



Write My

World



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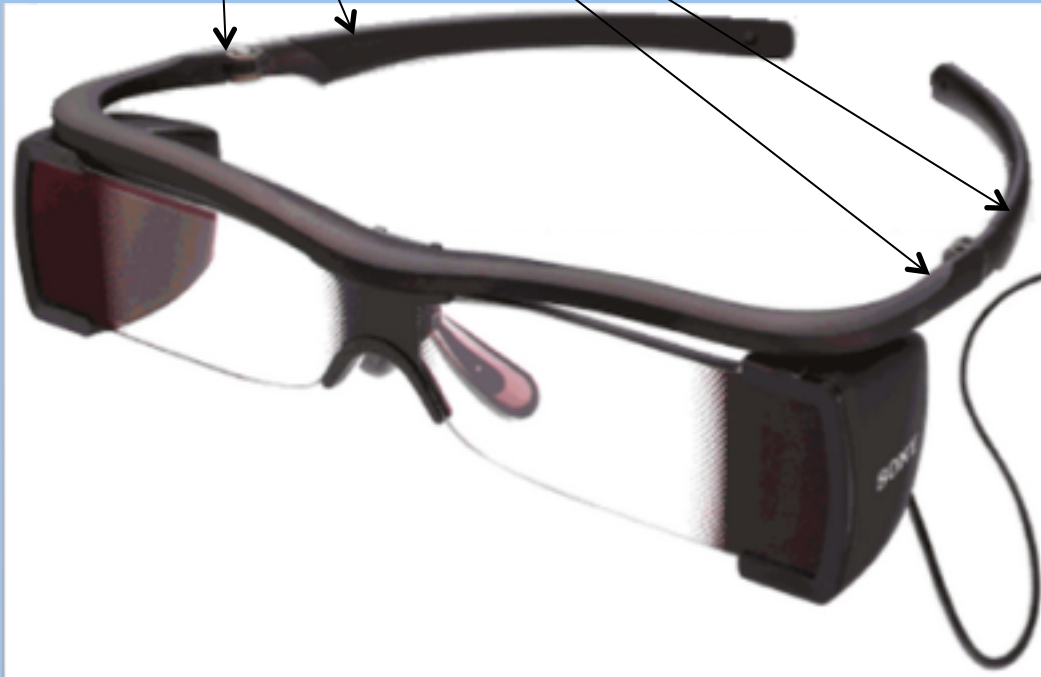
Janurary 31.2009 <http://agrotech.dk/en/projects/superman-has-x-ray-vision-what-about-us>





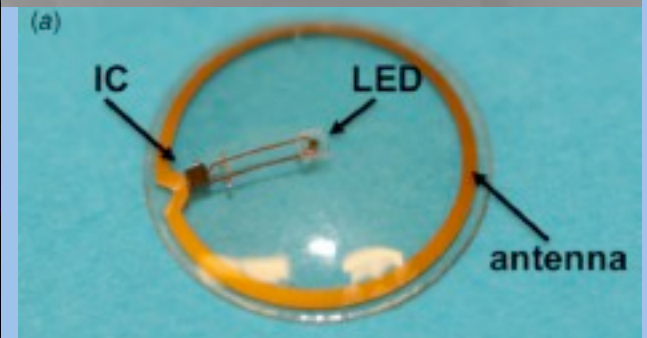
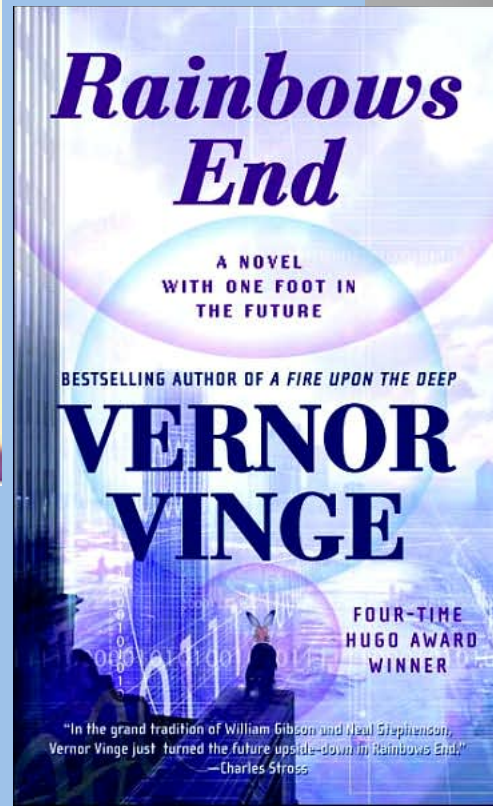
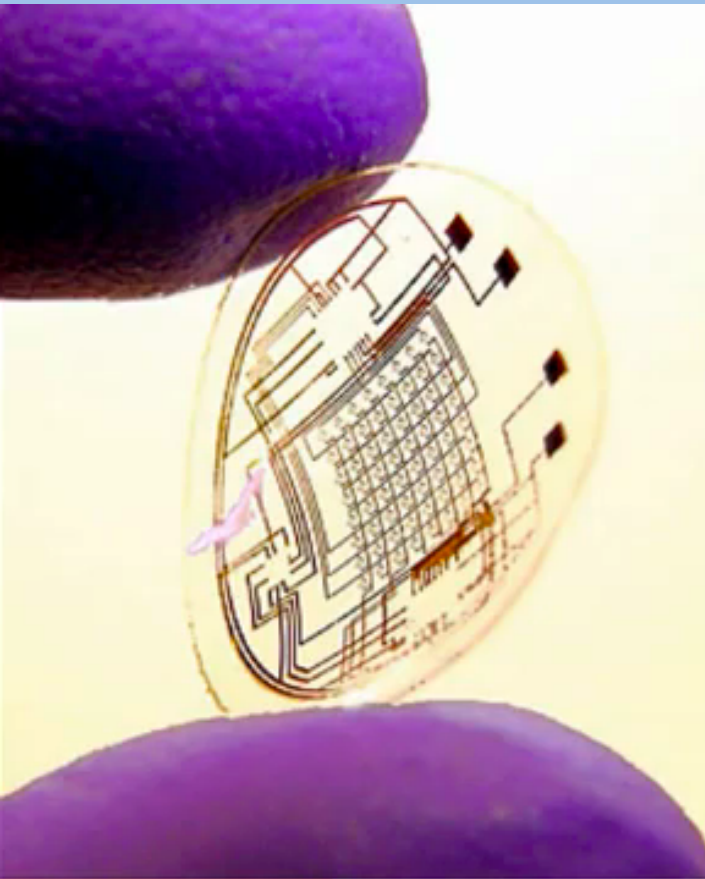


Microphones





# Augmented Reality on Contact Lens



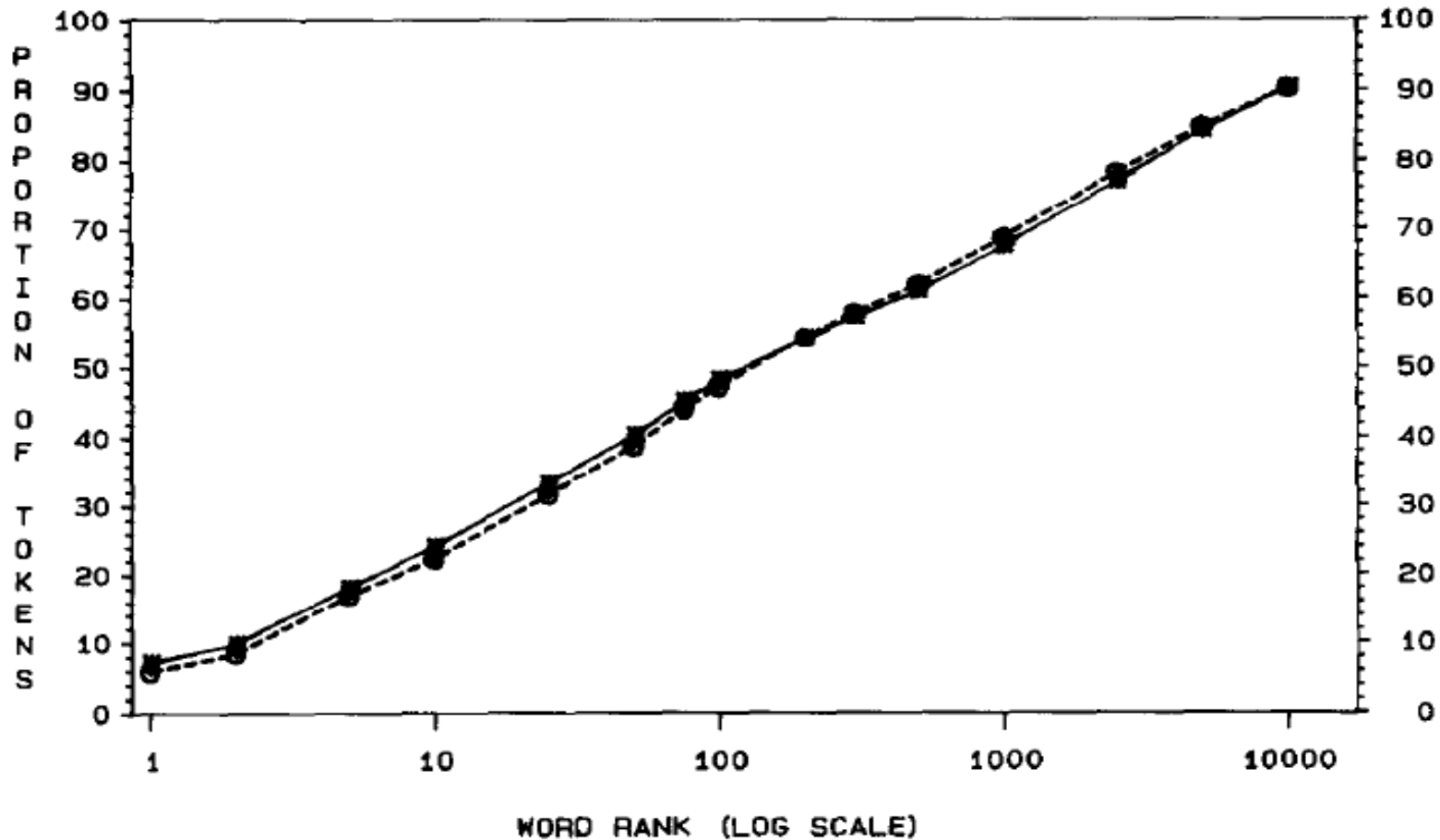
# Benefits of Early Reading

- Eliminate illiteracy
- Reduce Cost of Reading Instruction
- Advantages of Written Language
  - Richer Language
  - Richer Content



# Spoken vs Written Language

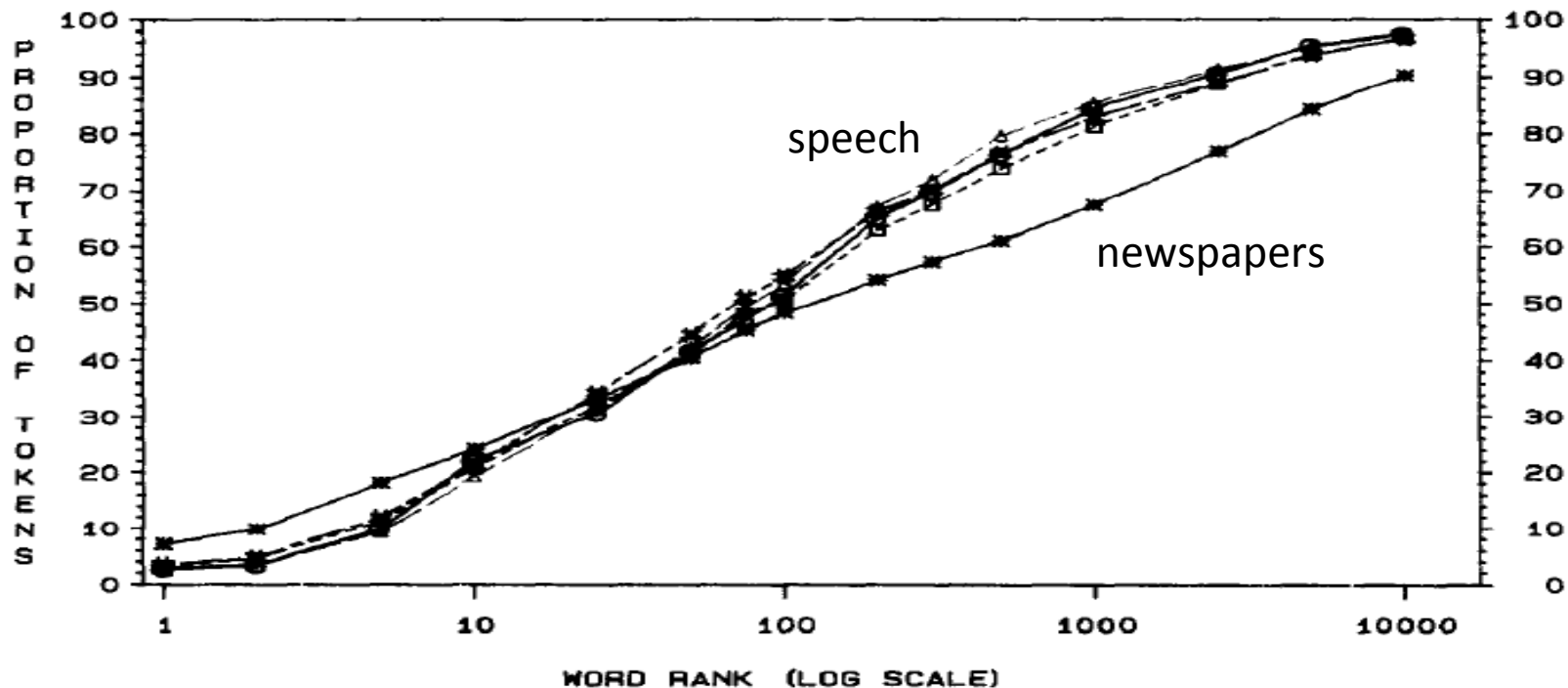
- Classic Study (Hayes, 1998)
  - collecting and analyzing language occurrences from printed texts, broadcasts, and conversations
  - words occurring in these contexts were evaluated against their frequency of occurrence in the American Heritage Dictionary (ADH) study
    - (AHD, Carroll, Davis, & Richman, 1971)
      - The AHD was the most comprehensive digital database of written and spoken language, with a corpus of over 5 million tokens (based on over 1000 samples, each with 500 or more words-in-complete sentences)
        - » American Heritage Dictionary (1971).
        - » <http://www.ahdictionary.com/>



**FIG. 1. Linear patterns of word choice: newspapers and popular magazines (cumulative proportions of tokens in texts). Star = newspapers; circle = popular magazines.**

Hayes, D. P. (1988). Speaking and Writing: Distinct Patterns of Word Choice. *Journal of Memory and Language*, 27, 572-585.

Hayes, D. P. and Ahrens, M. (1988). Vocabulary Simplification for Children: A Special Case of 'Motherese'? *Journal of Child Language*, 15, 395-410.



**FIG. 4. Nonlinear patterns of word choice: popular television shows and informal natural conversations (cumulative proportions of tokens in texts). Square = popular television shows; circle = adults speaking to children (newborn to 12 years); triangle = children (ages 4–12 years) speaking to parents; hatch = adults speaking to adults (college-educated); star = the linear pattern: newspapers.**

Hayes, D. P. (1988). Speaking and Writing: Distinct Patterns of Word Choice. *Journal of Memory and Language*, 27, 572-585.

Hayes, D. P. and Ahrens, M. (1988). Vocabulary Simplification for Children: A Special Case of 'Motherese'? *Journal of Child Language*, 15, 395-410.

# Speech Database

- The corpus consists of 64 conversations by 32 different
- Each mother had two conversations, one with an adult experiment facilitator (ADS) and the other with her infant (IDS)
  - database collected at the Institute for Learning and Brain Sciences (formerly the Center for Mind, Brain and Learning) at the University of Washington..



# Picture Book Database

- 117 popular picture books
  - Psyentific Mind, 2012
  - a picture reading application (Read With Me!)
    - <https://itunes.apple.com/us/app/read-with-me!/id494909666?mt=8>
  - the titles and authors of the books can be viewed at Psyentific Mind (2012)
  - <http://psyentificmind.com/wp-content/uploads/2012/06/ReadWithMeBookList.pdf>

# Speech and Reading Database

- 5,014 most frequently used words
  - 450-million word corpus evenly balanced between spoken and written English
    - The material is from unscripted radio and TV show, books of fiction, short stories, and movie scripts, and more than 100 popular magazines, 10 newspapers, and 100 academic journals
    - over 150,000 texts contributing to the complete database
    - The 5,014 most frequent words is therefore a robust measure of the most frequently used words in the English language.
      - from Corpus of Contemporary American English (COCA, <http://corpus.byu.edu/coca/>). This

Table 1. The number of tokens, number of types, and the number of word types not present in the 5014 most frequent words in the COCA (2012) database.

Corpus	# tokens	# types	Both	Number of Unique Types	Ratio Advantage of Picture Books
IDS	16,659	1,040 1039	5391	377	4.91
32 Books	15,539	2586 2524	6863	1849	
ADS	69,403	3,866 3923	8274	3260	1.44
Picture Books	57,137	5,362 5363	9715	4701	

COCA (2012). Corpus of Contemporary American English (COCA, <http://corpus.byu.edu/coca/>)

A small sample of words that occurred in the Picture Book Database but not in the Infant Directed Speech Database.

amazement	gathering	pathological
alphabet	gondola	perched
alligator	grumbled	ponderous
agapanthus	hoisting	requirement
beginning	improvising	reproachfully
bewildered	ladle	scrambled
blooming	learning	shepherd
business	lightning	squawking
caressed	mathematical	squelched
chorted	meticulous	struggling
concentrate	moaned	teaching
dragonflies	murmuring	thundered
education	nervously	trample
emergency	occasionally	vexatiously
fireworks	opera	versatile



Table 2. A comparison of 5 different reading measures of the readability of 32 picture books against an IDS database about equal in size.

Database	IDS Speech	Picture Books
Readability Formula	Grade	Grade
Flesch-Kincaid Grade Level	-0.1	2.5
Gunning-Fog Score	2.6	4.7
Coleman-Liau Index	5.8	7.9
SMOG Index	2.3	3.8
Automated Readability Index-1.3		1.7
<b>Average Grade Level</b>	<b>1.9</b>	<b>4.1</b>