

SUE WALKER

DESCRIBING THE DESIGN
OF CHILDREN'S BOOKS:
AN ANALYTICAL APPROACH

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ABSTRACT

Descriptions of graphic language are relatively rare compared to descriptions of spoken language. This paper presents an analytical approach to studying the visual attributes and conventions in children's reading and information books. The approach comprises development of a checklist to record 'features' of visual organization, such as those relevant to typography and layout, illustration and the material qualities of the books, and consideration of the contextual factors that influence the ways that features have been organized or treated. The contextual factors particularly relevant to children's reading include educational policy, legibility and vision research and typeface development and availability.

The approach to analysis and description is illustrated with examples of children's reading and information books from the Typographic Design for Children database, which also demonstrates an application of the checklist approach.

THIS PAPER PRESENTS AN ANALYTICAL APPROACH

to studying the visual attributes and conventions in young children's reading and information books in order to understand why particular design and production decisions might have been made.

A recurring theme in information books for children has been the life and work of the honey bee, and examples from the 1890s to the 1980s show the different ways text and pictures have been used to tell this story. Each of the spreads illustrated in FIGURES 1-4 contains a number of graphic components or 'features': text, pictures, headings, captions. These are treated differently through, for example, typeface, spacing, position on the page, use of color. The different treatment of such features reflects, among other things, the printing technology of the time, the way teachers may have used the books in the classroom, national educational policy and publishers' ambitions to sell books. Each of these examples typifies the visual characteristics of books produced around the time each was published. The bee pictures are just one example from a larger study that has looked at changes in visual organization in children's reading and information books from 1860 until the present day. Part of this work has been the development of an approach to systematic description and analysis of the visual characteristics of these books. It takes forward the more general idea that in order to understand language use you need to analyze and describe its characteristics and work out why particular choices have been made. Such descriptions of graphic language remain relatively rare compared to, for example, description of varieties of spoken language.

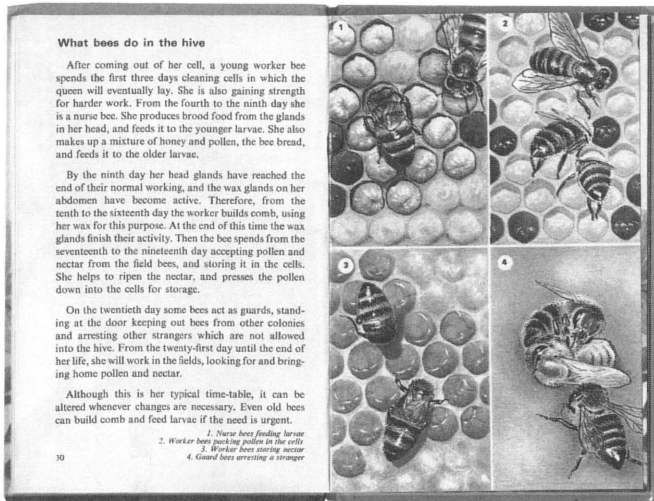


figure 3. top
Spread from W. Sinclair, Life of the honey-bee, Loughborough: Wills & Hepworth, 1969

By the 1960s the use of the double-page spread as a 'container' for related text and illustration was well established. This spread follows the characteristic Ladybird books approach with text on the left and a colored illustration on the right. Captions for the illustration are placed on the left-hand page as part of the text page rather than being included in the full-page, bled-off illustration.

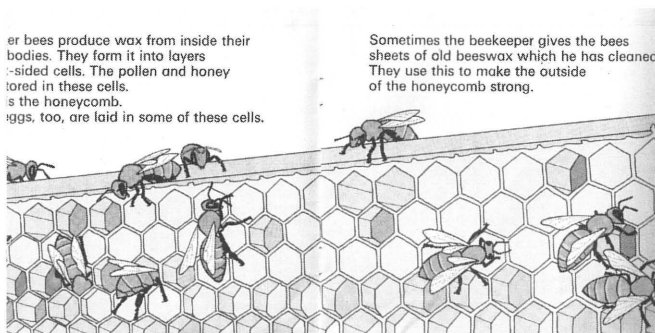


figure 4. bottom
Part of a spread from S. Allen, Bees make honey, Over, Cambridge: Dinosaur Publications Ltd, 1980

In the example from the 1980s the illustration extends across the double-page spread. The text that relates to it is divided between the two pages that make up the spread; and each block of text comprises related sentences indicating editorial decision-making.

THE ANALYTICAL APPROACH

The approach taken here had its genesis in the late 1970s and 1980s in work undertaken by what has recently been called the 'Reading School' (Bateman, 2008). Academics in the Department of Typography & Graphic Communication at the University of Reading developed interests in describing graphic language along the lines taken by linguistic scientists. Michael Twyman's 'Schema for the study of graphic language'

provided a tool for describing mode (verbal, pictorial, schematic) and configuration (linear, linear-interrupted, tabular) of graphic language (Twyman, 1979). Elsewhere he proposed that choice of mode and configuration are but two of the factors that influence the decisions that are taken in the making of a document and he listed production method (technology), the user, the circumstances of use and information content as relevant others (Twyman, 1982). Patricia Norrish's work on the graphic translatability of text identified and articulated the structural components of documents starting with the artifact itself and how it might be broken down into describable segments: body matter, front matter, end matter (Norrish, 1987). Some of this work at Reading was, unusually, concerned with hand- and typewritten documents produced by lay people, thus acknowledging, as linguists did, different levels of formality and expertise in making documents. Walker's (1982) approach was taxonomic and resulted in 'checklists' of document elements that were used to identify characteristic 'features' of particular kinds of document such as handwritten and typed letters, 'lost cat' notices and handwritten posters advertising community events. Waller's work on reader-focused notions of accessibility and structure in relation to graphic genre demonstrated the value of analyzing documents on a number of levels (see Waller 1987a, 1987b, 1991). This work was taken further by the GeM project (based at Stirling University) which identified the following levels of structure: content (the components of the information to be communicated); rhetorical (the rhetorical relationships between the content elements and how the content is argued); layout (the nature, appearance and position of communicative elements on the page); navigation (the ways the intended mode(s) of consumption of the document is/are supported); and linguistic (the structure of the language used to realize the layout elements). Each of these levels was placed within the following sets of constraints that needed to be taken into account: canvas (those arising out of the physical nature of the object being produced, such as paper or screen size); production (those imposed by the technology used); and consumption (those arising from the needs of the user and the circumstances

of use). The application of this descriptive approach was demonstrated in accounts of the linguistic and graphic structure of spreads from information books (Allen, Bateman and Delin, 1999; Delin, Bateman and Allen, 2002; and the approach in detail is given and expanded in Bateman, 2008). The approach described here extends some of this earlier work. It builds on the checklist formulation described above, combined with considerations that influence design decisions taken: constraints imposed by the intended readership, the circumstances of use and the technology used to produce them. Breaking a document down into elements or segments—a well-developed concept in linguistics—is a useful starting point in the compilation of a checklist.¹ In the approach described here, the ‘checklist’ is a listing of the ‘features’ relevant to the level of description being undertaken. Using a checklist ensures that the same approach is taken to ‘looking’ at each of the items in a particular corpus. Each ‘feature’ is further subdivided into variants, attributes or states—that describe the variations that might occur within a particular feature. Thus, a checklist might contain features of ‘macro-spacing,’ such as treatment of paragraphs, margins and space around headings, and also ‘micro-spacing’ features such as type size, line spacing and word spacing, and each of these can be subdivided into the variants that might occur within each.

The checklist is just one part of this analytical approach; the second is consideration of contextual circumstances that are likely to have influenced the way that the features have been organized or treated and that therefore should be considered in any analysis. This approach stems from the practice of designing documents and the constraints imposed by questions a designer might ask: How and where will it be used? Who are the readers? What kind of information does it contain? What constraints does the technology being used impose? Is the reader likely to have expectations about the ‘look and feel’ of the document? Consideration of the constraints and influences imposed by the context in which something is designed and produced enables a richer description of children’s books (or any graphic genre) that would result from a description based on a checklist alone.

1 (see Walker, 2001, pp.23–9).

COMPILING A CHECKLIST

Compiling a checklist can be done in a number of ways. One starting point, for example, has been consideration of rules and conventions that underpin some document types (Walker, 2001). In trying to work out what features might be relevant in a checklist designed to describe the graphic attributes of ‘lost cat’ or jumble sale notices, for example, consideration of rules that children learn at school, and that become part of a non-designer’s graphic repertoire, would suggest that use of capital letters and underlining would be essential features to include. A checklist used for a description of handwritten and typed correspondence included features relevant to the capture of information relevant to that particular graphic genre and for which there were conventions, such as the setting out of the ‘inside address’ or the ‘complimentary close’—features at a macro level of organization heavily influenced by letter-writing prescriptions. Features such as ‘treatment of the date’ allowed for description at a micro level of visual organization and included such attributes as the use of superior figures and of abbreviated forms of the date.

The checklist presented here was developed through consideration of design attributes relevant to children’s reading, such as typefaces and spacing, the relationship of pictures to text, and page size and format. It was organized in four sections each comprising features relevant to the analysis: artifact description; document structure and articulation of content; typography; and illustrations.

ARTIFACT DESCRIPTION

Can the book be easily held by small hands? Do the pages open easily? Is the cover material durable? The materiality of children’s books can be an important reflection of the extent to which they have been designed with the needs of children in mind. Features in this section of the checklist included size and format, binding, printing process and paper.

This section comprised features that define the structure of a document, the way that its content might be organized, and the way that the articulation of this structure helps or hinders access to it. Following Norrish (1987) the term 'extra matter' was used to distinguish between the main information content of the artifact (body matter) and the other information that may appear before or after the body matter. The extra matter in a children's reading book, for example, might include a frontispiece, title page, contents page, acknowledgements, notes for the teacher, publishers' advertisements; in an information book the list might extend to include a list of references, index, glossary and list of illustrations.² Such features can provide information about how a book might have been used in the classroom, about innovative features and about publishers' approaches to marketing. Some components classified as 'extra matter' were navigational aids, such as contents pages and indices. The body matter in a children's book may be structured through additional navigational aids such as headings, key words in the text and page numbers; and in information books extended to captions, graphic devices such as arrows and bullets and summary text.³ The organization of the contents of the books, into broad structural units (sections, chapters, double-page spreads, single pages) has been defined by Waller (1991) as 'artifact structure': "those features of a typographic display that result from the physical nature of the document or display and its production technology." In the checklist the term 'information unit' was used with the aim of capturing the extent to which topic boundaries coincided with pages or openings. In children's books, especially those produced for younger readers, there is often alignment of a topic or story within the constraints of a page or double-page spread (FIGURE 5).

TYPOGRAPHY

The features included in the 'typography' section of the checklist were those particularly relevant to a broad diachronic study of children's reading books, and were therefore at a fairly coarse-grained level of analysis. Thus, typeface names were

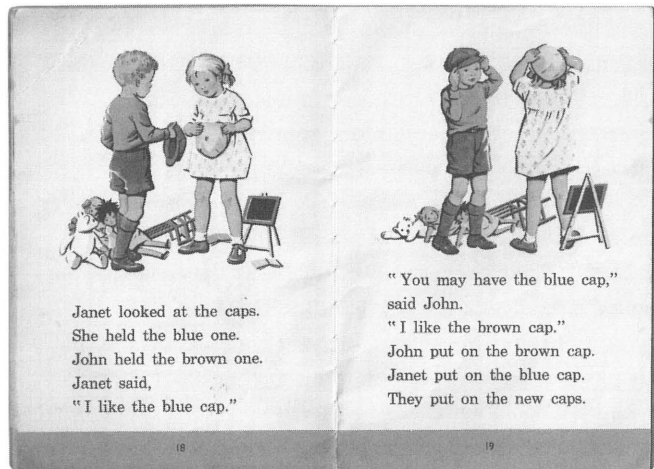
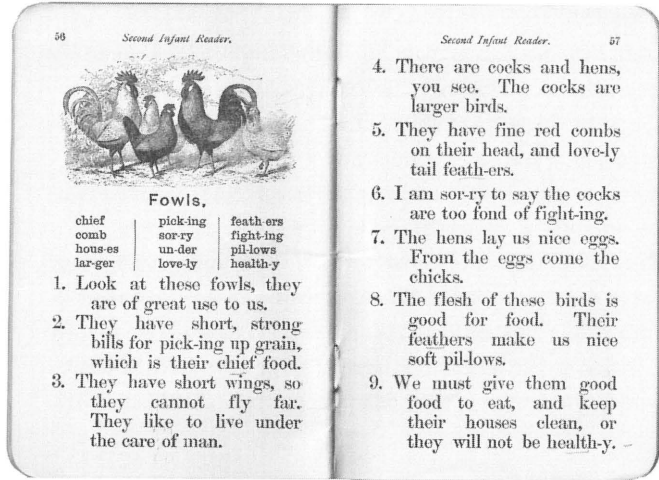
2 As Norrish reported, it was not difficult to assign matter in this way: "The main information content normally has a visual cohesion which reflects its semantic cohesion, whereas the extra matter is usually made up of small, discrete semantic units which have different functions in relationship to the artifact as a whole." (Norrish, 1987, pp. 10-11). In design terms, too, this approach reflected the way that many books are designed, the body matter being designed before the material around it.

3 Waller (1987a) used the term 'global' to refer to devices that help to make sense of the structure of a document as a whole, and 'local' to those that guide readers round parts of a text and help to establish hierarchy and structure.

figure 5.

Spreads from Second book, 'The graphic infant reader,' London and Glasgow: Collins, 1891, pp. 56-7 and from M. O'Donnell and R. Munro, Out and about, 'The Janet and John Books,' London: James Nisbet, 1949, pp.18-19

In these examples the 'topic,' a set of related and semantically coherent graphic elements, coincides with a structural component of the book, a double-page spread in Second book, and the page in Out and about.



not as relevant as broad category: serif or sanserif typeface, or whether it was a script or handwritten form. Information about the spacing of type, however, was gathered in detail because of the inter-relationship of typesize, line length and space between the lines, and the effect of this on ease of reading. Features such as the treatment of the start of paragraphs, and differentiation of key words were important because of their relevance at particular periods of time to methods of teaching reading.

ILLUSTRATION

Pictures are integral to most books for children. Relevant here were features relevant to visual aspects such as the use of color, or the location of a picture on a page (rather than content-related aspects, such as gender portrayal, or stylistic issues). In information books the functional use of color to articulate content (such as the use of red to show those parts of a picture that represented heat), or structure (such as the use of color to draw attention to those parts of a picture that were mentioned in the text) was recorded. The position of a picture in relation to the text that referred to it indicated the extent to which the design of the book may have been influenced by consideration of the reader.

FEATURES & ATTRIBUTES

Within each of the checklist sections described above, features considered to be relevant to a description of the visual organization of reading and information books were identified. This was done by looking at a representative selection of children's books from the 1880s to the 1960s, in order to get an overview of their characteristic features. Each feature was then broken down into 'states' or 'attributes' that reflected the intended level of detail in any description. It would be easy to go into considerable detail about, for example, the binding of the books, but for the purposes of this study what mattered was whether books could be opened flat and whether they were bound in such a way to support extensive use. With regard to document structure and articulation, for the level of description required, noting presence or absence of a feature was sufficient as, for example, in the case of 'extra matter.' For the purposes of this study whether or not books had a contents page or notes for the teacher was more relevant than the typography of each because the study was concerned with access and navigation, not contents page typefaces and their articulation. However, in the case of headings, as well as noting presence/absence of levels of heading, the particular typographic treatment of that heading so that it was differentiated from the main text was also relevant to the study, so the checklist allowed for the recording of

FEATURES <i>and their</i> ATTRIBUTES	
<p>TYPEFACE</p> <p>...Serif - transitional</p> <p>...Serif - slab</p> <p>...Serif - unknown/other</p> <p>...Sanserif - grot</p> <p>...Sanserif - humanist</p> <p>...Sanserif - geometric</p> <p>...Sans serif - unknown/other</p> <p>...Script typeform</p> <p>...Hand drawn or stenciled</p>	<p>ALIGNMENT</p> <p>...Left</p> <p>...Justified</p> <p>...Centered</p>
<p>WORD SPACING</p> <p>...Normal</p> <p>...Narrow</p> <p>...Wide</p> <p>...Variable</p>	<p>TREATMENT OF START OF PARAGRAPHS</p> <p>...Serif - transitional</p> <p>...Serif - slab</p> <p>...Serif - unknown/other</p> <p>...Sanserif - grot</p> <p>...Sanserif - humanist</p> <p>...Sanserif - geometric</p> <p>...Sans serif - unknown/other</p> <p>...Script typeform</p> <p>...Hand drawn or stenciled</p>

a range of variants, and inclusion of the attribute/state 'other' meant that anything unusual could be noted. The list above gives examples of feature and attributes from the children's books study. The full checklist, showing the features and attributes in each of the checklist sections, is shown in TABLE 1.

This checklist has been used to gather data from a selection of young children's reading and information books dating from 1830 to 1960 published in the UK; it underpins the *Typographic Design for Children* database (www.bookdata.kidstype.org)⁴. The database can be interrogated in different ways to enable synchronic and diachronic comparison and description. Such description provides a picture of the graphic language of children's books; and through this an awareness of the characteristics of selected features at a particular period of time, or of the extent that usage changes over time.

⁴ *The information books part of this site is still under development but formed the basis of a study of children's information books by Robson (2007).*

TABLE 1, *this page and facing page*

Checklist for recording the visual attributes of childrens' books, as used in the Typographic Design for Children Project

IDENTIFICATION INFORMATION

- category**
 - o reading book
 - o information book
- author**
- editor**
- series editor**
- illustrator**
- title**
- series title**
- publisher**
- place of publication**
- date**
 - o approximate date
 - o supplied date

..... to

(single year, decade, or date range)
- edition**
- printer**
- place of printing**
- location**
- reference**

ARTEFACT DESCRIPTION

- page size height mm width mm
- orientation**
 - o portrait
 - o landscape
- no. of pages pp.
- paper**
 - o matt
 - o shiny
 - o coloured paper
 - o different kinds of paper in book
 - o other
- binding**
 - o single-section sewn
 - o single-section saddle-stitched
 - o section-sewn
 - o side-stitched
 - o perfect binding
- type of cover**
 - o hard cover
 - o soft cover
 - o self cover
- cover material**
 - o board
 - o cloth
 - o cloth-covered board
 - o paper-covered board
 - o cloth-covered paper
- colour of cover material**
- cover printed in**
 - o full-colour
 - o more than one spot-colour
 - o single colour

- printing process (text)**
 - o letterpress
 - o offset litho
 - o other:
- printing process (images)

DOCUMENT STRUCTURE AND ARTICULATION

- Extra matter**
 - presence / absence of
 - o frontispiece
 - o title page
 - o back of title / imprint page
 - o contents page
 - o notes for teachers
 - o list of references
 - o list of illustrations
 - o glossary
 - o index
 - o acknowledgements
 - o advertisements
 - o other:
- Navigation**
 - presence / absence of
 - o contents page
 - o index
 - o page numbers
 - o section heading
 - o heading level 1
 - o heading level 2
 - o heading level 3
 - o running head
 - o key words in text
 - o graphic devices (such as arrows, bullets to direct attention)
 - o other:
 - heading distinction**
 - o no headings
 - o no obvious hierarchy
 - heading 1**
 - o size
 - o boldness
 - o italic
 - o typeface
 - o capitalisation
 - o indentation
 - o colour
 - o space
 - o underlining
 - o other:
 - heading 2** [with attributes as above]
 - heading 3** [with attributes as above]

Information units

- o chapter/section
- o double-page spread
- o page
- o other:
- graphic components**
 - o main text
 - o supplementary text
 - o heading(s)
 - o picture(s)
 - o picture(s) with labels
 - o captions to pictures
 - o exercise
 - o other:

MAIN TEXT TYPOGRAPHY (reading books only)

typeface

- o serif
 - o old style
 - o modern
 - o transitional
 - o slab
- o sanserif
 - o grot
 - o humanist
 - o geometric
- o script typeform
- o handdrawn/stencilled

infant characters

- o yes
- o no

x-height mm

cap height mm

point size (based on [eg type specimen]

line feed mm

line length mm

word spacing

- o normal
- o narrow
- o wide
- o variable

letter spacing

- o normal
- o narrow
- o wide
- o variable

average no. of characters per line

alignment

- o ranged left
- o justified
- o centred

hyphenation

- o yes
- o no

no. of columns

treatment of the start of paragraphs

- o indented
- o indented plus space
- o full out
- o full out plus space
 - o first line extended to the left
 - o first line extended to the left plus space
 - o numbered and indented
 - o numbered and indented plus space
 - o numbered and full out plus space
 - o numbered and first line extended to the left
 - o numbered and first line extended to the left and space
 - o other paragraph treatment

differentiation of key words

- o no differentiation
- o bold
- o italic
- o caps
- o colour
- o typeface
- o type size
- o underlining
- o other:

Colour use in text

colour used for

- o heading(s)
- o main text
- o supplementary text
- o captions
- o labels
- o other

distinction of

- o letter
- o word
- o phrase
- o sentence
- o paragraph
- o other:

function

- o decorative
- o articulation of structure
- o articulation of content

ILLUSTRATION

type of picture

- o line drawing
- o simple shaded drawing
- o detailed shaded drawing
- o photograph
- o map
- o plan
- o diagram
- o bar chart
- o pie chart
- o other
- o diagram

position of picture in relation to text

- o above text that refers to it
- o below text that refers to it
- o integrated across spread
- o to right of text that refers to it
- o to left of text that refers to it
- o surrounded by text that refers to it (as text runaround)
- o between text that refers to it
- o no visual relationship to text
- o text on verso, picture on recto
- o text on recto, picture on verso

treatment of picture

- o squared up or boxed
- o bled off
- o no boundary / vignetted / cut out
- o plate
- o other

colour or not

- o black and white
- o single colour
- o quite colourful
- o very colourful

colours applied to

- o all foreground elements
- o some foreground elements
- o all of background
- o some of background

function of colour

- o decorative
- o articulation of structure
- o articulation of content

basis for colour choice

- o realistic/associative
- o other:

position

- o on same page that refers to it
- o on same spread that refers to it
- o on different pages

As well as providing information about language in use, and about book design in particular, this approach to description that considers a range of contextual elements, such as educational policy, legibility and vision research, typeface manufacture and advances in printing technology, and reinforces the view that the designing of the visual presentation of information is frequently constrained by external factors.

The pages from books about bees, described at the beginning of this essay show how text and pictures were integrated within the pages of a book and how this integration has changed over time.⁵ The analytical approach described here encouraged exploration of this integration by considering why a particular text/picture relationship occurred. In the case of the bee spreads, changes in printing technology, in particular, printing in color and typesetting methods, have determined how the text and pictures have been organized, and show the move from text-picture organization influenced by production methods and printer-led conventions to that influenced by consideration of the child reader.

Two further examples demonstrate the influence of contextual factors on the visual organization of reading books. First, that of educational policy in Britain through the impact of the Revised Codes at the end of the nineteenth century, and secondly, legibility and vision research in the early part of the twentieth.

The 'Revised Code' was a set of recommendations made by the Newcastle Commission, which had been set up in 1858 to look at the provision of elementary education for all.⁶ Schools had to have an annual inspection, and children had to learn parts or all of their reading books so that they did not fail in front of the Inspectors (Altick, 1957). After 1862 many publishers began to produce series of books that were differentiated by content (as defined by the requirements of the Standard or 'reading age,' and was usually defined by the number of syllables in a word) and by visual attributes (those for the infant classes having larger type and more pictures

5 Schriver (1997) used the term 'rhetorical cluster' to identify groupings of verbal/pictorial elements that identify a particular graphic genre. She provides as examples 'body text with footnotes' and 'illustrations with annotations.' Such clusters in the bee spreads vary according to when they were published, though 'text and related, sometimes annotated, picture' could be defined as such in those books.

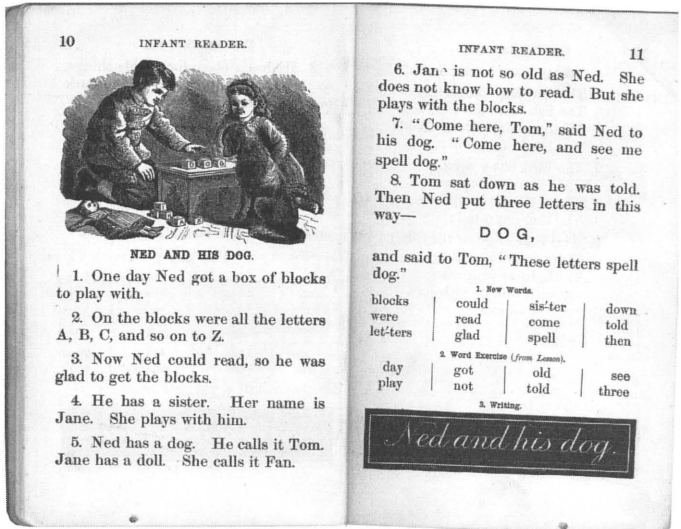
6 The most notable outcome of the Commissioner's report (1861) was that financial aid to schools should depend in part on attainment of pupils as measured by an inspector's examination in reading, writing and arithmetic. Robert Lowe, responsible for implementing the Commission's recommendations, devised the Revised Code (1862) which became known as 'payment by results' (Altick, 1957).

than those in the higher ones). In making books, printers and publishers responded to the directives in the Codes, for example, that books for younger children should comprise 80 pages of small octavo text; that two pages should be considered as the minimum for an effective reading lesson; and engravings, lists of words and names, and supplementary questions or exercises should not generally be taken into account in computing the contents of the books. As a result, and confirmed through the study of books in our database, primers for younger children were typically broken down into two- or three-page sections that contained a list of new words, a picture, a series of numbered paragraphs followed by a word exercise and some letters or words for writing practice (FIGURE 6).

figure 6.

Spread from The Queen infant reader, London: Nelson, 1880s, pp.10-11

This is a typical example of a reading book at the end of the nineteenth century, and it follows prescriptions defined by the 'Revised code.' Much of this book is made up of short sections often presented as double-page spreads. Each contained a picture, a title in capital letters, text broken down into numbered paragraphs, a listing of new words, a word or spelling exercise and a handwriting specimen.



There was fierce competition between educational publishers and a notable increase in the number of reading books produced. Publishers attracted their markets through different means: Longmans in their 'New Readers' used distinctive and rather eccentric typography to promote a 'look and say' approach to teaching reading; Macmillan's 'New Literary Readers' used a particular and consistent style of illustration and Collins' 'School Series' of Graphic Primers and Readers took advantage of new ways of printing in color.

Legibility and vision research undertaken at the beginning of the twentieth century contributed to the findings of a *Report on the influence of schoolbooks upon eyesight*, produced by the British Association for the Advancement of Science in 1913 (see Venezky, 1984). This *Report*, which included recommendations for typeface, type size and spacing for particular ages of children, was taken very seriously by publishers at the time. Although the *Report* provided illustrations that showed recommended typefaces and line spacing for particular ages of children, the feature that was to have the most impact was that of type size: 'the size of the type-face is the most important factor in the influence of books upon vision.' Many reading books in our database published between 1915 and 1925 were set in large sizes of type often without corresponding space between the lines, and certainly with rather less interlinear space than most designers would consider appropriate today. When combined with the widespread use of justified setting without word breaks it resulted in pages that appeared over-crowded with very uneven spacing between words that must surely have been difficult for children's reading (FIGURE 7).

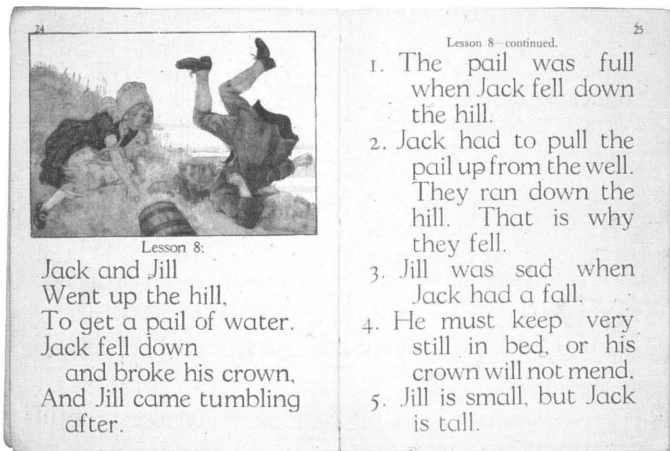


figure 7.

Spread from Book IA, "The songs the letters sing," London and Glasgow, UK: The Grant Educational Company [c1919-], pp. 24-25

An example of a book set in a large typeface where close line spacing and variable word spacing as a result of justified setting makes a page likely to have been difficult for children's readings.

A final example draws attention to the pervasive influence that typesetting and book design conventions can have on visual

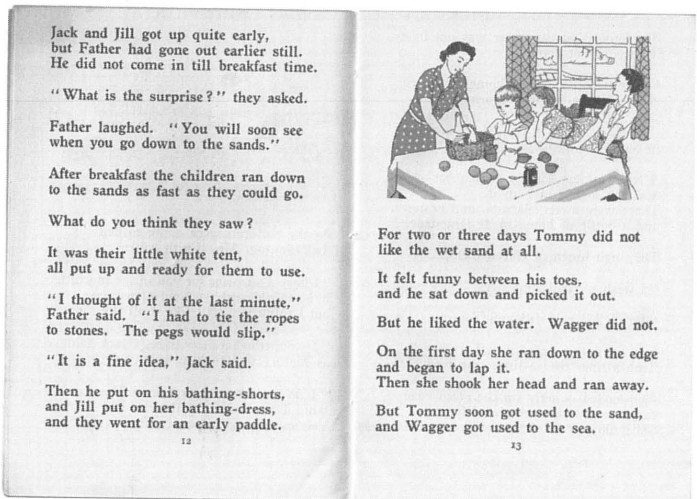
7 That children would benefit from word spaces wider than those used for adult reading was recommended both by typographers and psychologists. Dowding (1954, p.4) noted that: ". . . quite wide spacing is desirable between the words of a children's book." And Cyril Burt (1960, p. 253), in the context of close word spacing used by printing firms urged: "For younger children, I would suggest at least double this amount of spacing [this would have been a Monotype 'thin' space] and even for older children a 'thick space' should in my view be the maximum rather than the minimum."

organization, and suggests that any description of books for children's reading needs to take account of these. The recording of attributes of micro-typography: letter, word and line spacing and text alignment meant that we were able to confirm that typesetting conventions over-rode to a considerable extent recommendations in reports such as that mentioned above. Until the 1950s the most common recorded attribute for word spacing in the corpus was 'variable' resulting from the book design practice of justified setting. This convention was so firmly embedded that the resulting variation in word spacing was not thought to be unusual. In many reading books produced in the first two decades of the twentieth century the combination of large type sizes with justified lines resulted in extremely variable word spacing that significantly impaired horizontal cohesion within a line of type. In some cases this was further disrupted by additional space between letters as well as words. By the 1950s, however, ranged left setting was the norm and in many cases the space used was wider than what would have been used typesetting books for adults.⁷ Nevertheless, this 'variable' continued to be recorded in relation to books from these decades because in some case additional space was inserted at sentence ends (sometimes equivalent to three times the word space) (FIGURE 8).

figure 8.

Spread from Frances Roe, *At the seaside*, "Fundamental Reading D1." London, UK: University of London Press, 1944, pp.12-13

This example with ranged-left typesetting has wide spaces between words and additional word spacing at sentence ends.



The approach described above has been used to date to provide an account of the introduction of sanserif typefaces and the development of a more child-friendly approach to book design for children's reading (Walker, 2007); and to picture/text relationships and the meaningful use of color in children's information books in the latter part of the twentieth century (Robson, 2007).

The kind of close analysis that is afforded by the use of the checklist, such as that used here for children's books, remains unusual, yet it provides a way of looking at documents on a number of different levels—their broad structural make up to micro-spacing—which help us understand better how documents are used, and how they might be designed. With regard to children's books it has shown that design decisions are influenced by many external factors and that these determine what becomes conventional usage at a particular period of time.

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Tracing copyright holders for children's books is difficult, and I offer apologies to any copyright holders whose rights I may have infringed in good faith. The images are reproduced from books in my own collection or from the Lettering, Printing and Graphic Design Collections at the University of Reading. Specifically I would like to thank Althea Braithwaite, Dinosaur Publications for permission to reproduce a spread from *Bees make honey* shown in FIGURE 4; Ladybird Books for a spread from *Life of the honey-bee* shown in FIGURE 3 and Lutterworth (James Nisbet) for a spread from *Out and about* shown in FIGURE 5.

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