1 Picturebooks and early literacy

How do picturebooks support early conceptual and narrative development?

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Introduction

This contribution builds upon two strands of our joint research. The first is to explore the interaction between language acquisition and the acquisition of children's literature (Meibauer 2011; Kümmerling-Meibauer and Meibauer 2013). The second is to explore the nature of picturebooks with respect to children's cognitive development of which language development is a part (e.g. Kümmerling-Meibauer and Meibauer 2005, 2011c). Our basic assumptions can be put into the following hypotheses guiding our research (Kümmerling-Meibauer and Meibauer 2013).

Assumption 1

Children's literature is a specific input in the process of language acquisition. A theory of language acquisition has to reflect on how this specific input supports the acquisition process.

We will show that picturebooks reflect children's early development. In particular, picturebooks support children's conceptual development by showing them pictures that reflect relevant categories, and by engaging them in conversations about concepts and categories.

Assumption 2

Children's literature is important for the acquisition of literature in general. A theory of literature acquisition has to consider how the use of children's literature supports literature acquisition.

Since there is no narrative without descriptive content, we will show that early descriptive picturebooks lay the ground for narrative picturebooks. Moreover, the early acquisition of narratives is seen as the basis for later literature acquisition.
Assumption 3

A crucial property of children's literature is to be accommodated to the cognitive and linguistic abilities of children in different developmental stages. A theory of children's literature has to explain this property.

We will show that there is an adaptation to the child's cognitive and linguistic abilities. However, for lack of space we cannot deeply go into the realm of poetic, aesthetic, and emotional aspects of early literature. We leave that for another occasion.

Against the background of these assumptions, the outline of our contribution is as follows. In the next section, we will deal with what we call "picturebook spurt", a neologism coined on the basis of the term "vocabulary spurt", which is used in research on lexical acquisition. The third section focuses on the descriptive-narrative distinction that plays a crucial role when it comes to the young child's acquisition of narrative abilities. The fourth section addresses the significance of knowledge acquisition and how children learn from testimony, based on picturebooks that impart knowledge about hygiene. The fifth section delves into the impact of literary characters and genres upon children's conceptual development. Finally, we will draw some conclusions from our investigations and address future research topics.

Picturebook spurt: from conceptual classes to early narratives

In Kümerling-Meibauer and Meibauer (2005, 2011a), we developed the category of "early-concept books" and elaborated on noun- and verb-related early concepts. The notion of early-concept book refers to those picturebooks that show single objects from the child's surroundings, such as a ball, a doll, an apple, or a chair. Prominent examples have been created by Dutch illustrator Dick Bruna, but also by renowned artists such as Tana Hoban, Emmanuel Sougez, Edward Steichen, and Andy Warhol. These picturebooks target children between 12 and 18 months of age and usually do not contain any text; sometimes a single word denotes the depicted object. Since they are the first picturebooks very young children typically encounter, at least in Western countries, they introduce the child not only to the "rules of book behaviour" (Lewis 2001: 135) - that is, sitting still, turning the pages, looking and pointing at the pictures - but also to basic skills of perception, such as (1) the differentiation between figure and ground; (2) the recognition of lines, points, and colors as inseparable parts of the depicted item; (3) the understanding that two-dimensional images stand for three-dimensional objects; and (4) the knowledge of learned visual schemata (Nodelman 1988; Nikolajeva 2003; Kümerling-Meibauer and Meibauer 2005: 332f.). Besides acquainting children with crucial visual codes that induce them into visual literacy, these picturebooks also support the young child's lexical acquisition. It is not merely a coincidence that the depicted objects are labeled through nouns. Nouns play an important role in the early lexicon, since approximately 44 percent of the first 50 words learned by children are nouns (Bloom 2000). However, understanding the meaning of words is quite a demanding task because children have to learn the prototypical features that constitute a concept (Murphy 2002). A concept comprises the verbal knowledge that enables the child to refer to a given entity. Thus, if a child has acquired the concept DOLL, she is able to refer to dolls. In this regard, a picture of a doll might support the child's acquisition of concepts (for a more detailed analysis, see Kümerling-Meibauer and Meibauer 2011a).

Hence, we propose the notion "early-concept book" for this book type because its basic function is fostering the acquisition of early concepts. Early concepts belong to the young child's early lexicon and are usually acquired between 12 and 18 months of age. These early concepts do not only encompass nouns, but also verbs, such as to have, to make, to play, and to eat. Although plenty of early-concept books focus on nouns, there are also early-concept books that display actions which are expressed by verbs. Helen Oxenbury's Playing (1981) and Judith Drews' Antons ganze Welt (Anton's Whole World, 2010) are two examples of early-concept books that focus on verbal concepts. Consequently, early-concept books have important properties from the point of view of cognitive and conceptual development.

Nouns and verbs surely play an important role in the early lexicon, but children between 12 and 18 months of age already know other word categories as well: for example, adjectives (big, high), personal-social words (yes, hello, thanks), relational words (there, again), pronouns (you, my) and onomatopoeic words (bow-wow) (Barrett 1995; Clark 1993; Dromi 1987; Kauschke 2000; Kauschke and Hofmeister 2002; Meibauer and Rothweiler 1999). These word categories, as well as abstract concepts such as LOVE, are not easy to depict, and yet there are attempts to visualize them, as for instance in Annette Langen's Noch mal! Meine ersten Lichlingswitze (Once Again! My First Favorite Words, 2012), in which children are introduced to personal-social words (bye-bye, hello) and relational words (more, there), among others. Nevertheless, since the 1970s early-concept books focusing on adjectives, onomatopoeic words and antonyms have come to the fore. In Tana Hoban's Push/Pull - Empty/Pull (1973), the properties are arranged in accordance with the contrast principle of antonyms (big-little; dark-light) and illustrated by objects that prototypically present the respective properties, such as a stone for "heaviness" or a feather for "lightness". Onomatopoeic words expressed by noises turn up in the French book Le livre des bruits (The Book of Noises, 2004) by Soledad Bravi, while antonyms are frequently used in Didier Cornille's Mini maxi. Le livre des contraires (The Book of Contrasts, 2009). Interestingly, in order to depict these parts of speech the presence of objects is essential. Activities, properties, and noises are usually depicted with respect to objects, since it is hard, if not impossible, to depict them purely as concepts.

While many of these words still belong to the child's early lexicon, these books present a transition from the early-concept book to another book type that might be called "concept book". In contrast to early-concept books displaying common objects from different conceptual domains, concept books
go a step further in that they depict objects that belong to a single conceptual domain, such as toys, animals, vehicles, food, or clothes. Typical examples of this book type are Helmut Spanner’s *Mein Spielzeug* (My Toys, 1989) and Chez Pitchall’s *Baby Sees Farm Animals* (2008). Picturebooks that display abstract concepts, for example colors, shapes, numbers, and letters, can also be assigned to this book category. Prominent examples are Tana Hoban’s *Red, Blue, Yellow Shoe* (1986), Keith Haring’s *Ten* (1998), and Dick Bruna’s *B Is for Bear* (1967). These concept books usually do not have any text at all, but sometimes include single words on the same page or alternate pages that denote the objects or the objects’ characteristics (color, shape, number). Although these picturebooks depict objects that refer to nominal concepts as well, the words expressing these concepts mostly do not occur in the child’s early lexicon but are acquired later, when children are about 18 to 24 months old, or perhaps even older. This age span is characterized by a vocabulary spurt. While most children have a repertoire of 50 words by the age of 18 months, the lexicon seems to “explode” after that stage, and children acquire new words on a daily basis, thus enlarging their lexicon and knowledge about concepts at an astonishing pace.

However, the vocabulary spurt goes hand in hand with a picturebook spurt. The expanding market of picturebooks for young children is responsible for an increasing range of topics, themes, genres, and styles. This development leads to the creation of book types that serve different purposes at the same time. They might be used for a pointing and naming game, for searching for hidden things, for stimulating a question-answer dialogue, for categorizing, for the comprehension of speech acts and deixis, and even for a basic understanding of poetic practices, such as rhyme, rhythm, and emphasis. Nevertheless, these picturebooks still have discernible key concepts.

First of all, concept books mainly serve to support the young child’s acquisition of categorization. Categorization enables the child to build up a network of interrelated concepts. Furthermore, acquisition of conceptual domains not only expands the child’s lexicon but might also be regarded as a first step towards an understanding of coherence, in this special case by a coordination of objects belonging to the same conceptual domain (Rakison and Oakes 2003). Therefore, this book type is an extension of the early-concept book focusing on nominal concepts. Some concept books have commonalities with picture dictionaries, in that they show several (five to seven) objects on a page with labels printed below or besides them.

Paul Stickland’s *A Child’s Book of Things* (1990) depicts simple scenes, such as eating breakfast in the kitchen, gardening, or bathing, and combines them with single items from these scenes represented on the opposite page. Stickland’s picturebook engages the child in two activities: first, to name and to describe the things and actions shown in the scene; and second, to search for the single items displayed on the opposite page. The child is thus prepared to focus on a complex image that connects objects belonging to one or two conceptual domain(s). This procedure marks a transition to the more sophisticated “descriptive frames”, which still belong to the category of conceptual domains.

Picturebooks focusing on “scripts” are distinguished by intricate pictures showing crowds of people and objects that are all in the same location or setting, such as a farmyard, a building yard, or a train station. In addition, these picturebooks contain texts that describe the illustrations by stressing the main events in the image. Hence, this book type supports the ability to categorize – that is, the mapping of conceptual domains to a “frame” – and also introduces linguistic features that prepare the child for an understanding of a narrative (Jones 1996). These features concern coordination, subjunction, and anaphor. This book type is connected with the aforementioned concept books and picturebooks focusing on frames: each double spread can be looked at on its own, since its text is never related to the preceding or subsequent pages. Nevertheless, the overarching frame links the images together and builds up a sequence of images. Thus, two reading strategies are interconnected: while the sequence of images entices the viewer into examining the book from the beginning to the end, the accompanying text usually refrains from this strategy, stimulating the viewer to concentrate on the respective double spread.

The communicative situation is quite different in the case of those picturebooks that focus on “narrative scripts”, such as birthday celebrations, shopping tours, train rides, or doctors’ visits. This book type also stresses the importance of conceptual domains, but the text–picture relationship is more complex. Joint reading of picturebooks with a narrative script reveals that this book type combines different conceptual levels, i.e. categorization, coherence, and cohesion, that touch upon both the visual and the linguistic level. The essential cohesive elements are page-turners and recurrent visual elements, such as figures or objects that turn up on every double spread, thus encouraging the viewer to page forward and to search for the perseverative visual cues (Gressnich 2012). Recurring linguistic elements are deictic references, anaphor, and subjunction, complemented by direct speech and *wh*-questions which urge the viewer to turn the pages.

Furthermore, the understanding of narrative scripts already requires a basic understanding of theory of mind – usually acquired in a basic form between 24 and 36 months of age – since conceptual/cognitive frames, such as birthday celebrations or shopping tours, constitute a factual context in combination with an intention (Legerstee 2005). Intentionality can only be understood by children when they are already able to ascribe certain purposes to the actions performed by figures in picturebooks. This ability is essential for the understanding of narratives. While descriptive texts refer only to the events and things depicted in the images (adopting deictical references and the pointing gesture used by joint reading of early-concept books), narrative texts go a step further. They emphasize intentions that propel a storyline that is mainly determined by the respective conceptual/cognitive frame (Wellman 1992).

The book types just presented have two properties in common: their focus is (1) on objects, and (2) on what can be done with these objects. The latter demands the incorporation of characters. This essential trait reveals that they belong to the general category “nonfiction book”, since they introduce the
exploring the descriptive–narrative distinction

The descriptive–narrative bifurcation obviously starts between the second and third year of age, when children are confronted with picturebooks with simple stories that we would like to term “early narratives” (Meibauer 2014). As studies in developmental psychology and language acquisition have shown, children at 30 months of age and older develop basic narrative strategies and become more or less able to connect sentences in order to build up simple narrative forms (Boucke et al. 1995; Kauschke 2000). Descriptive and narrative texts have two properties in common: coherence (a coherent sequence of descriptive passages and events) and cohesion (linear linkage of sentences by means of anaphor, deixis, and so forth). The following aspects distinguish a description from a narrative: a narrative is defined by a climax—that is, a discontinuity turning up in the course of the narrative/story—and by affective markers—that is, the tendency to affect the reader’s empathy and emotional involvement. (Note that we use the notion “narrative” as an equivalent to the term “story”; in studies undertaken by scholars such as Bamberg (1997), Boucke et al. (1995), Dannerer (2012), and Quasthoff (1976), the term “narrative” (Erzählung) is restricted to descriptive (oral) texts, while “story” (Geschichte) refers to narratives with a climax and affective markers.)

Besides concept books and books displaying descriptive and narrative frames, children aged between 2 and 3 will gradually also become acquainted with picturebooks that display an early narrative. We have chosen two picturebooks in order to analyze their narrative strategies and to demonstrate their contribution to the young child’s conceptual development. In addition, by comparing a nonfiction descriptive picturebook with a picturebook that narrates a fictional story, the nonfiction book–narrative bifurcation will be emphasized.

The first book, *Trucks* by Paul Stickland (1986), belongs to the category of (simple) descriptive picturebooks (see Meibauer, this volume, Chapter 3, for a detailed analysis). It shows different types of trucks and their functions. What distinguishes this picturebook from concept books is the depiction of characters who drive, load, repair, or refuel the trucks, and the addition of one or two sentences assigned to each picture. On each double spread, either one or two trucks are depicted against a negative space, and just a few items, such as trees, a gas pump, scaffolding, serve as indicators for different settings. The trucks are always shown from slightly below, thus adopting a young child’s point of view. Although the text is rather descriptive, distinguishing various truck types and describing their specific functions by focusing on different actions, the sentences achieve coherence by deixis, anaphor, and temporal adverbs. An example occurs when a consecutive action is explained in the text. A long-distance lorry and a tow truck are shown on opposite pages, and the text informs the reader about a temporal sequence: the lorry has broken down and the tow truck has arrived to tow the damaged vehicle to a garage. The connection between the sentences is given by anaphor and deictic references. However, this picturebook does not have a climax, nor does it affect the child emotionally. This is due to the fact that the text does not display a continuous character with which the young child might feel empathy; in addition, the short sentences on each double spread describe rather than narrate the event shown in the illustration, because affective markers are totally missing.

While the texts in Stickland’s book are restricted to a double spread and generate a description of two subsequent events, the picturebook *Heute spielt ich* (Today I am Playing, 1995) by Angela Wiesner varies between different book types: some pages look like an early-concept book focusing on nominal concepts, others resemble an early-concept book focusing on verbal concepts. The book as a whole, however, can be characterized as a concept book focusing on the conceptual domain “toys.” Some pages just show single objects, such as a ball, a pull toy, and a picturebook, whereas other pages depict a young child doing something with objects, such as sitting on a rocking horse or playing with a bucket in the sand pitch. Although the subordinated sentences are more or less descriptive, they challenge the reader by their alternation between two grammatical structures, namely first-person and third-person sentences (see Gressnich and Meibauer 2010). The connection between these sentences is mainly built upon by the reference to the young child as the owner of the depicted objects. She either stresses that the playthings belong to her (“my red ball has white dots”) or she is doing something with the playthings (“In the sand pitch I need a spade and sand molds”). The enumeration of playthings and actions done with them culminates on the last double spread, where the child is in a swing facing her teddy bear who sits on a wooden duck. Accordingly, the accompanying text changes from *I to we*: “And we like best playing together in the garden.” When one examines the whole picture sequence, the single illustrations and the text seem interchangeable, because they merely consist of enumerations. However, they lead to a sort of climax in the last sentence.

A unique property of early narratives that attempt to tell a continuous story from the first to the last page is their detachment of concept books and conceptual domains as dominant features. A case in point is *Max bläut* (Max’s Napkin, 1994) by Babro Lindgren and Eva Eriksson. The book consists of a picture sequence displaying the protagonist Max, his dog, and his mother. The setting, Max’s bedroom, remains the same throughout the story. The book first introduces the protagonist; the dog is introduced on the fifth page, while Max’s mother does not appear until page 9, so that the young child is steadily accustomed to the main characters. The text is adjusted to the child’s linguistic and narrative capacities, comprising short sentences that consist of three to seven
words (in the German translation). Invitations, such as *Look, Max*, direct speech, and the sentences on the right page, such as *Max wants to see on the floor*, function as page-turners, making the reader curious about what will happen next. Deictic notions like *there*, the repetitive reference to the protagonists as *Max, the dog or Mama* (note the disclaimer of anaphors), the simple syntactic structure, and the repetition of utterances support the young child’s developing sense of a story. The cartoon-like drawings, the dog wrapped in the napkin, and Max’s attempt to behave like a dog create a humorous effect, while the first appearance of Max’s mother prepares the reader for an imminent change. Her angry facial expression and her scolding of Max and the dog present the climax of the story, which smoothly merges into the story’s conclusion: Max’s mother fetches a new napkin, while Max is cleaning the floor with a scrubber. The normal course of events depicted in this picturebook is interrupted by the sudden appearance of Max’s mother, thus dividing the narrative into two parts, before and after the climax. Furthermore, the reader is emotionally involved by empathizing with the protagonist Max. Affective markers are inserted into the text and the pictures. Although the text is rather short and the sentences have a simple syntactic structure, the repeated imperative *look* on the first page and the onomatopoeic word *pie* on the ninth page invite the reader to bond with the protagonist.

On the picture level, affection is caused by the changing facial expressions of the figures, ranging from happiness to abashment and anger, supported by related gestures. In sum, then, although this picturebook has a short text and relies on a set of simple visual schemata and cues (same setting, three figures, gradual introduction of the figures), it possesses the basic features of a narrative nevertheless—that is, climactic and affective markers. Since the story refers to an event that touches upon the experiences of young children, it might support the young child’s progression from descriptive (nonfiction) picturebooks to narrative (fictional) picturebooks, an interface hardly investigated as of yet.

At the beginning of this section, we referred to the descriptive–narrative bifurcation as a seminal aspect of early literacy. Quite surprisingly, the first picturebooks with texts that very young children come across are distinguished by their descriptive approach. The texts are usually short and mostly describe objects and their functions, and sometimes even events that are connected with the objects. Therefore, this book type lays the ground for nonfiction books for children. Although nonfiction books play an increasingly important role in the international book market, they have hardly been investigated in the realm of children’s literature research. Both picturebook research and children’s literature studies focus on fictional picturebooks and children’s books, thus neglecting a huge book corpus that evidently attracts many children, especially those children who are more interested in factual information about diverse topics than in fictional stories that demand their ability to connect with the fictional characters and settings. Studies in narratology have shown that even narrative stories include descriptive passages and that the distinction between descriptive and narrative sections is not always easy to draw (Fludernik 2009). In contrast to descriptive texts, narrative texts are characterized by affective markers on the one hand, and the building of a climax on the other hand. Considering this, one might argue that the descriptive–narrative bifurcation that seemingly emerges in picturebooks targeted at children at the threshold from the second to the third year of age fosters the child’s appreciation of the different narrative strategies of picturebooks. In this respect, one might even suspect that the descriptive–narrative bifurcation smoothly passes into a descriptive–narrative continuum, as will be shown in the next section.

Knowledge and testimony: the case of hygiene

Learning from picturebooks has to do with transmitting knowledge. Knowledge, as studied in epistemology, is a multifaceted and complex notion. Pritchard (2010) draws a basic distinction between propositional knowledge and ability knowledge. The former relates to knowledge that is represented in the form of propositional contents (which can be true or false, which can be believed or known), the latter to knowledge related to certain actions (e.g. to swimming) that cannot easily be “translated” into a propositional format. With respect to propositional knowledge, one may distinguish, say, geographical knowledge, linguistic knowledge, mathematical, aesthetic, ethical, and scientific knowledge. It is obvious that all these types of knowledge and many more are conveyed in picturebooks.

This said, it has to be recalled that it is not only knowledge that matters in learning from picturebooks. There are many others things to be learned from picturebooks, for example emotions, moral evaluation, appreciation of art. All of these domains cannot be represented in terms of propositional knowledge. Not much is known about the acquisition of these domains via picturebooks.

As Harris (2012) demonstrates, children mostly do not learn from their own experience; instead, from early on, they tend to trust testimony. Testimony is handed over to them by members of their family, such as their parents, grandparents, and siblings. At least in Western cultures, testimony is also spread through picturebooks.

In the joint reading situation, the child is exposed to at least two testifiers: the adult reader and the author. This is an important aspect of a reading situation: the adult, who can be trusted with respect to many nonreading situations, acts as a mediator of knowledge fixed by an author. We do not know anything about the child’s concept of the author. However, we assume that even young children already conclude that adult readers take the things they say from a certain source, namely the book. And apart from in the case of self-made books, most adult readers will not impose the impression on the child that they themselves are the authors of the book. (Note that authorship seems to be blurred in laboratories where children are confronted with artificial children’s books.)

In the following, we will focus on one particular knowledge domain, namely hygiene knowledge. In particular, we will show that descriptive and narrative strategies are often mixed, so that there is a descriptive–narrative continuum.
that fosters knowledge acquisition. Siegal (2008) reports on experimental findings with respect to children’s knowledge about biology, food, and hygiene. He draws on the seminal work of Carey (1985), who assumes that “young children cling to appearances rather than underlying realities that involve true causal mechanisms” (Siegal 2008: 79). For instance:

in their biological understanding, they think that irritants such as pepper as well as germs transmit appearances that correspond to colds, that traits such as eye color are the result of environmental influence rather than biological inheritance, and that a dead corpse retains certain biological attributes of life. (ibid.: 79)

Thus, viewed from an adult (scientific) perspective, children possess false knowledge. Roughly, Carey (2008) distinguishes two developmental phases. In the first phase, until the age of 6, children learn facts about the biological world, for example “that animals are alive and that babies come from inside their mothers and look like their parents” (Siegal 2008: 79). In the second phase, children are said “to begin to construct a coherent framework theory of biology through a process of ‘conceptual’ change” (ibid.). To be more precise, this change is a “nonconservative conceptual change” in that it “requires a strong restructuring in which previous causal concepts that are ‘incommensurable’ with the culturally received view are abandoned” (ibid.: 96).

Takashi and Wilkerson (2011) present an impressive study of Japanese books dealing with toilet training. While these books, for instance Mari Mori’s Chōkū dekitara yo! (I Can Wee, 2006), differ in their approaches to toilet training, they nevertheless are engaged in fostering children’s thinking about bodily functions, thus preparing them for a more adult-like conception of contagion and purification. In a nutshell, we would like to argue that books like these prepare children for the “nonconservative conceptual change”. Toilet-training books take up the child’s interest in their own excrements, as well as their interest in others’ excrements. These books build on Japanese cultural and literary traditions, yet try to integrate them into modern scientific thinking. It is said that it is useful to observe one’s own feces because it reflects bodily habits and may be indicative of diseases. Most astonishingly, there appears to be a prototypical or archetypal picture of a “poop”:

This archetypal portrayal roughly depicts the shape formed when a soft semi-solid is extruded from a tube or nozzle in a series of ever narrowing concentric circles, a pyramid or pointed swirl similar to that made when soft ice cream is extruded into an ice-cream cone.

(Takashi and Wilkerson 2011: 182)

Toilet-training board books for very young children also appear in European and North American countries. Their main purpose is to support toddlers and kindergarten children in learning to control their bodily functions and to introduce them to correct toilet behavior. Depending on the respective target groups, the picturebooks provide hygiene knowledge on diverse levels of complexity. While Leslie Patricelli’s Potty (2010) aims at introducing toddlers to the usage of the potty, Alida Allisons’s Toddler’s Potty Book (2003) additionally conveys knowledge about accompanying hygiene measures, such as the washing of one’s hands.

Often, and following older literary traditions, toilet-training advice is embedded into humorous narratives, for instance, narratives with farting literary characters, such as Shinta Cho’s The Gas We Pass: A Story of Farts (1994) and Taro Gomi’s bestseller Everyone Poops (1998). A comparatively rare example of a German picturebook dealing with excrements is the eminently successful picturebook Vom kleinen Mäuschen, der wissen wollte, wer ihm auf den Kopf gemacht hat (The Story of the Little Mole Who Went in Search of Whodunit, 1989) by Werner Holzwarth and Wolf Erlbruch, which has also been quite successful in its English and Japanese translations.

The story starts with the little mole looking out of his hole and an unknown animal leaving its business on the mole’s head. Annoyed by this lapse, the mole sets out to find the culprit, checking the excreta of diverse animals, such as a bird’s, a horse’s, a cow’s, and a rabbit’s. Finally, with the help of some flies the mole is able to find the responsible animal, a dog, and takes his revenge by leaving his business on the dog’s head.

Although the humorous effects are to the fore, the picturebook additionally imparts knowledge about the diverse forms and shapes of the animal’s defecations. The underlying message, besides the information that every animal has its own shape of excrements, consists in the testimony that making dirt is a natural process, regardless of whether it concerns animals or people. Of all animals, it is the flies, as the excrement experts, who are able to set the mole on the right track.

Although this picturebook tells a fictional story with anthropomorphized animals, its text and images also convey knowledge about the different excrements of animals and how the shape and consistency of dirt are closely connected to the animals’ size and feeding habits. Moreover, descriptive and narrative elements converge in the text. The overarching plot is structured by the typical narrative story design with a beginning, an ending, and a climax, and is complemented by a series of repetitive actions that are divided into a question–answer sequence. The characterization of the animals and their excrements has a descriptive character and is amended by the illustrations.

The descriptive–narrative continuum that determines the majority of picturebooks for young children also emerges in nonfiction books about dental care. A classical representative for this topic is the successful Norwegian book Kariis og Bactus (1949) by Thorbjørn Egner, which has been translated into several languages and is still available on the book market. This book has served as a model for other picturebooks focusing on dental hygiene. What distinguishes Egner’s book is the combination of a fictional story with factual information about dental hygiene. To achieve this goal, Egner uses the strategy of personalizing the germs that are responsible for forms of dental damage, such as caries and plaque. In this
respect, the author relies on a specific strategy, namely the tendency of children (and even adults) to conceptualize complex items, such as germs and microbes, as creatures with humanlike features. Therefore, the germs in Egner’s book are miniature people who have proper names and wear clothes. Nevertheless, the author succeeds in conveying the necessary knowledge about dental hygiene by means of a somewhat hybrid mixture of fictional and factual elements. A number of picturebooks dealing with dental care followed in Egner’s footsteps, showing anthropomorphized germs that populate people’s mouths and attack their teeth. Sometimes, articles of dental hygiene like a toothbrush play a crucial role, as in Virginia Parkinson’s “Cleanliness” (1943). We will come back to this picturebook in the next section when we focus on literary characters.

These dramatic stories merge into descriptive passages providing factual information about dental hygiene that is suitable for children. In contrast, there also exist picturebooks dealing with dental care that matter-of-factly focus on a young child’s (first) visit to the dentist. In Wir besuchen den Zahnarzt (We Visit the Dentist, 2010) by Christiane Wittenburg with illustrations by Ulla Bartl, a group of five kindergarten children go to the dentist, where they are introduced to what usually happens during a dental surgery and where they are finally advanced to dental care themselves. The children’s different emotional reactions, expressed by their facial expressions and assertions, serve as narrative markers that invite the child reader to empathize with the protagonists. Nevertheless, factual information is embedded into the story, thus underscoring the descriptive–narrative continuum of this nonfiction picturebook.

A note on literary characters and genres

In their review of experimental findings, Ganea and Canfield (this volume, Chapter 2) make clear (1) “that picturebooks with realistic pictures provide better support for generalizing information from the pictures to the real world”; and (2) “although features such as the illustrations and type of language do not prevent learning in young children, they may impart incorrect knowledge when they portray the world in an unrealistic manner”. The latter remark is directed against, for example, anthropomorphized picturebooks. In particular:

The children who had heard anthropomorphic language were more likely to say that animals in the real world can have human-like characteristics than were children who were exposed to realistic books. Thus, just as realistic pictures allow infants to generalize labels to novel objects, realistic picturebooks enable preschool children to accurately incorporate the factual information they are exposed to in the books into their conceptions of the real world.

(Ganea and Canfield, this volume)

We think, however, that this generalization might turn out to be far too strong. On the contrary, we suggest that anthropomorphized literary characters may be helpful for conveying reliable knowledge to children. Siegal (2008) stresses that adults as well as children like to draw pictures of germs in which they show anthropomorphic traits. He concludes: “Portraying germs in the form of tiny menacing human-like organisms can be used as a strategy toward improving children’s knowledge of health and well-being” (ibid.: 86).

In the picturebook “Cleanliness” (1943) by Virginia Parkinson, we find several anthropomorphic characters, i.e. Mr. Do and Mr. Don’t, Johnny Toothbrush, and the pelican-doctor Doc Stork. Bob, a little boy, neglects Johnny Toothbrush, and so the latter reasons:

“Oh dear,” he cried so bitterly,
“How can I change his ways,
How can I teach him, Cleanliness
Comes first before he plays!”
“I guess I’ll have to find a way
So Bob will not forget.
I’ll ask advice of Doctor Stork…
He’s never failed me yet!
This worry makes me very ill,
So Doctor Stork will say
That the quickest way to get me well
Is to use me every day!”

Doc Stork, when visited by Bob and Johnny, explains to Bob that he should not neglect his friend Johnny because if he did, Johnny would be very sad. Obviously, the idea behind this plot is to use the authority of these anthropomorphic characters to teach cleanliness (in this case, to use the toothbrush regularly; see Figure 1.1). So, these characters may be helpful in transmitting knowledge concerning hygiene. Anthropomorphic characters feature in more nonfiction books than one would expect. For example, some nonfiction picturebooks use matchstick-men characters that have the function of guides and commentators, as in Grammar Can Be Fun (1940) by Munro Leaf. Other nonfiction books, in turn, personalize abstract items, such as colors, numbers, and machines. One idea behind this strategy might be an attempt to arouse the child’s interest in abstract and oftentimes complex issues. Another prospect certainly consists in facilitating the child’s cognitive and emotional attunement with topics that are not easily understandable, such as grammar, mechanical constructions, and physical laws.

As for “realistic pictures”, Ganea and Canfield mention that further differentiation is needed. However, we would emphasize that this claim also touches upon the analysis of “unrealistic pictures”. For instance, from the perspective of an adult reader, Fox (2000) by Margaret Wild and Ron Brooks certainly is a challenging picturebook. Basically, it is a love triangle between a half-blind dog, a broken-winged magpie, and a fox, in which the fox seduces the magpie into leaving the half-blind dog by way of deception. The accompanying pictures give
the impression of emotional arousal and despair. In order to reconstruct a possible interpretation of this particular text–picture relation from the point of view of a child reader, Kümmerling-Meibauer and Meibauer (forthcoming, b) analyze the fox as a specific literary character, discuss the notions of deception and seduction (with a view to the child’s emerging mind-reading abilities), ask how empathy with literary characters contributes to the child’s moral theme comprehension, and include emotional aspects of the pictures (especially those triggered by the colors). The comprehensive analysis shows that Fox can be read on multiple levels, so that it qualifies for the status of a genuine crossover picturebook. The point we want to make is simple: unrealistic pictures and animal characters that show human traits may be helpful in a child’s acquisition of moral knowledge. So, there is ample room for more subtle experiments on acquiring knowledge from (real) picturebooks. The investigation of the cognitive challenges of personalization and anthropomorphism in picturebooks, whether it concerns fictional stories or nonfiction books, is still in its fledgling stages, but our short overview has hopefully demonstrated that this matter is closely connected with children’s cognitive development and knowledge acquisition.

Furthermore, the analysis of literary characters in picturebooks cannot be undertaken without considering the concept of genre. Since children evidently come into contact with diverse literary genres, such as fairy tales, nursery rhymes, songs, animal stories, and realistic stories, from very early on, they often learn intuitively the significant features that distinguish these genres. While some genres are relatively easy to recognize, for instance by formulaic expressions (“Once upon a time”), the occurrence of animal protagonists, rhymes, and other genres, demand thorough attention to their essential features. We do not know much about children’s genre acquisition and genre. The genre concept, however, definitely steers children’s anticipations and beliefs concerning the content, structure, characterization of figures, and language of specific stories and books. For lack of effectual research in this domain, we cannot delve into this fascinating material. Nevertheless, we would like to stress the significance of genre knowledge as a crucial component of a developmental scenario that illustrates children’s cognitive development via picturebooks.

Conclusions

It goes without saying that our attempts at categorizing different book types and relating them to different developmental stages are only a first step. However, it appears that we can draw some conclusions from our previous analyses.

First, it is realistic to assume that 1-year-olds are not confronted with books focusing on who-questions, and that 4-year-olds are not interested in early-concept books that only show apples or balls. So, the assignment of picturebook types to developmental stages is an empirical task. For instance, we assume that noun-related early-concept books are connected to the developmental stage of the early lexicon (12–18 months, mean length of utterance (MLU): 1), characterized by the naming insight and connected with the pointing and naming game. In addition, we assume that picturebooks presenting a first-person perspective are related to the developmental stage at which the child grasps the concept of a sentence, including some morphosyntax, and forms a theory of mind (thoughts are related to different agents, and indexicals are related to these agents). These processes appear to happen sometime between the ages of
21 and 36 months, with an MLU of between 2 and 4, but more precise knowledge is still needed.

Second, we find picturebooks like the so-called wimmelbook that are related to more than just one developmental stage (Rémi 2011). A wimmelbook is a wordless picturebook which presents a panorama that is rich in characters and detail. The situations shown in these “pluriscenic” settings are familiar to young children. While the different panoramas form separate, independent units, some wimmelbooks, such as those created by Rorlaut Susanne Berner (e.g. 2003), connect them to form a continuous narrative (Rémi 2011). This book type activates the reader on different levels, inviting her or him to different modes of reception. What catches the eye is the tight connection to earlier picturebooks. Wimmelbooks display objects and actions carried out with those objects. They arrange the objects so that they can be assigned to conceptual domains, and produce a combination of descriptive and narrative frames. The characteristics of the aforementioned book types, i.e. sequentiability, multidimensionality, categorization, and descriptive–narrative divide, can also be applied to wimmelbooks, although they do not have any text. The wimmelbook, so it seems, thus demands a lot of fine-tuning by adults, who may nevertheless invite children to read them on their own. Wimmelbooks prompt the viewer to diverse approaches, like playing a searching game, attentively looking at the details shown in the panorama, re-narrating the depicted events, and building up connections between different characters and actions. For these reasons, books of this type appeal to different age groups, from very young children up to 5-year-olds.

Third, reconsider what we have called the descriptive–narrative bifurcation. By and large, picturebooks for the very young are nonfiction books, since they focus on things and events. Yet they are only a stepping stone to the acquisition of narrative picturebooks. While these narrative picturebooks still contain descriptive elements, they need more coherence and cohesion, and they need complications and affective markings (cf. Bouke et al. 1995; Becker 2011; Quasthoff 1987). Remarkably, this does not render the nonfiction books superfluous; on the contrary, the nonfiction books gain in complexity, and there are even children (maybe boys) who are consistent in preferring nonfiction books. The development of this nonfiction/descriptive–narrative bifurcation is still mysterious territory.

Fourth, we endorse the view that even the first picturebooks enhance an understanding of elements that are important for the acquisition of literary literacy (see Kümmerling-Meibauer and Meibauer 2005, 2011a). These elements are, for instance, sequentiability, contrast, the forming of mental images, and talking about things and events as well as them to shared experiences. In later developmental stages, the child will develop the concepts of story or genre – that is, concepts that are fostered by picturebook input, yet are achievements of the child at the same time. Thus, the child will detect that there are similarities between picturebooks and her or his own creative stories.

Fifth, while we have highlighted the relation between language development and picturebook spurt (drawing a parallel to the vocabulary spurt), there are several accompanying developmental processes that have an impact on early literacy: the development of playing, including pretend play; and sensorimotor developments leading to different activities, such as opening and closing flaps, looking at hidden things through a peephole, touching cloth, fake fur and other materials representing animals’ skin, and making noises. Rhyme has to do with the development of phonological awareness and is very important, of course. The development of painting abilities might be supported by coloring books.

Finally, picturebooks have a crucial impact on the child’s knowledge acquisition and her or his approach towards testimony. As regards picturebooks, children acquire knowledge on different levels, ranging from knowledge about their immediate surroundings, usually displayed in early-concept books and concept books, to learning about different knowledge domains, such as vehicles and hygiene, not to mention more complex spheres such as moral knowledge. In addition, the important function of literary characters as mediating agents should not be underestimated in this respect. As narrative and emotional markers, they foster children’s empathy and might even support their knowledge acquisition.

This overview is far from complete but has, we hope, evinced the outstanding impact that picturebooks have on the young child’s cognitive and narrative development. It goes without saying that such an enterprise can only be satisfactorily accomplished by an interdisciplinary approach, embracing cognitive psychology, linguistics, picturebook research, and education.

Notes
1 For examples, see Kümmerling-Meibauer and Linsmann (2009).
2 Another interesting topic is geographical knowledge, for instance the ability to understand maps. Astonishingly, maps assume a significant role in picturebooks focusing on travels, itineraries, and historical events. See Kümmerling-Meibauer and Meibauer (forthcoming, a).
3 Summarizing the content of the first book in the The Book of Pop Series by Murakami Yachiyo, Takashi and Wikerson (2011: 183) write: “Among the lessons incorporated in this volume we can find the following: bodily functions are not cause for embarrassment; different textures of excrement can be identified and named; your excrement reflects what and how you eat; one should examine one’s stools, and make daily observations; don’t forget to flush the toilet and wash your hands.”
4 See Kümmerling-Meibauer and Meibauer (2014) for a detailed analysis of matchstick men as literary characters in picturebooks.
5 Typical examples of crossover picturebooks are Pop Art picturebooks that were prominent in the 1970s and targeted at children and adults alike (Kümmerling-Meibauer and Meibauer 2011b).
2 An examination of factors that affect young children’s learning and transfer from picturebooks

Patricia A. Ganea and Caitlin F. Canfield

Introduction

Children are surrounded by symbols from early in life, and within a few years they must master a variety of educational symbols, including letters, numbers, mathematical symbols, maps, and in some cases musical notation and computer icons. Extensive research points to the importance of beginning to acquire this knowledge in preschool and early elementary school. For example, children who learn letters and their relations to sounds at a young age perform substantially better in later reading, not only in early elementary school but also through high school and perhaps beyond (Foulin 2005; Hulme et al. 2012; Levin et al. 2006; Stevenson and Newman 1986).

Symbol-mediated experience vastly expands children’s horizons by enabling them to learn from a variety of sources and, most importantly, to acquire information beyond the here and now. A common assumption among parents and educators is that symbolic artifacts can be used to maximize learning. Pictures, videos, maps, and other symbolic objects are routinely used at home and in preschools to expose young children to new information. Given the widespread practice of using symbolic artifacts to teach children new information, it is important to consider what factors may influence the processes involved in early learning of symbol-mediated information.

One factor that constrains children’s learning from symbolic artifacts is their understanding of the symbol-referent relation (DeLoache and Burns 1994). Symbols have a dual nature: they are both objects in and of themselves and at the same time representations of something else (DeLoache 1998, 2002). To acquire information from symbols, children first need to appreciate their representational nature, the fact that they refer to something else. For example, for children to learn and extrapolate new information from a picturebook, they first need to appreciate that information about the objects and events in the book is relevant to the real world. Similarly, to acquire information from video, children first need to understand that video images can represent real events. A good deal of developmental research has shown that understanding the nature of symbol-referent relations can be a difficult task for young children (Callaghan 2000; DeLoache 2002; Harris et al. 1997; Liben and Downs 1989; Tomasello 2003).