

outside the picture frame to the right (fixation number 148) and re-enters the picture at fixation 149 on a strut of the armrest of the rocking chair. The sequence of fixations continues in numerical order until it terminates on this page at fixation number 164. The dots represent the points of fixation, and the lines represent saccades (movements of the eye between fixations) during which no useful information is transmitted from the eye to the brain (Javal in Huey, 1908). Rashaun does not fixate the words *I*, *a*, *in* and *a* on this page.

Each of the six readers fixated between 65% and 91% of the words in the story. The number and percentage of words fixated are represented in Table 1.

While eye-movement research has consistently shown that readers do not fixate every word as they read (Rayner, 1981; Hogaboam & McConkie, 1984; O'Regan, 1979; Paulson, 2000), prior to conducting the study, I was unsure if this would hold true for the beginning readers in first grade. With the current emphasis on code-focused practices of instruction, I thought the children in the study might look at every word. Furthermore, all of the readers named "sound it out" as their primary reading strategy. If they relied exclusively on this strategy, they would be likely to fixate every word.

Rashaun, who exhibited the lowest percentage of words fixated, mentioned "sound it out" as his only reading strategy more frequently than any other reader. When asked

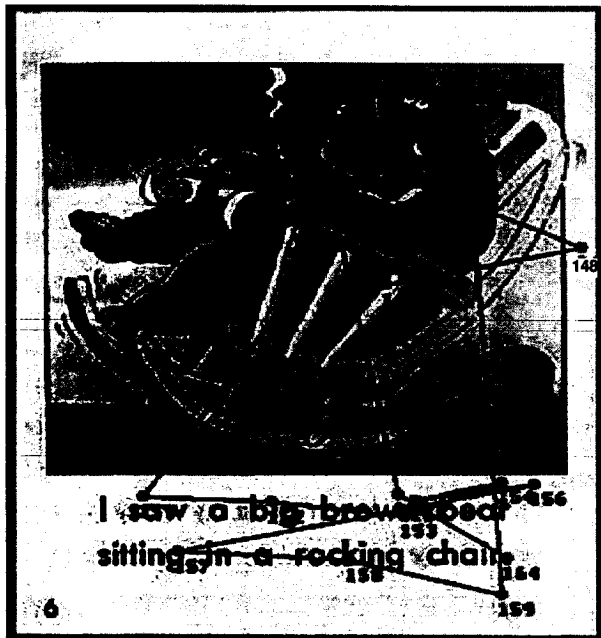


Figure 1. Readers do not look at (fixate) every word as they read.

Reader	# of Words Fixated	% of Words Fixated
Cory	50	91%
Esmeralda*	43	78%
Javier	39	73%
Kimberly	50	91%
Mac*	50	91%
Rashaun	37	67%
Average for All Readers	45 (of 55)	80%

\*bilingual reader

Table 1. Words Fixated in Complete Story

if he used pictures as a strategy, he said that he didn't need to, but sometimes he did look at the pictures. If he didn't fixate 35% of the words in the text, he was evidently relying on strategies beyond just "sound it out." But while he used additional strategies, he didn't mention them as part of his conscious repertoire.

## 2. Readers orally produced words that they did not fixate.

Table 2 shows that all of the readers in this study orally produced all of the words that they did not fixate. This was true 100% of the time. Perhaps this phenomenon indicates that beginning readers are only willing to not fixate words that they can predict with 100% accuracy. In any case, the finding is evidence of predictive processes in early reading development. Table 2 stands as major evidence against the concept of "word identification" or "word recognition," since either term implies that readers must look at each word in order to produce it orally. If readers don't look at a word, then by definition, they should not produce it orally. However, the data my readers generated refute this.

## 3. Readers did not fixate serially word by word from left to right 100% of the time (Paulson, 2000).

All of the readers in this study engaged in back-and-forth eye movements, up-and-down eye movements, and diagonal eye movements. Since no reader fixated every word and every reader engaged in the sort of eye movements described above, clearly not one reader in this study read any single page fixating serially word by word from left to right all of the time.

Figure 2 shows Mac's reading of page 4. He did fixate the first line of print and read it aloud but I am only showing the fixations on the second line to illustrate my point. By following the numbers in the fixation sequence, it