Preface

Five thousand years ago, Egyptian and Sumerian scholars designed the first full-fledged writing systems. Though these systems were radically different in form, with the Egyptians marking consonants and whole-word category clues, and the Sumerians marking syllables, both were complete and self-contained. Any name, any word, or any word yet to come could be immediately assigned the appropriate symbols representing that word's phonology.

Schools were established for the sons of the elite—the rulers, priests, administrators, and wealthy farmers, plus the obviously gifted—and not much changed in this regard until the nineteenth century, when the universal-education movement began gathering momentum. Up to this point, no one kept track of which children were more or less successful in mastering this extraordinary invention. But with children sorted by age, and every child in attendance, individual differences in learning rate and skill were hard to ignore. In many European countries, individual differences were minor, and when problems did occur, they affected reading fluency and reading comprehension. In English-speaking countries, by contrast, individual differences were enormous. Some children were learning to read quickly but others were not learning to read at all, despite years of teaching. And this applied across the board—to decoding, spelling, fluency, and comprehension. Was this due to the teaching method, the nature of the written code itself, or something inherent in the child?

Answering this question took most of the twentieth century, and now that the answers are in, there are some huge surprises. Reading and spelling are easy to teach if you know how to do it. Influential theories driving much of the research on the language-reading connection over the past 30

years are not supported by the data. Meanwhile, the volume of research has snowballed to such an extent that the quantity of studies has become unmanageable. The huge and formidable databases on almost every topic related to reading are an impediment to progress.

To get a sense of the actual size of these databases, and the quality of the studies in them, the National Reading Panel (NRP) decided to keep score. They reported that of the 1,072 studies carried out over the past 30 years on methods of reading instruction, only 75 studies met a preliminary screening consisting of these criteria: publication in a refereed journal, comparison of at least two methods, random selection of subjects into comparison groups, and statistical analysis sufficient to compute effect sizes (National Reading Panel, 2000). On further scrutiny, only 38 studies were found to be methodologically sound. It was the same story for each area of reading instruction. The NRP uncovered a whopping 19,000 papers on the theme that "reading a lot" helps children learn to read. (It does not, but only 14 studies survived the final screening to prove it.) The training studies on phoneme awareness, reading fluency, vocabulary instruction, and methods of teaching reading comprehension all suffered a similar fate.

I faced the identical problems when I set out to write a book intended to review the research on reading in the twentieth century. Trying to squeeze all this material into one volume, while adjudicating between reliable and unreliable studies for the reader, proved impossible. The result was two complementary, but independent, books. One book deals with the historical and scientific research on reading instruction per se, including a detailed analysis of the NRP report (*Early Reading Instruction*). This book, *Language Development and Learning to Read*, focuses mainly on reading predictors—whether or not individual differences in specific perceptual, linguistic, or cognitive skills influence children's ability to learn to read. The proof (or lack thereof) for many of the popular theories in this area of research lies outside the field, in the mainstream research on language development carried out by developmental psychologists, psycholinguists, and researchers in the speech and hearing sciences, and this adds another level of complexity to the mix.

The table of contents for *Early Reading Instruction* follows this preface. The two books are self-contained and don't have to be read in any partic-

ular order. However, they do reference one another whenever a greater exposition (or proof) of a statement or argument is provided in the other volume.

A pronunciation key is provided in the accompanying table. It should be noted that this key does not conform to the International Phonetic Alphabet. Instead, it represents the most common spelling in English for each phoneme. IPA is a particularly poor fit to the English spelling system compared to other European alphabets, which are more directly tied to the Latin sound-symbol code. As such, IPA is confusing to people unfamiliar with it. For example, IPA marks the sound "ah" with the letter a. In English, this letter typically stand for the sounds /a/ (*cat*) or /ae/ (*table*), while "ah" is marked with the letter o (*hot*), which is the symbol for the sound /oe/ in IPA. This muddle obtains for most vowel spellings.

A glossary of terms is provided at the end of the book. I encourage readers to use the glossary, because there are many technical and specialist terms in the book.

English Phonemes and Their Basic Code Spellings
Sounds are indicated by slash marks.

Consonants		
Sound	As in	Basic code spelling
/b/	*big*	b
/d/	*dog*	d
/f/	*fun*	f
/g/	*got*	g
/h/	*hot*	h
/j/	*job*	j
/k/	*kid*	k
/l/	*log*	l
/m/	*man*	m
/n/	*not*	n
/p/	*pig*	p
/r/	*red*	r
/s/	*sat*	s
/t/	*top*	t
/v/	*van*	v
/w/	*win*	w
/z/	*zip*	z

These consonant sounds are spelled with two letters.

/ch/	*chin*	ch
/ng/	*sing*	ng
/sh/	*shop*	sh
/th/	*thin*	th
/*th*/	*then*	th
/zh/	*vision*	—

These consonant combinations have special spellings.

/ks/	*tax*	x
/kw/	*quit*	qu

Vowels		
Sound	As in	Basic code spelling
/a/	*had*	a
/e/	*bed*	e
/i/	*hit*	i
/o/	*dog*	o
/aw/	*law*	aw
/u/	*but*	u
/ae/	*made*	a–e
/ee/	*see*	ee
/ie/	*time*	i–e
/oe/	*home*	o–e
/ue/	*cute*	u–e
/o͝o/	*look*	oo
/o͞o/	*soon*	oo
ou	*out*	ou
oi	*oil*	oi
Vowel + *r*		
/er/	*her*	er
/ah/–/er/	*far*	ar
/oe/–/er/	*for*	or
/e/–/er/	*hair*	air

There are nine vowel + *r* phonemes, and all but one (/er/) are diphthongs —*two* sounds elided that count as one vowel. Those listed above have special spellings and need to be specifically taught. The remainder use more conventional spellings and can be taught in the usual way, as two phonemes: /eer/ /ire/ /ure/ /oor/ /our/ as in *deer*, *fire*, *cure*, *poor*, *our*.