in verse the story of a shy girl who dares not speak in her classroom. But at night when no one is looking, she takes 'found' objects and builds, making 'gadgets and gizmos'. When her engineering works are discovered and laughed at by adults, Rosie vows silence and secrecy. One day, however, a great-great aunt comes to visit. She has spent her career building airplanes. A bond between the two engineers, one young, one old, is sealed when the aunt tells Rosie that the "only thrill left on her list is to fly". The rest is predictable, for Rosie determines to build a 'gizmo' that will help her aunt fly. She does so, but when she invites her aunt to watch, Rosie's helicopter flies for a bit and then crashes. Her aunt is delighted, telling Rosie that she has done what she set out to do: build a flying machine. Never mind that it crashed, for this failure was a first try, 'a brilliant first flop' that was a 'raging success!' Rosie's aunt then gives her a notebook in which she has sketched the design of early flying machines, many of which failed, but their 'success' was in their leading to production of some of the familiar 'flying machines' from Boeing and other engineering firms in which the aunt had worked. Rosie studies the notebook and returns to school, no longer shy but now filled with ideas of 'gizmos and gadgets and doohickeys' and determination that she and her classmates must try to engineer. She has a new role to play, now knowing from her notebook and her experience that 'perfect failures' are sure to come on any route to 'raging successes'.

Rosie Revere, Engineer followed the highly successful 2007 volume Iggy Peck, Architect by the same author and illustrator (Beaty and Roberts 2007). The boy Iggy has a passion for building from any substance into any structure. When he reaches his second year of school, however, his teacher declares that no build-

ing is to be done — only reading, writing and arithmetic. A class picnic to an island gives Iggy and classmates the chance they need to demonstrate the merits of building. The footbridge to the island collapses, the teacher faints and the children build from boots, tree roots and string a temporary bridge that saves the day and convinces their teacher that worse things than spending time 'building a dream' could occupy young children.

Both of these books give ample evidence of the power of children's imagination, use of their hands and heads in new roles and, most dramatically, their ability to remember written source materials and to observe materials in their environment to size up their potential use in an envisioned project. These books underline the power of mathematics and reading in several ways. The covers and end papers of both books, as well as some pages within the text, use graph paper as back- ground. Models, sketches, and calculations are scribbled here and there throughout the text as the children take up their projects.

The theme of linking a grasp of abstract concepts to concrete activities and assumed roles persists in books that portray children in their role of enculturating adults prefiguratively while demonstrating and explaining to their elders what is happening and what yet needs to happen. Children draw, read, build models and create while they explain, looking up often to see if adults are indeed listening and watching. If I Built a House (Van Dusen 2012) allows Jack, a young imaginative builder, to introduce his sceptical mother to the dream house he has planned. Robots, techniques of water conservation, rooms for sculpting and drawing, along with gravity-free rooms constitute his dream house. Jack thinks beyond his mother as well as other adult doubters. 'Design' is what counts, according to Jack, and to ensure a place for design, any dream house jack builds will have a 'plexiglas playroom' that puts play at the centre of the world of activities in Jack's house.

Play is mother to the arts. Frances Dean Who Loved to Dance and Dance (Sif 2014) tells the story of a little girl whose love of dancing takes her into the outdoor world where birds are her only audience. But she feels she cannot dance elsewhere with her hair in tangles, arms askew, and legs and feet bouncing and pounding. She soon forgets how to dance. Then she comes across a girl, younger than she, who sits on a park bench singing. Frances Dean joins in. That evening she cannot sleep because she remembers the joy the girl's singing gave her. Frances Dean wonders what could happen if she dared to share her dancing with others. She dances, first with the birds, then with 'the old lady in the square', and later with the young singer who has the lyrics stored in memory. Together the two girls take their singing and dancing throughout the park to not only the birds, but also to mothers and children, bicyclists, sunbathers and picnickers. The play of their improvisations works magic for all.

Tricking parents into co-learning is another feature of notable picturebooks. *One Cool Friend* (Buzzeo and Small 2012) tells the story of Elliot, a nerdy young boy who agrees to go to the zoo with his absent-minded father. The request "May I have a penguin?" leads his father to think Elliot is referring to a stuffed toy, whereas Elliot, a young scientist, takes home a live penguin. Elliot learns and adapts

to the needs of his penguin. References to reading, geographical knowledge, and an understanding of the habits of penguins who come from another continent demonstrate that project work, play and 'planful' negotiation work very well in the hands and minds of children. All this new knowledge threatens to overwhelm Elliot's father. Meanwhile, Elliot busily creates new contexts he could never before have imagined. The antics of the penguin go a long way toward altering plans and calling for new knowledge, skills and ideas on the part of both father and son.

How to Bake a Book, originally published in the United Kingdom in 2014 (Burfoot), sets up a lone child, a female character that relies on her 'weigh[ing] out the words' as she 'bakes a cake'. She measures and counts, thinking all the while of what else her project needs. She uses her prior knowledge of books to guide her as she 'bakes'. She decides that emotional content words must come first. Then the little baker chooses to add some words that reflect in their sound the actions they portray: gurgle, squelch, and splash. Patience is called for in the little girl's creation of characters who work to make the plot 'thicken'. The final touch comes, of course, in the addition of punctuation as well as calibration of the necessary quantity of 'happiness glaze' for the book that is to be baked.

In all these books, children take on roles beyond that of child or student, even in the face of setbacks such as silence, rejection or ridicule from adults. Children devise projects that reflect creative differences. As they do so, they use their hands and forearms to build, draw, repair, write and perform. The passage of time in these books reveals the extent to which children's conceptual memory is highly interdependent with their prior reading and knowledge of books as well as their physical, sensory and emotional interactions with others as they embody their own projects (Gibbs 2005). Immediate interpretation of concepts, as well as their long-term memory, shows the children relying on what neuroscientists term 'represented features' whose details can be visually detected only through close visual attention as well as trial and error and ongoing emotional connection or commitment. Concepts are represented in the brain through distributed cortical cell arrays or assemblies. Thus when young children acquire and develop concepts, abstract and concrete, they do so through actions that cut across motor, sensory and emotional connections in the brain (Kiefer and Pulvermüller 2012).

The so-what question

Readers of this chapter will and should ask "so what does this tell us about children's reading in the digital age?" Witliin this question is the matter of how illustrative in the world of children's book publishing since 2010 are the books analysed here? With what frequency are these ideas reflected within recent works of literature produced in English for young children in the United Kingdom, Australia, New Zealand, Canada and the United States? The short answer has to be "not often enough".

The reality is that publishers in the English-speaking world have since 2010 presented only a relative minority of publications that feature children at work in

roles and performances in which they apply what they have learned from reading and from life experience. Even fewer publications portray children using their hands and forearms to express themselves and to execute projects. The majority of books published for young children since 2010 feature anthropomorphised animals or objects (such as crayons, cars, buses and houses) as central characters. Books in which human children carry action and plot appear far less frequently. Furthermore, in the majority of these books, children undertake adventures that bring them into competitions in which they must use advanced technologies of various types in order to escape or to win out over competitors.

Moreover, among those books published after 2010 that featured children as central characters, only a small proportion portray children busily planning, creating and performing. A substantial portion of these picturebooks and early reading books have placed children in some relationship to one or more technologies — often either automotive or communicative. In these plots, children react to events through and with these technologies rather than create and connect with other children and with adults. In contrast to the books summarised in this chapter, those that feature children in the context of recent technologies rarely emphasise children's own creative 'hand and head work' of referring to the books, maps and drawings created by others or through their own sketching, designing and building within adult-like roles.

Where the neuroscience research points

A key issue raised by neuroscience research in relation to reading and technology has been the loss of three aspects of childhood. The most prominent loss has been exploratory and imaginative play children carry out with adults who serve as attentive engaged partners. Neuroscientists and developmentalists increasingly point to the hazards of closing off opportunities for children's free play (Brown and Vaughan 2009). As children spend more of their time alone captured in passive spectatorship before the entertainment traps of technologies such as game consoles, iPads and mobile phones, they lose out on more than the joy and fulfilment that creative joint play brings.

A second significant loss to childhood has come in the sharp decline in opportunities for children to explore freely the outdoor world of nature (Louv 2008). 'Stranger danger' fears keep children indoors much of their time or under the supervision of 'intimate strangers', such as coaches, camp counsellors and instructors in a range of organised pursuits. Numerous fears about 'what might happen', along with the increase in two-working-parent families, lead parents to organise their children's out-of-school life by scheduling their time. Under the supervision of 'intimate strangers', children take part in pre-scripted rule-governed activities such as sports. Creative open-ended activities or back-referencing to reading or drawing have little place in team sports, games and tournaments of competition.

A third concern raised in cognitive neuroscience research relates to the loss of children's opportunities to experiment in the arts with all types of art supplies,

tools and materials for building projects, and open-ended toys such as blocks. Only within open-ended arts programmes led by artists who inspire and encourage children to 'go where your imagination takes you' can children spend hours working unfettered with a range of materials and tools and reading, observing and listening with adults who think, talk about and demonstrate these arts (Heath 2012). As schools replace pencils, paintbrushes and finger paints with iPads and keyboards, children no longer learn to write by hand or to use cursive script (James and Engelhardt 2012). Because of the particular type of grip that holding instruments of sketching, drawing and painting entails, this particular loss appears to be correlated with children's decline in capacity for sustained attentiveness and long-term memory retention. A key aspect of evolution as a higher-order primate has been dependence on hands and forearms for exploring and managing the physical world. Thus movement of both in the service of creating as well as grasping and wielding has become key to linguistic performance and conceptual processing in human behaviours.

Neuroscience studies consistently show that children's grasp of both concrete and abstract concepts depends on representing these concepts in both sensory and motor areas of the brain. Moreover, context matters in such processing, and modes of play in nature, with creative arts, and in enacted roles enable children to imagine, create, modify and remember these contexts. They do so first in their imagination and planning and subsequently in their lived experience when they actually execute and embody plans built through conceptual processing.

The way ahead?

No one can claim that books such as those analysed here reach more than a slim minority of children in the Anglo world of children's books. Research that relies primarily on observation grows less and less useful for generalisations surrounding ubiquitous behaviours such as reading or writing. As a consequence, scholars must sharply delimit any conclusions they draw from observing the behaviours of only a relatively few individuals. This is the case when scholars try to generalise about literacy behaviours. The rapid population explosion and global expansion of technologies to the far corners of the world within the second half of the twentieth century have made it impossible to collect either valid or reliable data on questions critical to reading patterns and values of either children or adults. The wide span of instruments and sources for reading in English include printed image–rich texts as only one of many modes.

Thus scholars cannot monitor use of all the devices for reading in order to document who reads what, how and with what level of retention of content. Therefore, quantitative conclusions surrounding whether or not technologies have stimulated and expanded reading or reduced it in volume and extent amount to little more than guesswork. We do not yet have the means of tracing behavioural patterns for massive numbers of individuals who seem in some contexts to be reading all the time by one means or another. Therefore, we would do well to

remember that data on which chapters of this volume are based stick closely to artifactual materials (such as books) and qualitative portrayals of observed and self-reported reading patterns of a relatively small number of children (and young adults) engaging with a range of technologies that convey English-language texts in modern economies.

In these economies, factors beyond preferences that children may have for books of certain types influence publishers and authors in turn. Research findings from child developmentalists or neuroscientists are regarded as irrelevant by publishers that have particular markets they want to reach. Authors and illustrators whose publishers have close ties with school policies and practices will ignore research findings that could support production of texts and illustrations unacceptable to schools and particular segments of the population. For example, picturebooks such as those summarised in this chapter are most likely to appeal to parents and teachers ready to tolerate the imaginative antics inspired by Rosie, Frances Dean, Elliot, and other characters who want to build, act, draw, sing, dance or bring home a penguin.

Yet, search engines and the general press are likely to continue their reporting of child development, pediatric neuroscience and learning sciences research. In the coming years, findings from this research will move with increasing speed and force into the mind of the greater public who may bring to the attention of education policymakers and publishers research findings and their implications. As this happens, authors and illustrators of children's books will find profit in following where the research points and the sales go. Within a year of its publication, Rosie Revere, Engineer reached the best-seller list in the United States, and it was often the only book among the top ten that featured a human child as key character. Moreover, the subtle weaving and layering of science-and-art-related themes into text and image present the kind of challenge artists relish. These themes, moreover, under-score what artists, close observers of childhood, have seen in the world of children free of the leash of technologies of entertainment.

A final point regarding the books discussed here as well as others that are similar must be noted. These books almost never feature children playing, thinking and working together in small groups as was a predominant pattern of books written for young readers in the late twentieth century (for example, see the *Friends Forever* series and the trio of books in The Mysterious Benedict Society series). Instead, all books noted in this chapter centre on one child, an individual innovator, planner and leader who often reads, consults maps and refers to sketches and plans. This reflection of individual initiative and creative thinking matches ideals of inquisitive individualism often held by the mainstream parents who are most likely to purchase and read these books. Moreover, schools increasingly stress individual work, and the Anglo world continues to celebrate individuals who strike out on their own to explore, innovate, create and design.

Individual characters featured in books as well as films related to these books remain in the heads of youngsters who seek in numerous ways to imitate and reenact independently creative girls and boys. When characters take up activities

and represent skills available to young children, such as drawing, reading, building, dancing or singing, youngsters are inspired to do the same. As they assume these roles, their readiness to *take* centre stage over adults thrives.

Lily, a three-year old who watched the DVD of *Frozen*, listened to the music and repeatedly searched illustrations in books associated with the Disney film. One day she asked her father to play the film's music on the piano. When he bought the music, set it before him on the piano, and began to pick out the notes, the familiar melody of the song "Let it go" emerged. He began to sing and Lily joined him in singing as she climbed up beside her father on the piano bench. She tentatively fingered the keys as he played and sang. Shortly, Lily looked up at her father with a firm set to her jaw: "Daddy, you don't sing". He protested, "But I want to sing". Pushing her shoulders back, she eyed him directly and announced, "Daddy, this is *my* show".

Stories such as Lily's should assure those who fear the replacement of books by technologies of entertainment. Picturebooks, in particular, remain safe, protected by artistic merits and interpretive openness. Their best security, however, comes in their insistence that adults and children read and talk together, making 'my show' imperatives sure to keep Mead's prefigurative enculturation alive.

Primary sources

Beaty, Andrea. *Iggy Peck, Architect.* David Roberts, illustrator. New York: Abrams, 2007. Beaty, Andrea. *Rosie Revere, Engineer.* David Roberts, illustrator. New York: Abrams, 2013.

Burfoot, Ella. How to Bake a Boole. London: Macmillan Books, 2014.

Buzzeo, Toni. One Cool Friend. David Small, illustrator. New York: Penguin, 2012.

Falconer, Ian. Olivia. New York: Simon & Schuster, 2000.

Sif, Birgitta. Frances Dean Who Loved to Dance and Dance. (Originally published in Sweden). Somerville, MA: Candlewick Press, 2014.

Van Dusen, Chris. If I Built a House. New York: Penguin, 2012.

Secondary sources

Brown, Stuart and Vaughan, Christopher. *Play: How it Shapes the Brain, Opens the Imagination, and Invigorates the Soul.* New York: Penguin, 2009. Print.

Damasio, Antonio. *Descartes' Error: Emotion, Reason and the Human Brain.* New York: Random House, 2008. Print.

Gibbs, Raymond, Jr. Embodiment and Human Cognition. Cambridge, MA: MIT Press, 2005. Print.

Grill-Spector, K., Henson, R., and Martin A. Repetition and the Brain: Neural Models of Stimulus-specific Effects. *Trends in Cognitive Science*, 10, 14-23. 2006.

Heath, Shirley Brice. Words at Work and Play: Three Decades in Family and Community Life. Cambridge, UK: Cambridge University Press, 2012. Print.

James, Karin H. and Engelhardt, Laura. The Effects of Handwriting Experience on Functional Brain Development of Pre-Literate Children. *Trends in Neuroscience and Education*, 1(1), 32-42. 2012. Print.

- Kiefer, Markus and Pulvermüller, Friedemann. Conceptual Representations in Mind and Brain: Theoretical Developments, Current Evidence and Future Directions. *Cortex*, 48, 805-825. 2012. Print.
- Louv, Richard. Last Child in the Woods: Saving our Children from Nature-deficit Disorder. Chapel Hill, NC: Algonquin Press, 2008. Print.
- Mead, Margaret. *Culture and Commitment: A Study of the Generation Gap*. New York: Doubleday, 1970. Print.
- Pallasmaa, Juhani. *The Eyes of the Skin: Architecture and the Senses*. New York: Wiley, 2012. Print.
- Pallasmaa, Juhani. The Thinking Hand. New York: Wiley, 2009. Print.
- Reiner, Miriam. The Validity and Consistency of Force Feedback Interfaces in Telesurgery. *Journal of Computer-aided Surgery*, 9, 69-74. 2008. Print.
- Reiner, Miriam. The Nature and Development of Visualization: A Review of What is Known. In *Visualization: Theory and Practice in Science Education* (pp. 25-29), Eds. J. K. Gilbert, M. Reiner, and M. Nakhleh. Surrey, UK: Springer, 2000. Print.
- Weisleder, Adriana and Femald, Anne. (2013). Talking to Children Matters: Early Language Experience Strengthens Processing and Builds Vocabulary. *Psychological Science*, 24(11), 2143-2152. 2013. Print.
- Wilson, Frank R. *The Hand: How Its Use Shapes the brain, Language, and Human Culture.* New York: Vintage Press, 1998. Print.
- Zuk, J., Benjamin C., Kenyon A., Gaab N. Behavioral and Neural Correlates of Executive Functioning in Musicians and Non-Musicians. *PLoS ONE*, 9(6): e99868. 2014. doi:10.1371/journal.pone.0099868. Online.