# A Reading Machine

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Original link

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One of the things that has long puzzled me is why children, who so incredibly pick up spoken language without formal instruction, encounter so much trouble when learning to read. Perhaps, I thought for a while, it is because there is a "language organ" that has specifically evolved to let them learn speech while reading has to be learned with more general portions of the brain. But the more I learn about neurology, the more ridiculous that seems.

In retrospect, the answer is rather obvious. Children learn a language because they are surrounded by it. It's unavoidable. Their world is full of people speaking it and the pattern matchers in their brains go to town, figuring out the structures underlying its grammar and associated its vocabulary with the other things they see around them.

It's impossible for there to be anything similar with words. Sure, some words appear in fairly regular positions (MEN on bathroom doors, perhaps) and children may learn to recognize them, but for the most part words are rather avoidable and their patterns hard to spot. How are children to draw a connection between the words in the newspaper and any sentences that they can understand? The only clues are the pictures and anyone who's read picturebooks to a kid knows that kids make valiant use of those few clues, but it's simply not enough to let them learn to read.

What's needed is a way to give children the additional clues they require, but at their own pace. An adult can read books but only reads linearly and soon gets bored of reading the same thing over and over again. (I've often thought that children were being stupid by reading the same things over and over and over again. Now I realize I'm the stupid one; it's the kids who are being smart. Only through repetition can your brain see the patterns!) It's very difficult for children to pick up a pattern under such conditions.

But devices never get tired, so I would propose a device. Here is what I imagine: Give the child an iPad with a special program for reading books. The program provides a selection of nice picture books with words in large type underneath. Switching pages can be done the usual way; kids seem pretty good at figuring out gestural interfaces. But the big innovation is simply this: when you touch a word, it turns red while the speakers say it out loud.

In this way, the child can have the machine read the book to them. Tap the words in sequence and the book pronounces them. If a word is somehow unclear, just tap it again. When you finish the page, just go to the next one. When you finish a book, read another, or start over.

Soon, I imagine, the child will make some basic associations. They will learn that tapping the word “the” makes the sound “thuh” and means “the”. They will no longer need to tap it every time to find this out — they can save time by saying it out loud themselves. Eventually, they can just say it in their heads.

Pretty quickly, more and more common words can be handled this way. Then the child begins noticing patterns between common words. All the words beginning with k have a kuh sound! With such patterns recognized, some words can be sounded out. Eventually, only strange words need to be tapped — the rest the child can read by themselves.

People who have not spent much time around children might claim such a device will make children lazy — why learn to read when a device will do it for them? But children are desperate to read; those who cannot will often try to memorize the shorter books their parents read to them so they can pretend to read those books themselves. This device would simply give them the tools they need. It would lead their brains to make the same associations that the software makes occur physically: point at this word, hear this sound. And there’s nothing are brains are better at than recognizing such simple patterns and being able to predict them in the future.

Perhaps this software already exists. If so, please tell me. If not, I’d like to work with someone to make it. Will it work? There’s only one way to find out, but I think it’s got a pretty good shot.