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Learning to Read, Reading to Learn

“In the Beginning was the Word”

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Reading skill is based on three kinds of knowledge

A fluent reader must have knowledge of:

Language: word structure & meaning, grammar, discourse structure

Use: knowing how to approach the text, knowing what the text is for and what one's purpose is in using it

The world: background knowledge of the topic

The red elements involve vocabulary.

Orthography

Volunteer to read aloud
the following text

Aoccdrnig to rscheearch at Txes M&A Uinervtisy, it deosn't mttar in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a total mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe.

Syntax

“‘Twas brillig and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.”

(Jabberwocky by Lewis Carroll)

Make 4 questions.

What did the slithy toves do?

Where did they do it?

How did the borogoves feel?

What did the mome raths do?

Semantics: meaning and content

Potential ambiguity

1. John knew the boxer was angry when he started barking at him.
2. John knew the boxer was angry when he started yelling at him.
3. The boxer hit John because he started yelling at him.
4. The boxer hit John and he started yelling at him.
5. John hit the nail on the head with his answer.

In the beginning was the word...

Vocabulary knowledge is central to fluent reading
and reading is an important means for the development
of vocabulary knowledge.

Relationship between reading comprehension and vocabulary

L1 & L2 studies: Numerous research studies point to “the **strong** relationship between vocabulary and reading”. (Grabe)

E.g. Carver (in Grabe): the relationship (in L1 contexts) so **strong** → perfect correlations, evidenced in multiple sources of assessment data. “...it is fairly safe to claim that a **strong** and **reliable** relationship exists between vocabulary and reading comprehension.”

L2: Correlations between vocab & reading comp in TOEFL test data: $r=.88$ to $r=.94$ (Pike 1979); $r=.68$ to $r=.82$ (Qian 2002).

Pictograph to alphabet....to pictograph



What does it mean to 'know' a word?

Knowledge of form

Spoken form
Written form
Word parts

Knowledge of meaning

Form & meaning
Concepts & referents
Associations

Knowledge of use

Grammatical functions
Collocations
Constraints: Register, Frequency

(See Nation, P49, Table 2.1)

Knowledge of form

Spoken: recognition of a word when it's heard

ability to pronounce the word, including its stress

Written: spelling – strongly influenced by the phonological structure of the language. A strong link between spelling & reading – one influences the other.

Word parts: affixes & stems

“when we talk about knowing a word we should really be talking about knowing a word family.” (Nation P73)

Morphology

The study of morphemes and their arrangements in forming words.

sleep+ing *farm+er+s* *im-penetra-able* *un-believ-abl-y*

free morphemes (content): nouns, verbs, adjectives, prepositions

(function): prepositions, conjunctions, pronouns, determiners

bound morphemes:

inflectional affixes (suffix), e.g. -s', '-er', '-ing'

derivational affixes (suffix or prefix), '

Word families

A word family consists of a base form, its possible inflectional form, and the words derived from it by affixation.

build-builder-building-built

It has been proposed that there are 54,000 word families (Golden, Nation & Read, 1990)

The word family approach to word learning assumes semantic transparency, that is, that once the base word of the family has been learned the related forms will be easily understood. This is not always the case (Cobb, 2009).

The high frequency word families tend to be quite large as it appears that higher frequency stems generally can take a greater range of affixes than lower frequency words.

Word families

Write down all the members of this high frequency word family: **nation**

nations, national, nationally, nationwide, nationalism, nationalisms, internationalism, internationalisms, nationalisations, internationalisation, nationalist, nationalists, nationalistic, nationalistically, internationalist, internationalists, nationalise, nationalised, nationalising, nationalisation, nationalize, nationalized, nationalizing, nationalization, nationhood, nationhoods.

Preservation of morphological information in English

Knowledge of Meaning

Connecting form & meaning: e.g. *brunch* – it's possible to know the form & have the appropriate concept but not to connect the two. The strength of the connection will determine speed of retrieval.

Knowledge of meaning

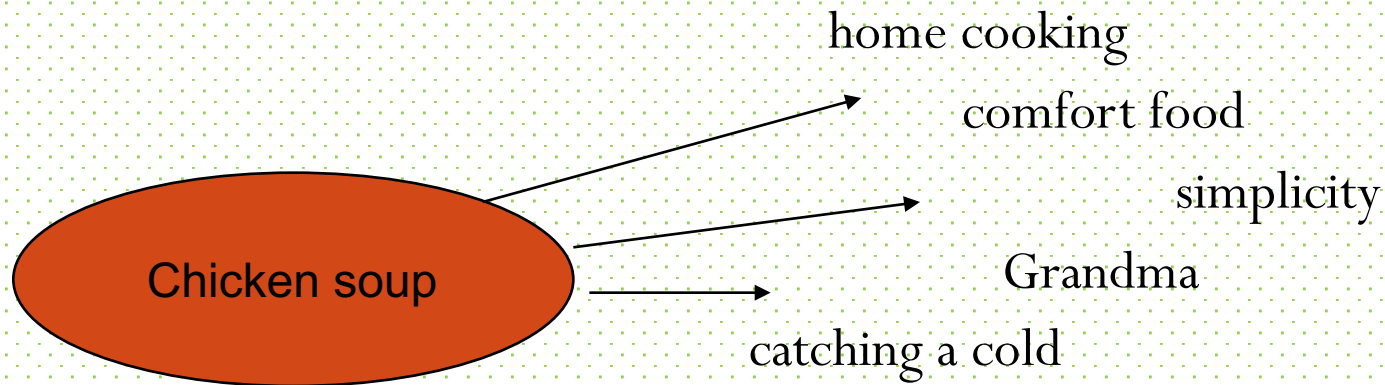
Concepts

comfort, simplicity, home cooking

Referents

chicken soup, Grandma

Conceptual associations and links



Sample Concept Map

Main Category

Animal

Subordinate Category

Insect

CHARACTERISTICS

Has no backbone.

Body has 3 parts.

Has 6 or more legs.

Many have wings.

Ants

Flies

Spiders

EXAMPLES

Knowledge of meaning: Associations

Links between words in the mental lexicon.

- Phonological (‘clang’) associates: words that sound similar
- Syntagmatic associates: words that appear together

Abandon

hope, ship, me

- Paradigmatic associates: words from the same class or category.

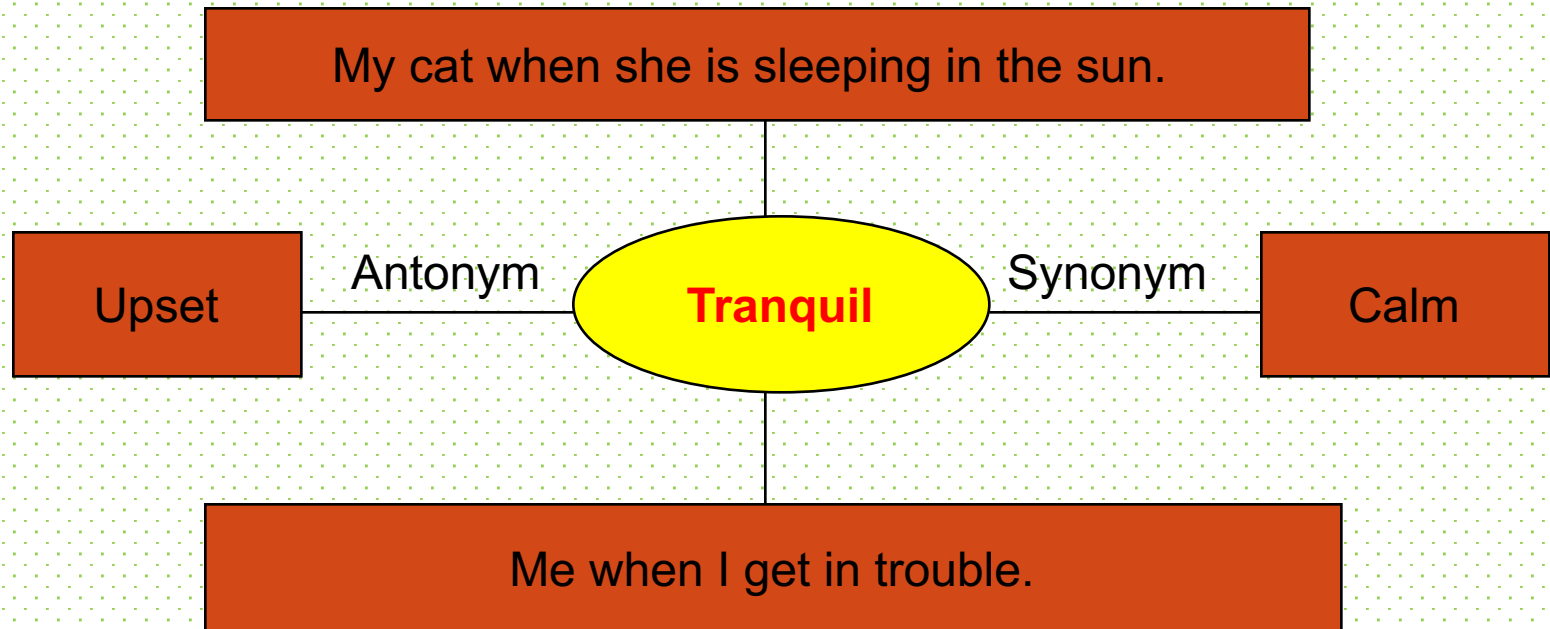
neglect, give up, forsake

+ antonyms, hyponyms

L1 stable L2 unstable.

Sample Word Map

Example



Non-example

Knowledge of use

Grammatical functions: as subject, object, complement, adverbial, etc

Collocations:

1. Grammatical/ syntactic collocations: a content word (noun, verb or adjective) followed by preposition:

1. *abide by, access to, deal with, fight back, etc.*

2. Semantic/lexical collocations: two content words (verb & noun, adjective & noun, etc)

1. *spend money, cheerful expression, strong tea*

Concordance for

as catch can. One of the most signs of the increasing
department meeting. It is just six, on the brass-faced
totally new. One of the most statements of this theme
Adoption as an institution is a success. The parents of
flamboyant, less brilliant, less than the actresses with
struggle to keep the twigs from the girl's face, emerged
been over-simplified. The most thing to me about this
insincerity and acting. The most thing about Summerhill
at this moment. Perhaps the most thing about the late
biology. In fact, one of the most things about the
for overseas revolutionaries or workers, all of which has
not only morally superior to your own bargain

...‘striking’

as catch can. One of the most **striking** signs of the increasing department meeting. It is just **striking** six, on the brass-faced totally new. One of the most **striking** statements of this theme Adoption as an institution is a **striking** success. The parents of flamboyant, less brilliant, less **striking** than the actresses with struggle to keep the twigs from **striking** the girl's face, emerged been over-simplified. The most **striking** thing to me about this insincerity and acting. The most **striking** thing about Summerhill at this moment. Perhaps the most **striking** thing about the late biology. In fact, one of the most **striking** things about the for overseas revolutionaries or **striking** workers, all of which has not only morally superior to **striking** your own bargain

Collocational appropriateness

a laugh a smoke an experience a trip

take

make

have

do

Collocational appropriateness

	a laugh	a smoke	an experience	a trip
take				✓
make				✓
have	✓	✓	✓	✓
do				✓

Inappropriate Collocation

His books commanded criticism from many people.

There was a high difference between the two teams.

He had been found guilty of some slight crimes.

She won many competitions, forming fame in the process.

I have a big headache.

Lexical phrases / MWEs

LEAST COMPLEXITY AND VARIATION

PROVERB: better late than never

IDIOM: bite the dust, shoot the breeze, spill the beans

INVARIABLE COLLOCATION / BINOMIALS: break a journey, whether or not, black & white

COLLOCATION WITH LIMITED CHOICE AT ONE POINT

take/have/be given precedence [over + noun phrase]

have/feel/experience a need [for + noun phrase]

COLLOCATION WITH LIMITED CHOICE AT TWO POINTS

as dark/black as night/coal/ink

get/have/receive a lesson/tuition/instruction [in noun phrase]

MULTI-WORD VERBS: put up with

SPEECH FORMULAE & LEXICAL BUNDLES: what's up, no worries, in the middle of

Multi-word expressions

Since formulaic language is ubiquitous, knowledge of MWEs might contribute significantly to reading comprehension.

(Martinez & Murphy 2002, in Kremmel, Brunfaut & Alderson 2015)

2011 study of 101 Brazilian EFL learners: comprehension decreased significantly when MWEs were present in text; also, students tended to overestimate how much they understood as a function of expressions that either went unnoticed or were misunderstood.

Kremmel et al “postulate phraseological knowledge as a latent variable that is not subordinate to either vocabulary or syntactic knowledge.

Kremmel, Brunfaut & Alderson 2015)

Knowledge of use: Register (constraint on use)

Stylistic variations in usage based on setting and participants. Words are marked for appropriacy of usage. Six kinds of register variation have been identified.

Temporal variation: changes over time

Geographical/dialectal variation: differences across regions and language dialects.

Trunk of the car (American Eng) Boot of the car (Aus/Brit English.)

Social class variation: working class versus middle class

Social role variation: boss and worker

Field of discourse: academic versus popular press; formal versus colloquial.

Mode of discourse: Spoken versus written

Schmitt, p 32-33

Knowledge of use: Frequency (constraint on use)

Frequency of occurrence is an important factor in how early and how well a given word is learned.

Most frequent words cover a disproportionately high percentage of total text.

Overuse of low-frequency words can lead to unnaturalness or incorrect use.

“Next morning after a late breakfast, wizard was sitting by open window of study. A bright fire was on hearth, but sun was warm, and wind was in south. Everything looked fresh, and new green of Spring was shimmering in fields and on tips of trees’ fingers.”

“Next morning after a late breakfast, the wizard was sitting by the open window of the study. A bright fire was on the hearth, but the sun was warm, and the wind was in the south. Everything looked fresh, and the new green of Spring was shimmering in the fields and on the tips of the trees’ fingers.”

Frequency

What are the 5
most common
English
words?

the	309497	in	100138
of	155044	that	67042
and	153801	I	64849
to	137056	it	61379
a	129928	was	54722

Word knowledge can also be characterised in terms of:

Breadth

Depth

Speed of access

To summarise:

Nation's word knowledge framework attempts to specify the different types of discrete knowledge a learner must acquire when learning a word.

Knowledge of form

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Written form
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(See Nation, P49, Table 2.1)

Vocabulary size and the law of diminishing returns

Nation 2006:70

TABLE 5

Cumulative percentage coverage figures for *Lady Chatterley's Lover* by the fourteen 1,000 word-families from the BNC, with and without proper nouns

Word list (1,000)	Coverage without proper nouns (%)	Coverage including proper nouns (%)
1	80.88	82.93
2	88.09	90.14
3	91.23	93.28
4	93.01	95.06
5	94.08	96.13
6	94.77	96.88
7	95.38	97.43
8	95.85	97.90
9	96.17	98.22
10	96.41	98.46
11	96.62	98.67
12	96.82	98.87
13	96.93	98.98
14	96.96	99.01
Not in the lists	97.92	100.00

**Some cognitive issues: attention,
noticing, and consciousness**

Polonius: What do you read my lord?

Hamlet: Words, words, words.

Polonius: What is the matter my lord?

Hamlet: Between who?

**Polonius: I mean, the matter you read, my
lord?**

Noticing & understanding

(R Schmidt, 1993)

Understanding without noticing:

NS: “It will take six weeks”

Perceived by NNS as “...six week”

Noticing without understanding:

NS: “It will take six weeks”

Perceived by NNS as “...six weeks”
but no idea why the –s morpheme
is used

BUT Empirically difficult to distinguish between noticing
and understanding.

Loschky & Harrington (2013)

the bridge to comprehension

Fluency: the ability to read rapidly with ease and accuracy

WORDS

FLUENCY

COMPREHENSION

Four core component skills of fluent reading

Automaticity

rapid, relatively resource-free processing not subject to interference and relatively hard to suppress; i.e allows readers to concentrate on the meaning of the text, textual context and background knowledge

“Fluent L1 readers can recognise *almost every word they encounter in a text* automatically”

Accuracy

access to a complete and accurate lexical entry

“Fluent L1 readers can read...with good comprehension and little hesitation due to the basic syntax or words they encounter”

Rapid overall reading rate for improved comprehension

maintaining ease of comprehension throughout text - requires a large recognition vocabulary (sight words), automatic basic syntactic processing + practice

Fluent L1 readers: 250-300 wpm / L2 readers: 80-120wpm

Recognition of prosodic phrasing and contours

e.g. pausing/chunking

Developing word recognition fluency in the L2

Fluency: fluidity, speed and accuracy

Learners must learn to identify the correct word for the context quickly and consistently.

Practice on L2 word recognition skill can increase speed and possibly comprehension.

Can be trained – rapid identification of words (e.g. flash cards)

Eye tracking

<https://www.youtube.com/watch?v=VFIZDZwdf-0>

Fixations

Saccades

Regressions

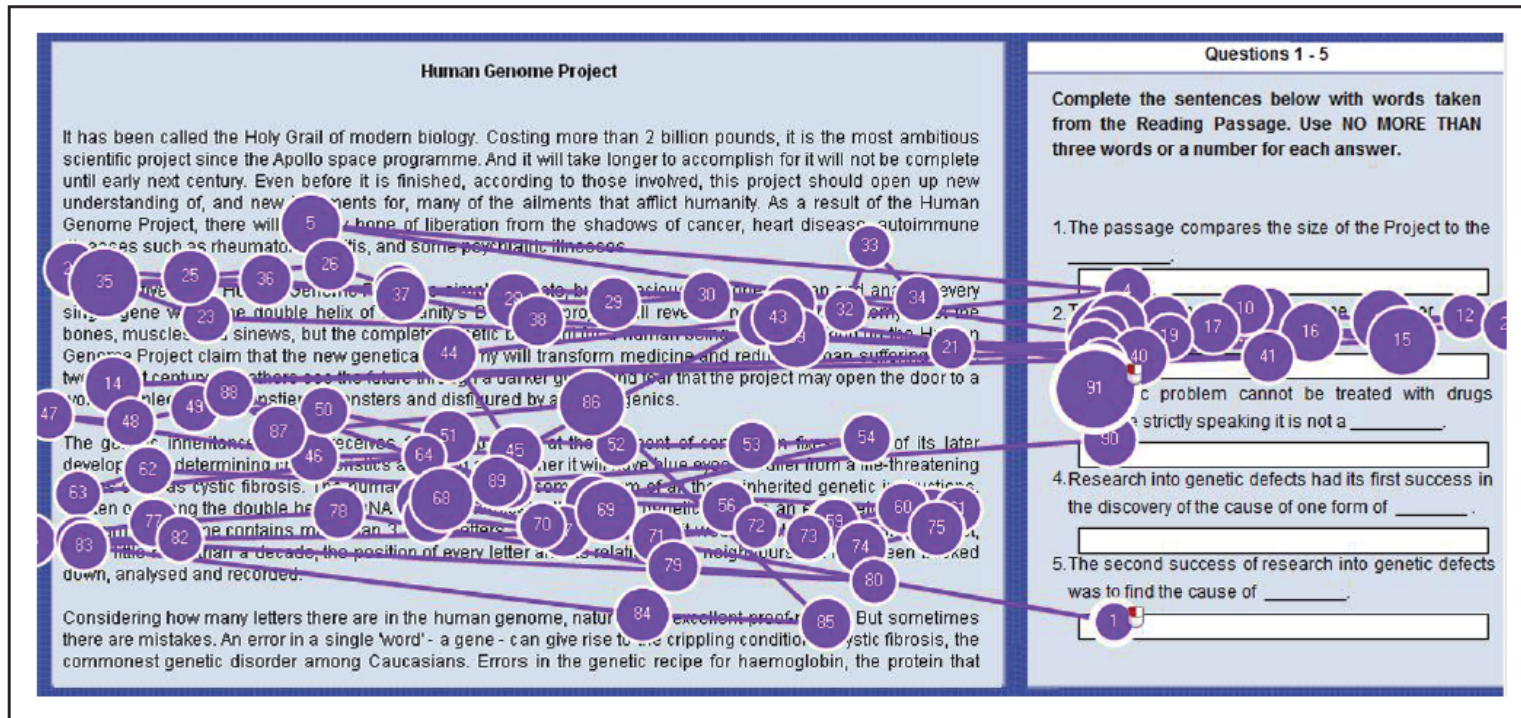
Gazeplot from students answering item 2 on lexical synonymy in a single sentence (25 secs)

Q: To write out the human genome on paper would require books.

Relevant sentence: It is an extremely long text, for the human genome contains more than 3 billion letters. On the printed page it would fill about 7,000 volumes.

Ref: Bax, S. 2013. Language Testing 30(4) 441-465

Eye tracking and student performance



Gazeplot output from successful candidate answering item 2 on lexical synonymy in a single sentence

Fixations, saccades, regressions

Ref: Bax, S. 2013. *Language Testing* 30(4) 441-465

Unsuccessful

Finish the questionnaire after each question.
Press CLOSE on the questionnaire to continue.

Human Genome Project

It has been called the Holy Grail of scientific project since the Apollo space programme. And it will take longer to accomplish than any other most ambitious project since the Apollo space programme. Even before it is finished, according to those involved, it will open up new understanding of, and new treatments for, many of the diseases that afflict humanity. As a result, the Human Genome Project will show how hereditary diseases such as arthritis, diabetes, and some forms of cancer can be treated with drugs.

It is simple to state, but audacious in scope: to determine the sequence of the human genome. The project will involve the sequencing of the human genome, which is the complete set of human DNA. The project will involve the sequencing of the human genome, which is the complete set of human DNA. The project will involve the sequencing of the human genome, which is the complete set of human DNA.

The genetic defects had its first success in the discovery of the cause of one form of ...

5. The second success of research into genetic defects was to find the cause of ...

END

Questions 1 - 5

Complete the sentences below with words taken from the Reading Passage. Use NO MORE THAN three words for a number for each answer.

1. The passage compares the size of the Project to the ...

2. ...

3. ...

4. ...

5. ...

Developing Fluency in Reading

100% familiar text, i.e. easy material (controlled vocabulary and syntax)

What does the learner need to do physically to become a more fluent reader?

- Shorter time on each fixation (0.2sec min time)
- Fewer saccadic jumps
- Fewer fixations – larger saccadic jumps
- Fewer regressions

“...I shall argue not only that reading is learned through reading but that learning to read begins with being read to.” (*Smith, F. 1978*)

Appropriate instruction with appropriate materials by the appropriate person
at the appropriate time

Extensive Reading

Reading becomes
its own reward

- Long term practice with extended reading = important gains in reading comprehension
- Increased vocabulary growth
- Improved spelling

er-central.com

“You learn nothing new ... of language...
but become good at what you already
know ... no unknown words, no unknown
grammar – everything is easy” (Nation)

Thank you.
s.heap@uq.edu.au

Refs:

- Grabe, W. 2009. Reading in a Second Language
- Hudson, T. 2007. Teaching Second Language Reading
- Lewis, M. 1997. Implementing the Lexical Approach
- Nation, I.S.P. 2001 Learning Vocabulary in Another Language
- Smith, F 1971. Understanding Reading