

READING DEVELOPMENT AND DIFFICULTIES

KATE CAIN

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Reading Development and Difficulties

KATE CAIN



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Preface

This book was born out my frustration to find a single up-to-date introductory text to serve as the set book when I first started teaching an advanced-level course on reading. I wanted a text that covered the development of both word reading *and* reading comprehension, as well as different types of reading difficulties, and that did not assume much background knowledge. None on the market matched my brief. That said, I would never have written the book I sought without the encouragement of Sarah Bird, formerly of Blackwell Publishing, and Yvonne Griffiths, my colleague and fellow reading researcher. I thank them both for getting me started. Thanks also to the different members of the team at Wiley, who assisted with different aspects of the production and who have been patient for so long: Andrew McAleer, Nicole Burnett, Elizabeth-Ann Johnston, Georgia King and Annie Rose.

Many others have helped on the way. Some with artistic talent produced original illustrations for this book. My thanks to Dean Chesher, who drew the 'What a nice day' and the 'Turtles' illustrations for Chapters 1 and 3, and Avril Walton, who produced the line drawings used in Chapter 4 and the 'Soup' cartoon for Chapter 9. Thanks also to Stephanie Guillaume, who put together the figure of 'Visual records of spoken language' in Chapter 1, and to Sue Smith, from The Adult College, Lancaster, who checked the BSL illustration used there.

The content, and also my thinking over the years, has been inspired by the work of so many outstanding researchers in the field, and in this book I have sought to cover a range of perspectives from different labs around the world. I extend the standard apologies for any errors in my representation or interpretation of anyone's work. There are several people who have clarified content and encouraged me along the way. In particular, I would like to thank Carsten Elbro for his advice and I am particularly indebted to Jane Oakhill for her insight and careful reading of just about everything. I am also grateful to the students and research assistants who read and commented from the perspective of the intended audience; in particular Stephanie Guillaume, Nicola Pooley, Macarena Silva and Susannah Trotter all deserve a mention, as do two anonymous reviewers and Martyn Barrett, series editor, who provided helpful comments on the whole book. Sorry if I have missed anyone.

Last, but by no means least, two Placks deserve a special mention: Jim, who bought me *Author Author!* and, in doing so, unwittingly gave me a most wonderful example of comprehension difficulty; and Chris, for being my constant.

Kate Cain, December 2009

To my parents,
who taught me how to read
and set in place a lifelong love of reading

Reading Development and Difficulties

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Contents

Preface	xi
1 Introduction to the study of reading	1
What is reading?	2
The relationship between written and spoken language	4
How to study reading development and reading difficulties	14
Overview of the rest of this book	20
<i>Key point summary</i>	20
<i>Further reading</i>	21
<i>Definitions</i>	22
2 Skilled word reading	25
Word reading: Assessment and sources of variation	26
Models of skilled word recognition	36
<i>Key point summary</i>	42
<i>Further reading</i>	43
<i>Definitions</i>	44
3 The skilled comprehender	47
What do we forget and what do we remember?	48
Local and global coherence	52
Models of text representation	59
<i>Key point summary</i>	63
<i>Further reading</i>	64
<i>Definitions</i>	64
4 Learning to read words	67
Ways to read words	68
Skills and knowledge that aid word reading development	74
Phases of word reading development	81
What drives word reading development?	85
<i>Key point summary</i>	91
<i>Further reading</i>	93
<i>Definitions</i>	93
5 The development of reading comprehension	95
The relations between word reading, listening comprehension and reading comprehension	96
Skills and knowledge that support reading comprehension	99

Reading comprehension development	112
<i>Key point summary</i>	117
<i>Further reading</i>	118
<i>Definitions</i>	118
6 Developmental dyslexia	121
Developmental dyslexia: Definitions and characteristics	122
Theories of dyslexia	126
A look at subtypes: Are all dyslexic children the same or do different types of dyslexic exist?	134
Dyslexia across the lifespan: Precursors, compensation and consequences	140
<i>Key point summary</i>	144
<i>Further reading</i>	145
<i>Definitions</i>	146
7 Reading comprehension difficulties	147
What is poor reading comprehension?	148
Sources of discourse comprehension failure	153
Causes of discourse comprehension failure	164
The consequences of poor discourse comprehension	166
<i>Key point summary</i>	168
<i>Further Reading</i>	169
<i>Definitions</i>	170
8 Instruction and intervention	171
Instruction and interventions for word reading	172
Instruction and interventions for reading comprehension	179
Support and instruction for reading development	185
<i>Key point summary</i>	188
<i>Further reading</i>	189
<i>Definitions</i>	190
9 The assessment of reading	191
Assessment matters	192
Word reading assessment: What, when and how?	196
The assessment of reading comprehension: What, when and how?	201
<i>Key point summary</i>	209
<i>Further reading</i>	210
<i>Definitions</i>	210
10 The Simple View of Reading: A framework for the study of reading development and reading difficulties	213
The Simple View of Reading: A brief overview	214
The Simple View of Reading and reading development	215
The Simple View of Reading and reading difficulties	218
The Simple View of Reading: An evaluation	219
Reading development and reading difficulties: Implications	220

Conclusions	221
<i>Further reading</i>	222
<i>Definition</i>	222
Bibliography	223
Glossary	247
Index	253

1 Introduction to the study of reading



KEY TERMS

written and spoken language

alphabetic writing system • logographic writing system • syllabic writing system

reading-age match design • longitudinal study • training study

CHAPTER OUTLINE

WHAT IS READING? 2

THE RELATIONSHIP BETWEEN WRITTEN AND SPOKEN LANGUAGE 4

What is unique about reading? 4

What challenges does the learner reader face? 8

Summary 14

HOW TO STUDY READING DEVELOPMENT AND READING DIFFICULTIES 14

How to measure reading 14

Experimental designs for the study of reading development and difficulties 15

Summary 20

OVERVIEW OF THE REST OF THIS BOOK 20

KEY POINT SUMMARY 20

FURTHER READING 21

DEFINITIONS 22

In today's world the ability to read is a valued and vital skill. People in the developed world are surrounded by print and it is difficult to imagine a life in which you did not interact with written text on a daily basis. We read environmental print (signs and advertisements) on the journey to school, college or work. We engage in occupational reading for work and informational reading for research and learning. We also read a wide range of material in our spare time, such as fiction and nonfiction, newspapers and magazines, and websites and articles on the Internet. Advances in technology mean that reading, in the form of e-mails and text messages, is now a primary means of social communication for many people. In developing countries, reading enables access to information about the essentials of everyday life, such as healthcare and agricultural techniques, as well as opening up educational and employment opportunities. Reading, in its many forms, plays a central role in our working and social lives.

WHAT IS READING?

Reading is clearly an important skill. In fact, reading is much more than a single skill: it involves the coordination of a range of abilities, strategies and knowledge. The number and type of factors that are involved in reading, and the impact each has on the process, can be hard for skilled adult readers to appreciate because, for us, reading is relatively effortless. It is an ability that we can quite easily take for granted. To examine what is involved in reading, consider the following short passage:

Henry and his younger sister Ruby were going to visit their great-aunt for tea. She was eighty-eight years old. When they stepped outside it was raining cats and dogs, so Henry fetched his brolly. First they walked to the bank and then to the florist's. Great-aunt Julia was particularly fond of alstroemeria.

To read and understand this passage, readers need to read and access the meanings of the individual words. They move their eyes across each line of text, stopping (or fixating) on individual words. Some words may be unfamiliar, which can disrupt understanding. For example, *alstroemeria* is a flower, commonly known as a Peruvian Lily, and *brolly* is British slang for an umbrella. Some words may not conform to common rules of pronunciation, which may cause difficulties for younger and poorer readers. In this text, *aunt* has an exceptional spelling-to-sound pattern: the letter string is pronounced differently than in other words that contain the same sequence of letters, such as *gaunt*, *flaunt* and *daunt*. *Great* is another word that might cause difficulties because the letter string 'eat' is not pronounced in the same way in all similarly spelled words, for example *meat*, *feat*, *wheat* and *cheat*. Other words may have more than one meaning. Take the word *bank*: are Henry and Ruby going to the river to feed the ducks? The correct meaning is chosen by considering the context.

Once the words have been read and their meanings selected, the reader needs to combine the words into meaningful **clauses** and **sentences**. The word string *It was raining cats and dogs* is a common idiom in British English. Idioms are multi-word

expressions that have a figurative meaning that is not a literal interpretation of the words. In this passage, the expression takes the idiomatic (or figurative) meaning: cats and dogs are not literally falling down from the sky, rather it is raining heavily. If the expression is unfamiliar, which might be the case for a younger reader or nonnative speaker, the figurative meaning cannot be retrieved from memory and the phrase will seem odd in the context of the text.

As well as making sense of individual sentences, the reader needs to integrate the ideas presented in successive sentences. *She* in sentence two can be linked back to the great-aunt. *She* does not refer back to Henry, who is male and would be referred to with the pronoun *he*; *she* is not Ruby, who is Henry's younger sister and therefore unlikely to be eighty-eight years old. The reader also needs to make sense of the text as a whole: why do Henry and Ruby go to the florist's? General knowledge about the convention of taking gifts when visiting elderly relatives for tea (as well as on other occasions) is used to make the inference necessary to understand Henry and Ruby's actions: they went to the florist's to purchase some flowers to give to their great-aunt. In addition, in British English the term *tea* can be used to indicate different things. These include: a cup of tea; a pot of tea with cake and sandwiches (afternoon tea); an early evening meal (high tea); and the main evening meal, which can also be called dinner or supper. In this text, the context does not make clear the meaning of *tea* (although my experience of great-aunts leads me to think that they will be enjoying cake and sandwiches).

This analysis of a simple five-sentence text illustrates that reading is a complex activity, one that involves a range of different skills, processes and types of knowledge. Researchers of reading investigate these and other factors to determine how children learn to read and why, for some children, reading breaks down. Given the complexity of reading, the challenge to understand how children learn to read and why some children fail to acquire adequate reading skills can, at times, appear daunting. However, an understanding of the reading process is considered (by some at least) to be ultimately rewarding. As Huey (Huey, 1968/1908) stated: 'to completely analyse what we do when we read, would almost be the acme of the psychologist's achievements, for it would be to describe many of the most intricate workings of the human mind.'

Because of the range of cognitive skills and processes and types of knowledge involved in reading, it can be useful to break the task of reading into manageable chunks. One way to conceptualise reading ability is to think about it as comprising two components. One component concerns word reading, the ability to translate the printed word into sound, which enables the retrieval of the word's meaning. The other component concerns comprehension skills, retrieving the sense of individual words, combining clauses to make sentences, and making meaning from successive sentences and paragraphs. This distinction between word reading and reading comprehension is recognised in a widely used conceptual framework of reading, the Simple View of Reading (Gough and Tunmer, 1986; Hoover and Gough, 1990), and has been used to structure this book. Skilled word reading and reading comprehension, and the development of each, are considered in separate chapters. Likewise, the reading difficulties experienced by children who have problems primarily with word reading and those who have problems primarily with reading comprehension are reviewed in different chapters.

THE RELATIONSHIP BETWEEN WRITTEN AND SPOKEN LANGUAGE

Before children are taught to read, they have developed spoken language skills that provide a foundation for the development of both word reading and reading comprehension. However, understanding a spoken word and accessing its meaning in the printed form are not the same thing: competence in a spoken language does not guarantee success in understanding printed text in the same language. It is important, therefore, to consider the relationship between written and spoken language. This relationship will inform how we approach reading instruction and the remediation of reading difficulties. What skills do we need to teach beginner readers? What skill, strategy or knowledge instruction will ameliorate the difficulties experienced by poor readers? Can we nurture 'reading' skills in pre-readers?

If reading is simply 'speech written down', then we need to teach children how to decode the printed word into its spoken form, but little else. Indeed, some reading researchers hold the view that as long as children are taught to read and access the meanings of individual words, comprehension will follow. An alternative view is that written and spoken language have little in common: they are two systems used to represent language that differ in several fundamental ways. If this were the case, then reading instruction would need to involve more than word reading skills. Perfetti (1985) labelled these two positions the 'commonality' and 'distinctiveness' views; as he observes, neither is an accurate description of the relation between written and spoken language.

What is unique about reading?

Print and speech are essentially different modes of communication that share a common linguistic foundation. A useful framework in which to compare the two modes is to consider how they differ in terms of two fundamental design features: the physical form of the signal and the social function of the message (Perfetti, 1985, 1994; see also Garton and Pratt, 1998). These two design features of print and speech lead, in turn, to a number of other differences, which are summarised in Figure 1.1.

The physical form of the signal

We use our eyes to read words on the page (or computer screen): print is visual¹ and is presented spatially on the page in front of us. In contrast, we use our ears to hear words that are spoken in real time: speech is aural and is presented temporally. These differences lead to another important distinction: print is permanent, whereas spoken language (unless recorded) is temporary. Readers have the opportunity to go back over the message if they have misunderstood or forgotten something, because the previous input is available; in contrast, listeners are reliant on what information is retained in memory.

¹ The obvious exception is Braille, a system of touch reading for the blind comprising raised symbols.

Written language	Spoken language
<i>The physical design of the signal</i>	
permanent	temporary
spatial	temporal
visual	aural
word boundaries	no word boundaries
punctuation	stress and intonation
can re-read	memory demands
<i>The social design of the message</i>	
topic is fixed in advance	topic can be negotiated
decontextualized	shared reference
formal register	informal register

Figure 1.1. Differences between written and spoken language

Source: Adapted from Garton and Pratt (1998) and Perfetti (1985).

Another difference between print and speech concerns the demarcation of individual words. In written language, word boundaries are clearly marked: there is a blank space between each word (unless flouted for literary effect by writers, for example ‘upturnpikepointandplace’ from *Finnegan’s Wake* by James Joyce). Spoken language rarely has silence between words: the words blend together. This is illustrated in Box 1.1: *Visual records of spoken language*. As a skilled language user, it is difficult to reflect on this feature of speech, but think back to an experience such as learning a new language in school. At the outset, it was probably much easier to recognise individual words printed on the page than in conversation with a native speaker or when listening to recorded dialogues, because the words in a stream of speech appeared indistinguishable.

A particular advantage of speech is that the speaker will usually accompany their message with nonlinguistic cues, such as hand gestures and facial expressions, and paralinguistic cues, such as stress and intonation. In print the author can use punctuation (the exclamation mark, comma and question mark) to achieve similar effects; italics, capitals and underlining are also options. But these features of written language do not convey emphasis, focus and meaning to the extent that the nonlinguistic accompaniments and paralinguistic features of speech can. That is one reason for authors including directions to describe how speech was delivered. For example, ‘“Well you will soon be better now,” said Anne *cheerfully*’; ‘“I think very differently,” answered Elizabeth *shortly*’ (from *Persuasion* by Jane Austen, italics added). And my new favourite: ‘“Oh right.” *Her voice contained such contempt* that Sandström closed his eyes’ (from *The Girl Who Played with Fire* by Stieg Larsson). These directions guide



BOX 1.1. VISUAL RECORDS OF SPOKEN LANGUAGE (INSPIRED BY WHITNEY, 1998)

There are many different ways to represent the spoken language visually, as depicted in this comparison. Different writing systems represent the spoken language in different ways, representing sound (alphabetic languages such as English, Greek or Japanese *kana*) or meaning (Chinese). Sign language is also a visual medium used by the hearing impaired. Braille, on the other hand, is essentially a tactile medium, although the raised dots (represented in bold here) can be represented visually as shown. The spectrogram, which is a recording of an English speaker saying this phrase, illustrates how speech does not follow the convention of breaks between words on the written page.

Spectrogram	
English	see you later
Phonetic alphabet	si: ju: 'leɪ.ər
Greek alphabet	Τ α λ έ μ ε
Japanese syllabary	じゃあ、また あとで。
Chinese syllabary	再見
English text	C U L8R
Braille	
British Sign Language	

the reader's interpretation. In speech, sarcasm is often conveyed by intonation, which can aid a listener's interpretation. In print, the reader must use the context alone to interpret the phrase appropriately (see Figure 1.2).

The social design of the message

Written language is generally used for different purposes to spoken language, and this has consequences for both the content and the form of the message. Speakers and writers make choices. Speech is generally interactive and conversational, so the choice

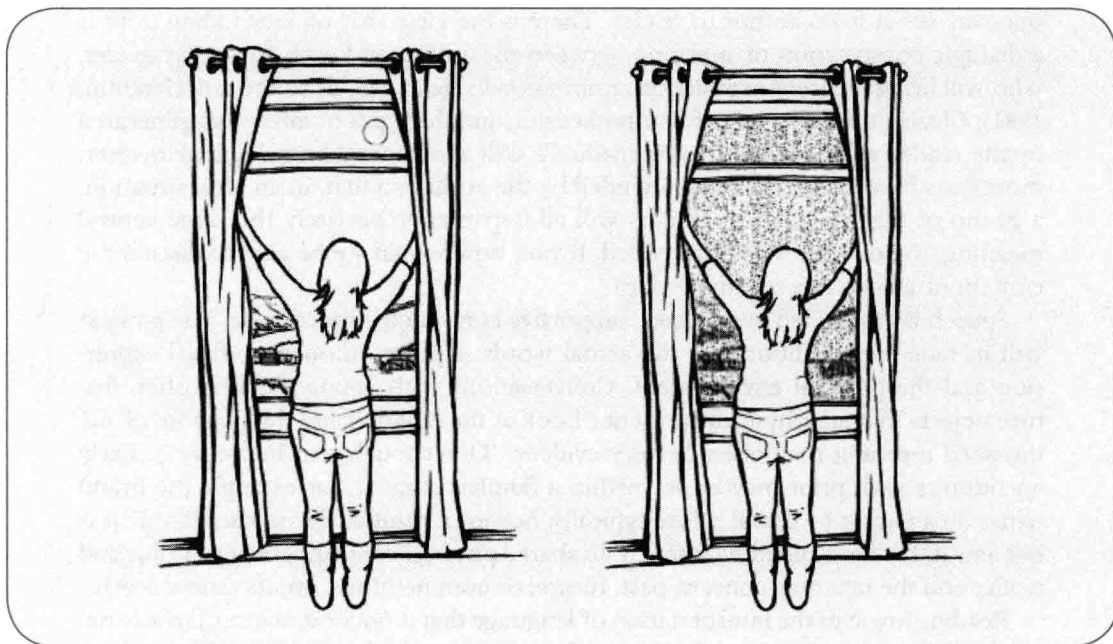


Figure 1.2. *What a nice day!*

about the topic of a conversation is something that is negotiated between conversational partners and often centres on a shared body of knowledge or common interest, such as your opinion of a recent movie or the recent success of your favourite football team (unless you are stuck with the self-centred ‘party bore’). In contrast, the author selects the topic of the written message in advance. In this respect a lecture, which is spoken, is much more similar to written text than to conversation.

Speakers and writers also make choices about the actual language used in each mode. We tend to use a different type of language (or register) in speech to that in print. Written language tends to be more formal than spoken language: much spoken language occurs in casual conversational settings. Obviously the register differs depending on context. You would choose a different style of clothes to wear when going out for a drink with friends from those you would wear to a job interview. Similarly, you would not use the same style and delivery of language when chatting about your degree course with friends and explaining to a potential employer how your studies make you the best candidate for the job.

The interactive context of speech-based communications contrasts with writing, in which the flow of information is from author to reader. As a result, sensitive speakers will adapt the level of detail and explanation depending on their audience (such as small child, adult or nonnative speaker) and listeners have the opportunity to ask for clarification if they do not understand. These options are not available to authors and readers. Some academics disagree with the conceptualisation of printed meaning as a