




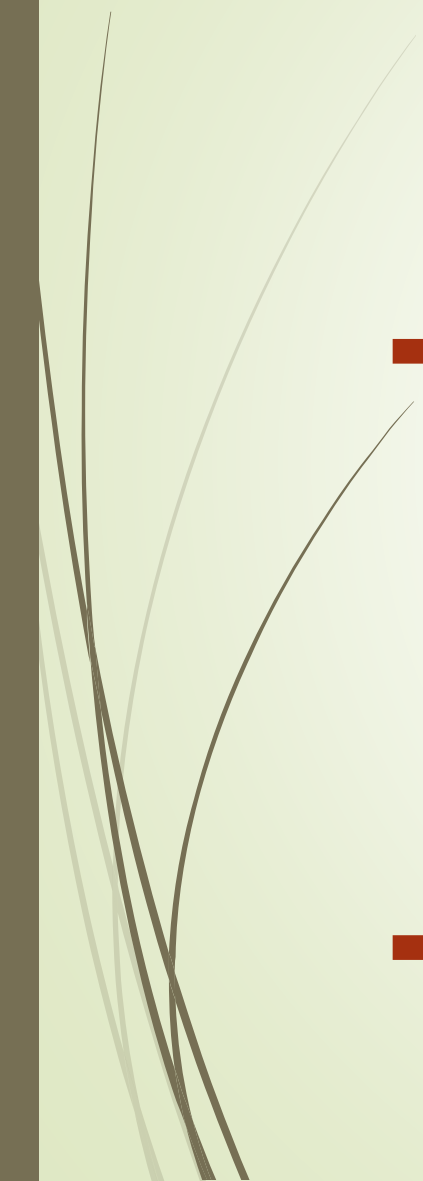
# Fine & Coarse Coding

By Mark Wynn



# My Interest

- ▶ In years of teaching vocabulary to second language students, I have found most vocabulary assessments to be little better than random. The only constant appears to be a particular student's familiarity with the particular target words.
- ▶ My observations are not atypical:
  - Many fail to look at words beyond the surface level.
  - They often become frustrated when a word use is rejected or causes confusion.
  - They often lack the skills (resources and metalanguage) to determine why the error occurred.

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- The problem is not likely with a failure of instructors extolling the need to view vocabulary comprehensively and partake in extensive reading.
  - The endless hordes of student notebooks filled with binary translations and the inescapable observation of students reflexively looking no further than an online translation suggest that the problem lies primarily in students' failure to absorb the message.
  - Here is where science can help.



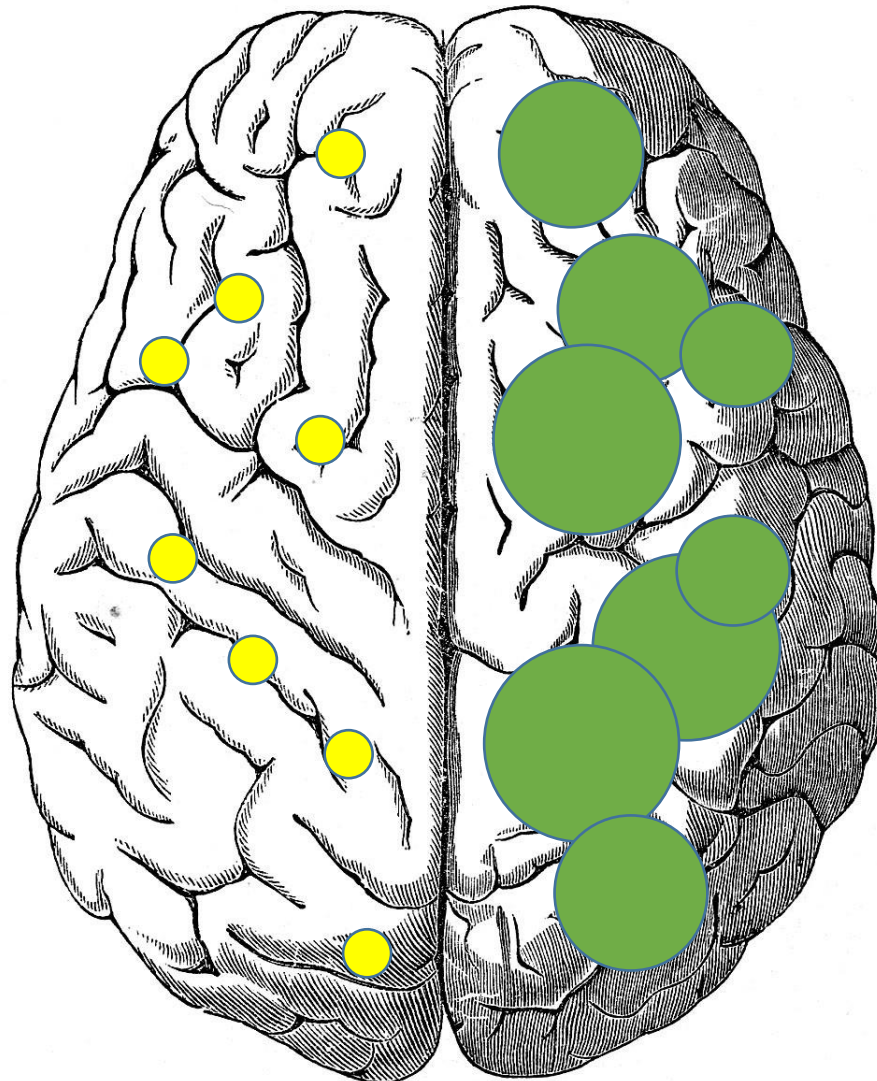
# Key Concepts

- ▶ **Cerebral Asymmetry:** the two hemispheres work independently **and** cooperatively.

If you think of your brain as two different types of engines, then you realize that it needs two different types of fuels.

- ▶ **Parallel Processing:** selecting the right word involves a great number of contextual clues; much of these clues are found in real world experiences and readings and **not** in dictionaries.

# VISUALIZATION OF FINE & COARSE CODING IN LEFT & RIGHT HEMISPHERES



# Contextual contra Abstract

Ian McGilchrist eloquently describes **Coarse Coding** as

“a symbol such as the **rose** [being] the focus or centre of an endless network of connotations which ramify through our physical and mental, personal and cultural, experience in life, literature and art: the strength of the symbol [being] in direct proportion to the power it has to convey an array of implicit meanings, which need to remain implicit to be powerful.”

And **Fine Coding** as something that can

“be exemplified by the **red traffic light**: its power lies in its use, and its use depends on a 1:1 mapping of the command ‘stop’ onto the colour red.”


(2009, p. 51)



# **FINE CODING** is the basis of Structural Grammar.

The \_\_\_\_\_ told the \_\_\_\_\_ to \_\_\_\_\_ly  
\_\_\_\_\_ a \_\_\_\_\_ in the \_\_\_\_\_.

In Structural Grammar, words are just slots to be filled in, and therefore appear to be simple one-dimensional objects that do not merit much attention.



**COARSE CODING** involves **all** the experiences that are associated with the word.

- It involves collocations: words that frequently appear with the word in question, including terms, phrases, and idioms.
- It involves extended senses: metaphors and analogies.
- It involves connections to synonyms and antonyms.

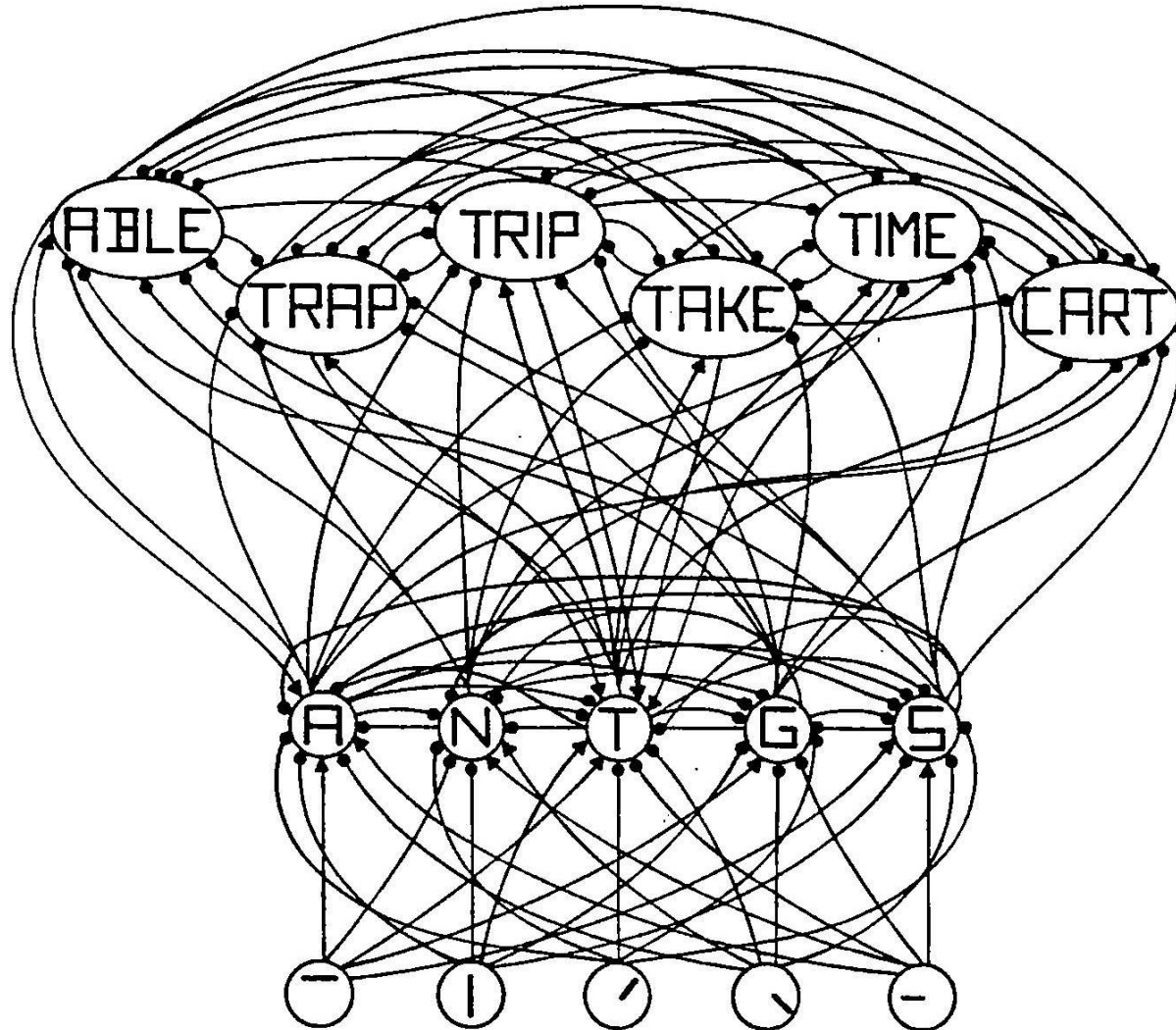
**COARSE CODING also**

- lasts longer (which provides later context)
- semantically overlaps (which strengthen synonyms)
- bridges gaps (which lead to inference).

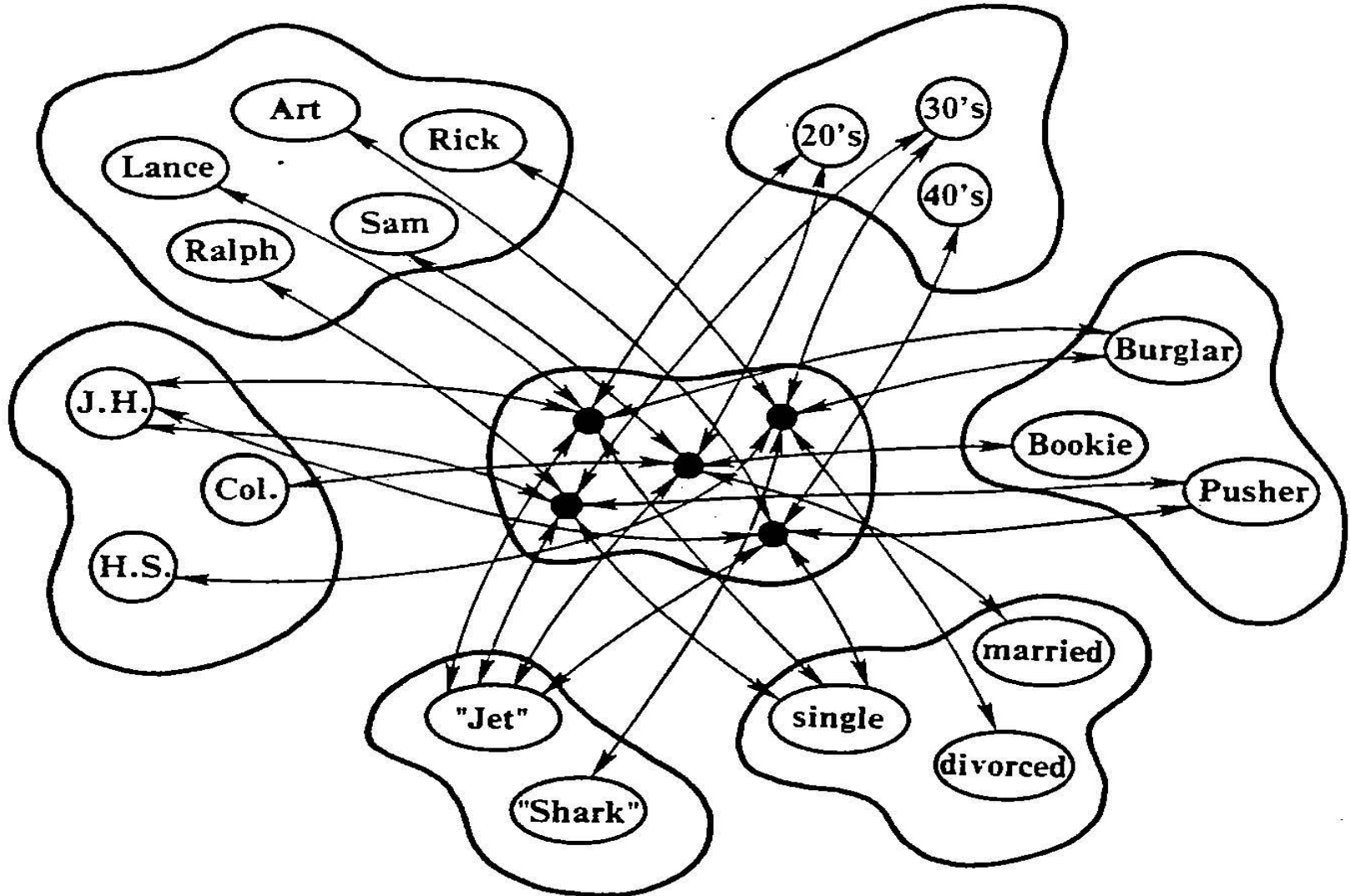
**MOST IMPORTANTLY,**

the right hemisphere **never** exhausts attention. In other words, it is **always** on, and it is **always** associating and making connections.

# Parallel Processing



# NAME & FACIAL RECOGNITION



# Native Speakers Would NOT Have to Read the entirety of this passage to pass.

The use of technology has both advanced and undermined the music industry. Because of sites like iTunes and Amazon.com, the **world-wide** 1. \_\_\_\_\_ of new music can happen almost instantly. However, since the first peer-to-peer file sharing website started, the music industry has also seen a dramatic rise in **copyright** 2. \_\_\_\_\_ over the Internet. The 3. \_\_\_\_\_ P2P networks use software that allows users to share files directly. The software itself is legal, but many of the files downloaded are really shared illegally. There are millions of illegally shared files every month and each one is a 4. \_\_\_\_\_ **violation**. The fact that these file-sharing sites are legal only adds to the legal 5. \_\_\_\_\_. Big music studios are **asking the government** to 6. \_\_\_\_\_ copyright law even more, although many admit that **current laws are difficult to** 7. \_\_\_\_\_. Although some musicians argue that illegal downloading 8. \_\_\_\_\_ **their rights** as artists, other musicians use the Internet to 9. \_\_\_\_\_ their music. Even though the two sides disagree, there is no arguing the fact that technology has led to the music **industry being more** 10. \_\_\_\_\_

# Quizzes are Collocatively Biased

Part II: Fill in the blanks with one of the vocabulary words below.

Each will only be used once. You don't need to change word forms. (1 point each)

---

copyright  
distribution

innovative  
violates

enforce  
promote

infringement  
restrict

gray areas  
democratized

world-wide \_\_\_\_\_

copyright \_\_\_\_\_

\_\_\_\_\_ violation

legal \_\_\_\_\_

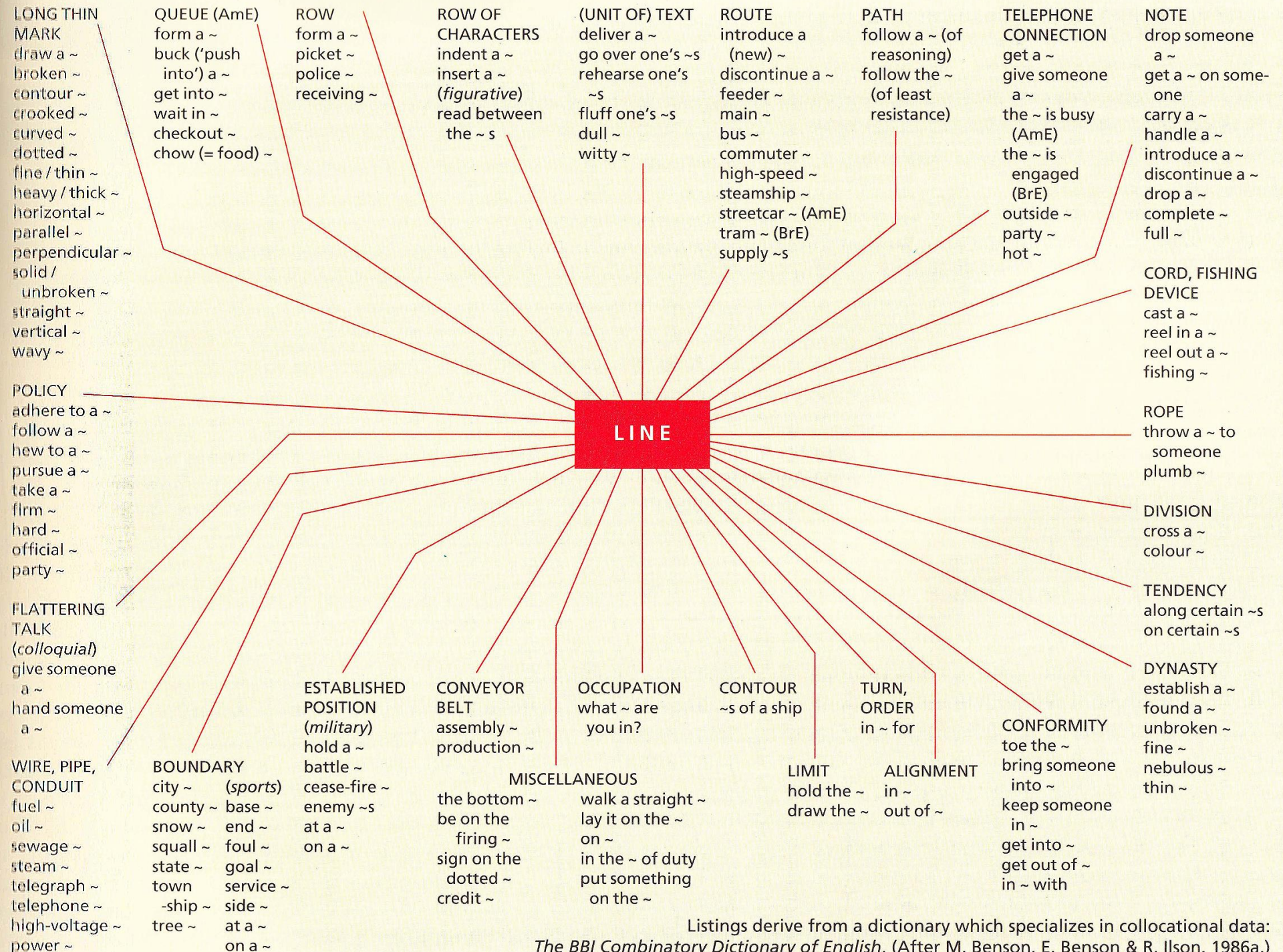
asking the government to \_\_\_\_\_ copyright laws even more

current laws are difficult to \_\_\_\_\_

\_\_\_\_\_ their rights

industry being more \_\_\_\_\_

**LINE**



Listings derive from a dictionary which specializes in collocational data: *The BBI Combinatory Dictionary of English*. (After M. Benson, E. Benson & R. Ilson, 1986a.)

**TABLE 3.1     A SEMANTIC FEATURE ANALYSIS**

	making a pleasant impression on the senses	close to an ideal	suggesting relative smallness	suggesting femininity or delicacy	arousing interest
beautiful	X	X			
pretty	X		X	X	
attractive	X				X

Adapted from Gairns and Redman (1986).

Even this abbreviated analysis of the semantic features shows that we can to some extent become more precise about the meaning of a word. **These three words—*beautiful*, *pretty*, *attractive*—are not synonyms.** Such an analysis, modified for the sake of comprehension, may assist ESL/EFL students who ask about the differences among words in a semantic field. **Still, even this level of precision is not very satisfying.** While such an analysis can assist us in being able to detect differences among these items, it should also be clear that **this type of discrete feature analysis can also be misleading.** For one thing, we may not agree on the exact defining features of a word. For another, it may be impossible to pin down all the semantic nuances of a word in sufficient detail. Leech (1981) suggests that most words have “fuzzy” meanings.

A Semantic Network  
for what in *Plain English* is:

# Work Together

**CO-  
CON-  
COM-** *together  
with  
mutually  
in  
common*

**COMPETE**  
*petere*  
*Seek / Fall Upon  
Together*

**CO-OPERATE**  
*operari*  
*Work / Effort  
Together*

**COLLABORATE**  
*labore*  
*Labor / Toil  
Together*

**CONSPIRE**  
*spirare*  
*BREATH  
Together*

**COLLUDE**  
*ludere*  
*PLAY  
Together*

**CONNIVE**  
*nictare*  
*WINK  
Turn a blind eye to*

**COERCE**  
*arcere*  
*Hold / Confine*

**MANNER**

willing

emphasized sense

YES & NO  
unidirectional

creative/artistic

emphasized sense

mischievous

secretive

NO & YES

emphasized sense

deceptive

NO & YES

emphasized sense

**INTENT**

harmful goal

NO & YES

common benefit

YES & NO

mutual benefit

mutual benefit

**ARGUMENT**

work/project

YES & NO

effect/purpose

NO & YES

External Conceptual  
Network Triggers

**COLLIGATIONS**

with someone  
in purpose  
for goal or object

with someone  
on project  
in purpose

with someone  
on project  
in purpose

with someone  
against someone  
to purpose

with someone  
in purpose

with someone  
to verbal purpose  
at nominal purpose

TRANSITIVITY SHIFT  
TO UNRECIPICOL  
to verbal purpose  
into nominal purpose

**WORD FORMS**

competition  
competitive  
competitor  
uncompetitive

cooperative  
uncooperative  
cooperation

collaborative  
collaboration  
collaborator

conspiracy  
conspirator  
co-conspirator  
conspiratorial

collusion  
colluding

conniving

coercion  
coercive  
coercer




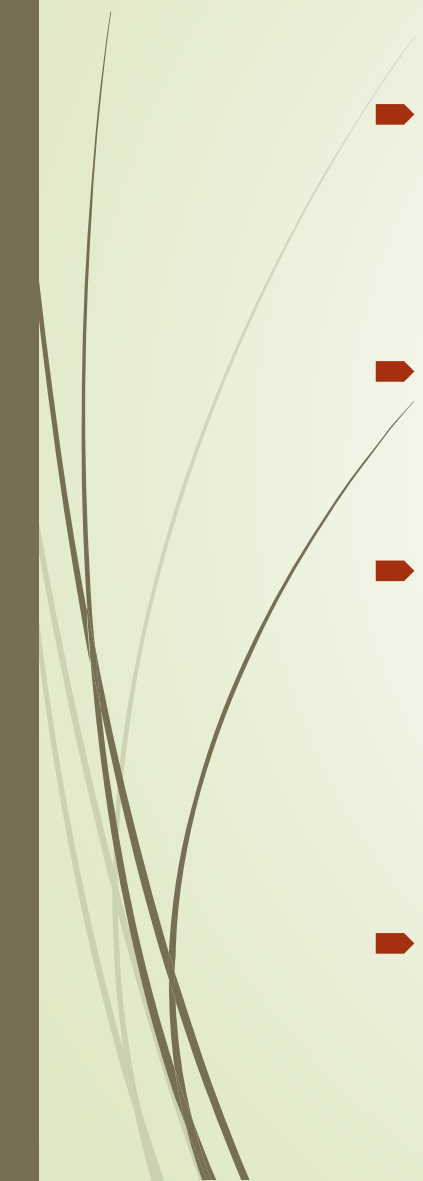
# What this helps explain

- ▶ Why language learners need to understand that vocabulary is a comprehensive and complimentary set of skills and **not** fill-in-the-blank-models of previous theories that leave students acquiring vocabulary superficially and mechanically.
- ▶ In order to build up coarsely-coded lexicons, students will **need** to expose themselves to more and more language in context.
- ▶ The only way to do this is immersion in conversation and reading. Rich vocabularies can **not** be built by teasing together a great number of fine codings.



# How I Teach These Concepts

- Within the first few weeks of nearly every course, I dedicate a whole class to one lecture which can include a series of activities that draw their attention to **five** essential features of vocabulary.
- I teach these as **conceptual handles** that will help built lexical networks.

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- **Historical Orthography and Etymology:** the lesson being that our spelling system reflects historical quirks that lend greater understanding to word families **and** interesting features that assist recall.
  - **Connotation:** the lesson being that they exist and, not being denotative, are rarely in dictionaries **and** that they are the main reason why tutors and teachers can't precisely explain why that word just isn't right.
  - **Translation is subjective:** the lesson being that due to coarse coding semantic equivalents do **not** map precisely across languages.
  - **Word forms and Collocation:** the lesson here being the three-dimensionality of words to emphasize how word form errors **are** grammar errors, but also that colligation and collocations are part of a word's map. This lesson merits significant emphasis for logographic language users.
  - **Spaced Repetition:** the lesson being that creating the conceptual maps needed to fully acquire a word involves usage, repetition, and strategic memorization.

# Can you sort the following words into positive and negative pairs?



+

-

perspire	scrawny
motive	challenging
confident	fired
old	cowardly
prudent	fat
mixed-breed	warmonger
dove	sweat
thin	career
portly	inquisitive
terminated	cocky
nosey	elderly
hawk	motivation
job	pacifist
difficult	mutt

# The Right Word

**Right**  
Answer

It's all  
**right**

It's **right**  
there

**Right**  
& Wrong

**Go**  
**Right**  
to the front

**Right**  
angle

**Right**  
**Side**

**Lado**  
**Derech**  
**o**

**Right**  
to **Vote**

**Derecho**  
al  
**votar**

**The**  
**right**  
**wing**

**Los de**  
**la**  
**derecha**

Respuesta  
**Correcta**

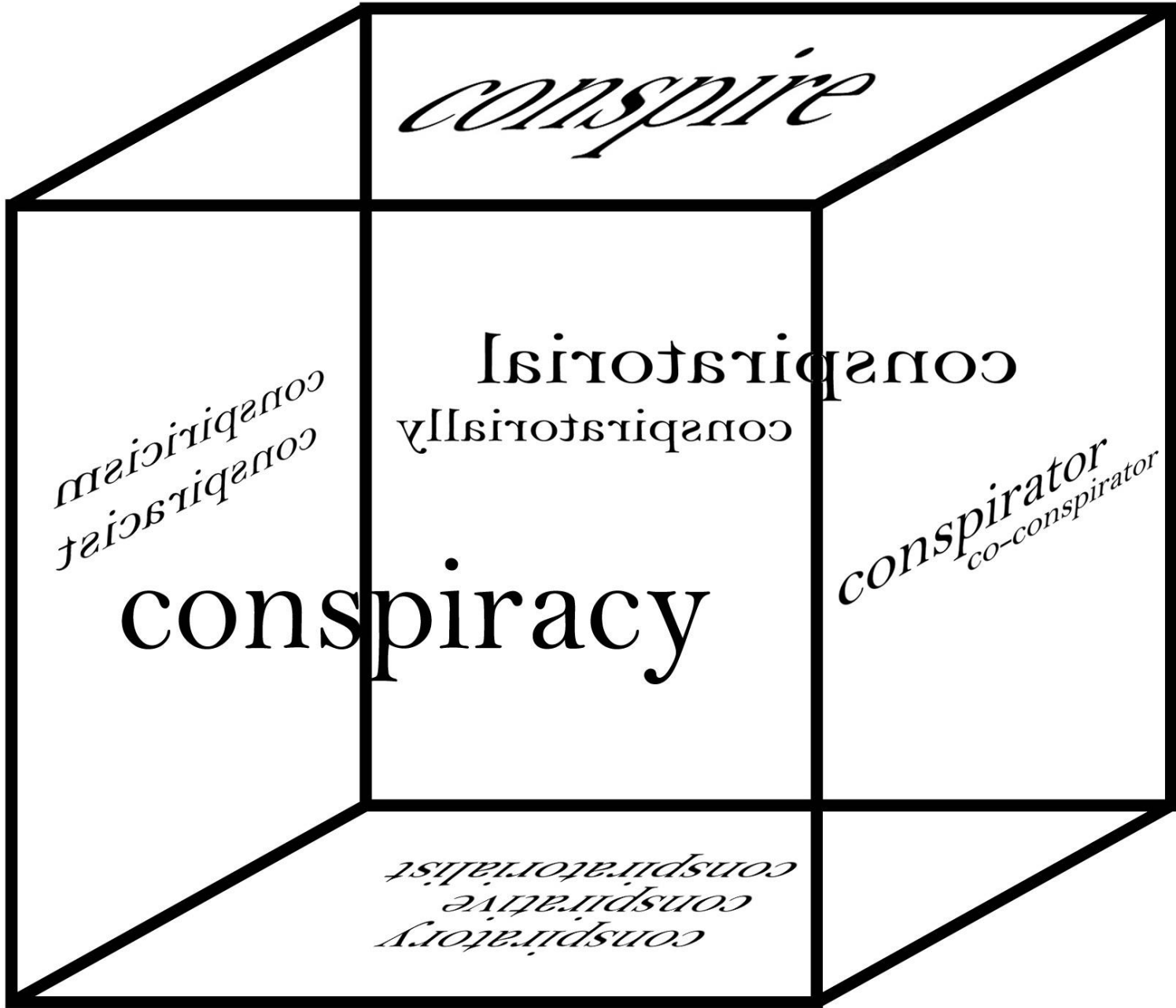
Esta  
bien

Esta **justo**  
alli

**Bien**  
y **Mal**

Vayase  
**directo**  
al frente

Angulo  
**recto**



*conspire*

*conspirator*  
*conspirator*

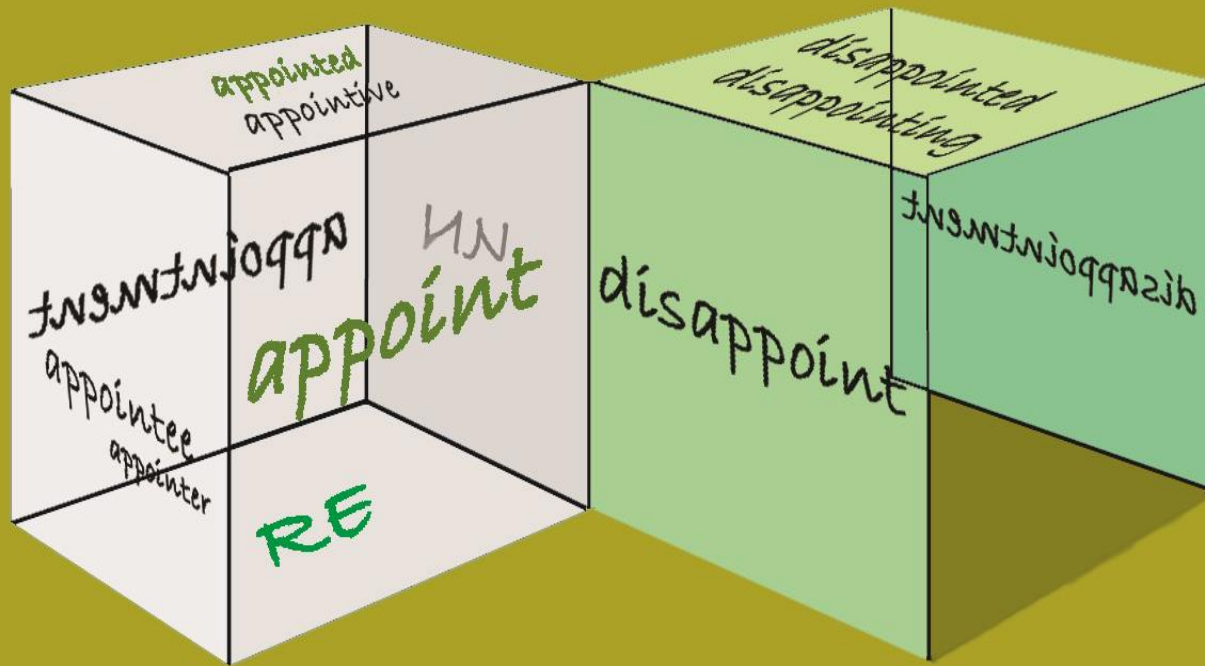
conspiracy

conspiratorially  
conspiratorially

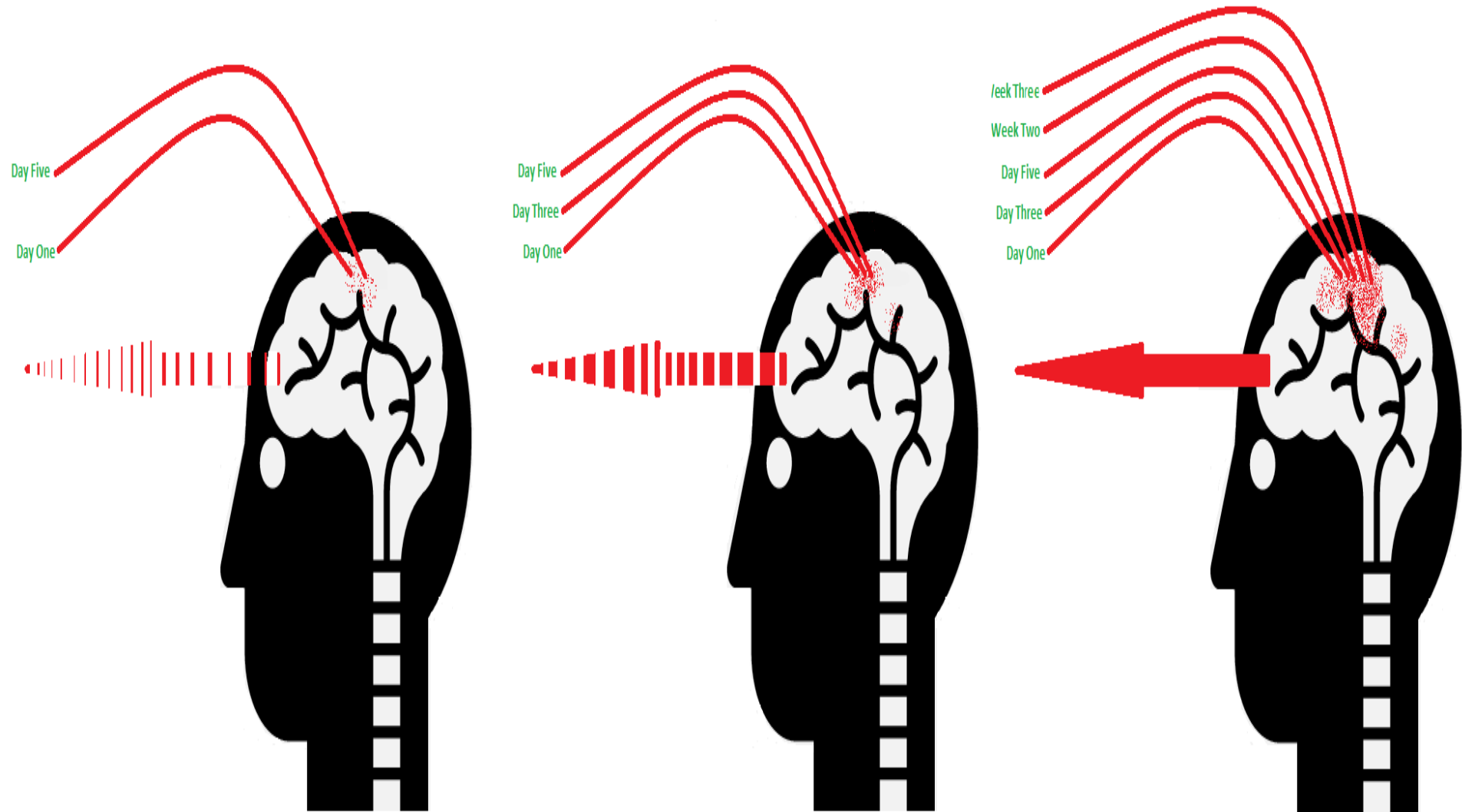
*conspirator*  
*co-conspirator*

*conspiratory*  
*conspirative*  
*conspiratorialist*

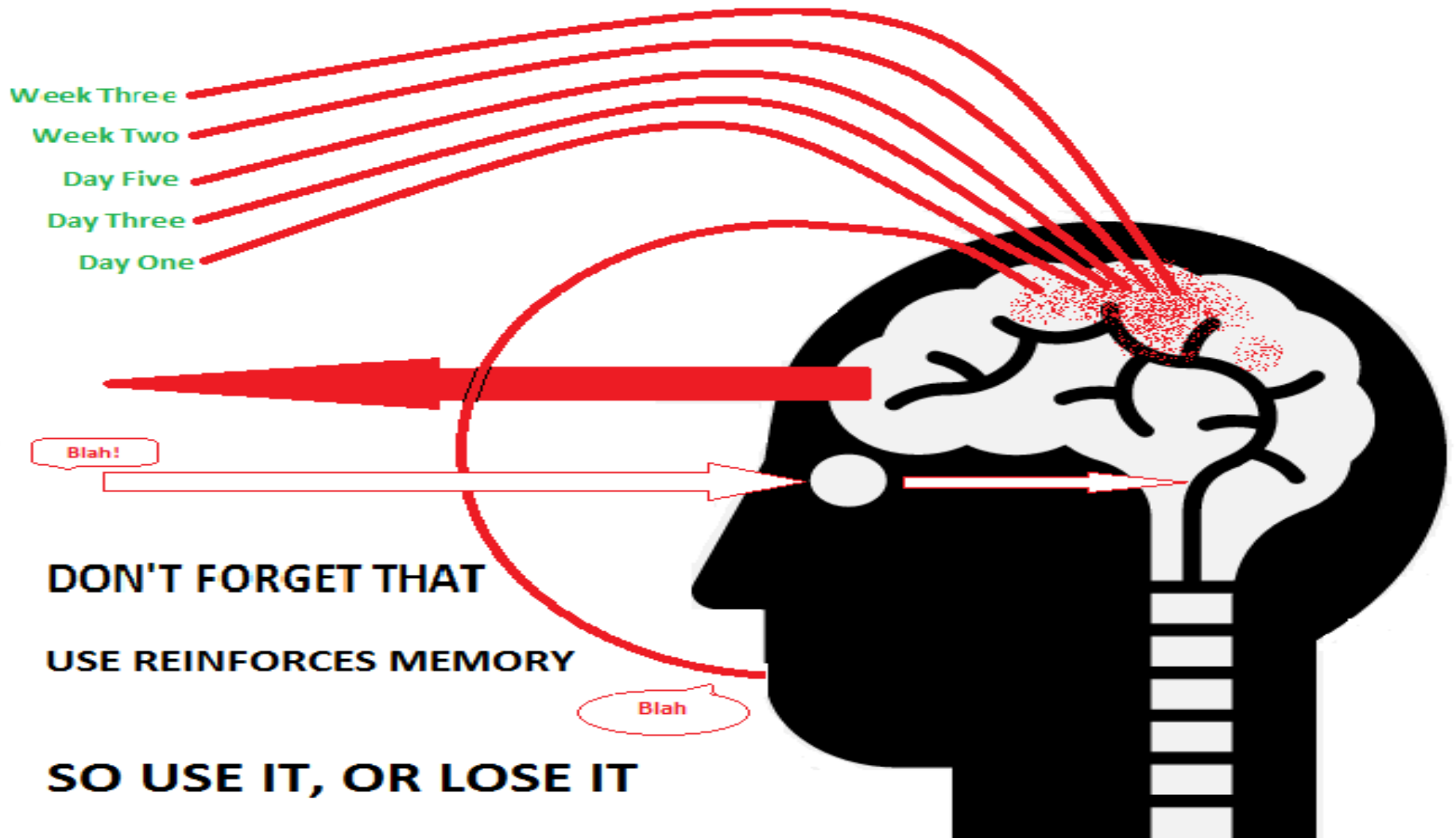
Words can have SHAPES,  
but related words  
can build off into NEW shapes.



**“SPACED REPETITION” MEANS  
REPEAT AT KEY TIMES**



NEURONS THAT FIRE TOGETHER  
WIRE TOGETHER,  
So  
USE = REPETITION



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