

*A Semantic Syllabus for  
Computer Science based  
upon Corpus Data*

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**CLR**

# W. F. MACKAY (1965)

## LANGUAGE TEACHING ANALYSIS, IUP

- We cannot teach everything so we must select, and we cannot teach what we select in one day, so we must sequence it.
- Selection (what is important?)
- Sequencing (what order is best?)

# SELECTION

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- **NATURAL LANGUAGE IS HUGE.**

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- **WE CAN'T TEACH IT ALL.**

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- **NATURAL LANGUAGE IS HUGE.**
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- **FORTUNATELY, NOT ALL PARTS ARE EQUALLY HUGE.**

# SELECTION

- **NATURAL LANGUAGE IS HUGE.**
- **WE CAN'T TEACH IT ALL.**
- **FORTUNATELY, NOT ALL PARTS ARE EQUALLY HUGE.**
- **OR EQUALLY IMPORTANT.**

# SELECTION

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- **PREPOSITIONS (ABOUT 75?)**

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- **PREPOSITIONS (ABOUT 75?)**
- **CONJUNCTIONS (ABOUT 150?)**

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- **PREPOSITIONS (ABOUT 75?)**
- **CONJUNCTIONS (ABOUT 150?)**
- **TIME EXPRESSIONS (300?)**

# SELECTION

- **PREPOSITIONS (ABOUT 75?)**

- **CONJUNCTIONS (ABOUT 150?)**

- **TIME EXPRESSIONS (300?)**

- 1.before
- 2.behind
- 3.below
- 4.beneath
- 5.beside
- 6.besides
- 7.between
- 8.beyond
- 9.but
10. by
11. concerning
12. considering
13. despite
14. down
15. during
16. except
17. excepting
18. excluding

# SELECTION

- **PREPOSITIONS (ABOUT 75?)**
- **CONJUNCTIONS (ABOUT 150?)**
- **TIME EXPRESSIONS (300?)**

# SELECTION

## ■ PREPOSITIONS (ABOUT 75?)

## ■ CONJUNCTIONS (ABOUT 150?)

## ■ TIME EXPRESSIONS (300?)

1. or
2. otherwise
3. perhaps ...
4. plus
5. previously
6. provided (that),
7. providing (that),
8. since
9. since (because)
10. so
11. so if
12. so long as,
13. so that
14. so therefore
15. so when
16. so, after
17. still

...

and to make matters worse

ただでさえ

# SELECTION

- **PREPOSITIONS (ABOUT 75?)**
- **CONJUNCTIONS (ABOUT 150?)**
- **TIME EXPRESSIONS (300?)**

# SELECTION

■ PREPOSITIONS (ABOUT 75?)

■ CONJUNCTIONS (ABOUT 150?)

■ TIME EXPRESSIONS (300?)

**1. For**

2. for half an hour

3. for more than a week

4. for the better part of an hour

5. for the entire twenty minutes

**6. Over**

7. Over the last few weeks

8. Over the last half of the project

9. Over the next three to five years

10. Over the past year

11. Over the same period,  
...

12. Over the weekend

13. Over the years,

# SELECTION

# SELECTION

**VERBS!**

# SELECTION

**VERBS!**

■ **VERBS**

# SELECTION

## VERBS!

- VERBS

- CONTROL SENTENCE STRUCTURE

# SELECTION

## VERBS!

- VERBS

- CONTROL SENTENCE STRUCTURE

- ARE DIFFICULT

# SELECTION

## VERBS!

- **VERBS**
  - **CONTROL SENTENCE STRUCTURE**
  - **ARE DIFFICULT**
  - **ARE NOT VAST (PERHAPS 3-4000?)**

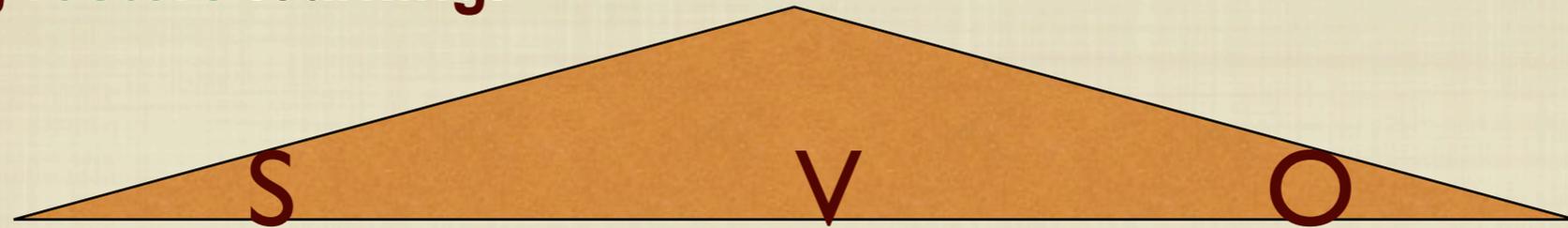
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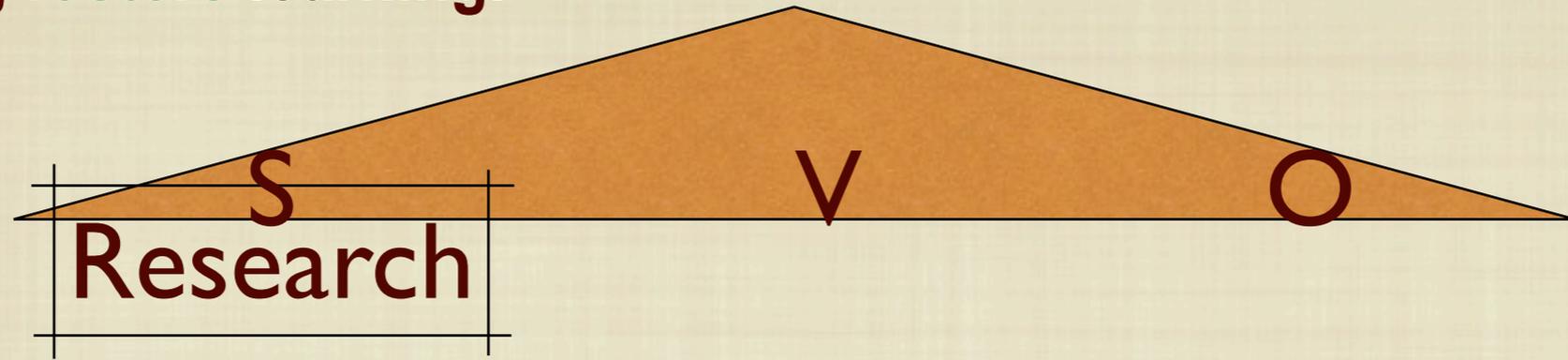
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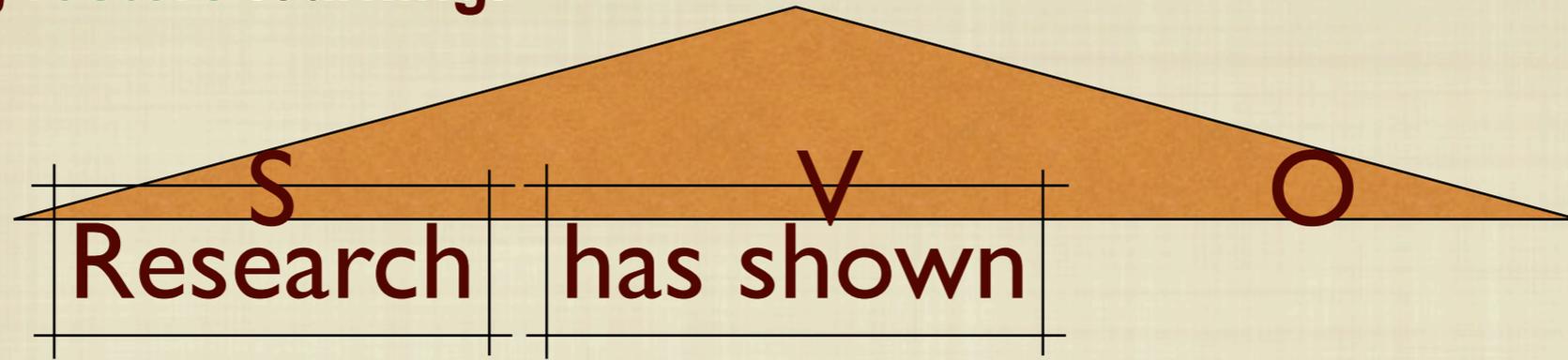
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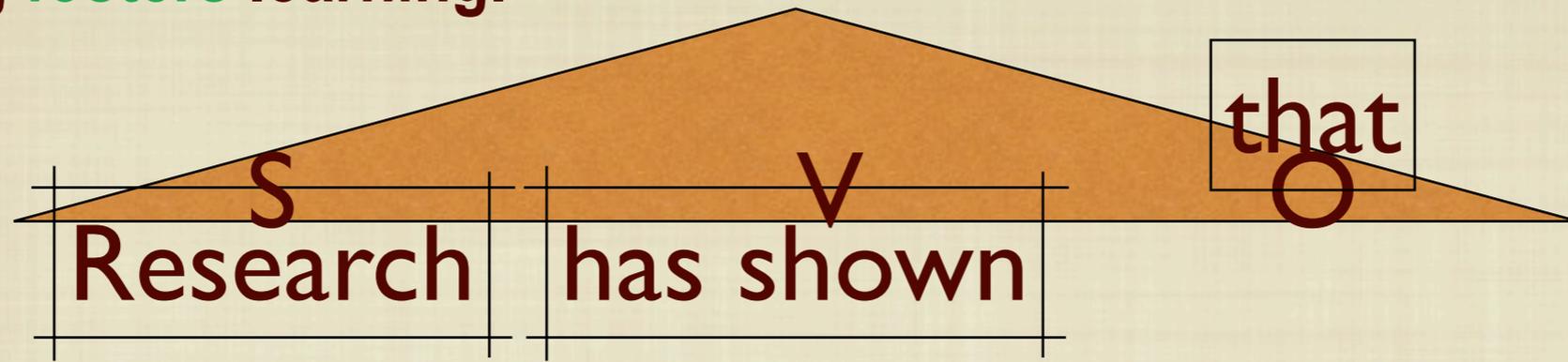
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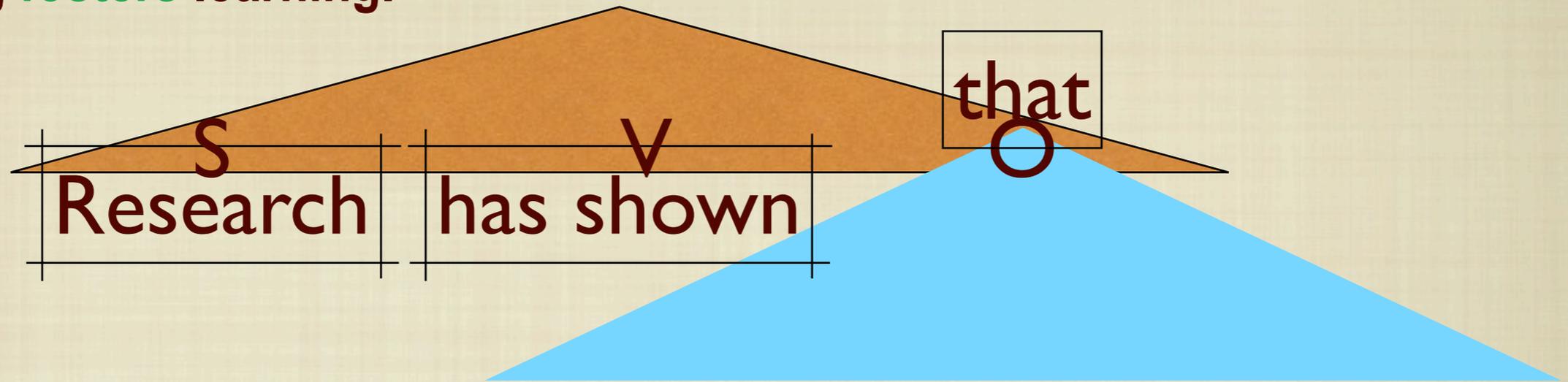
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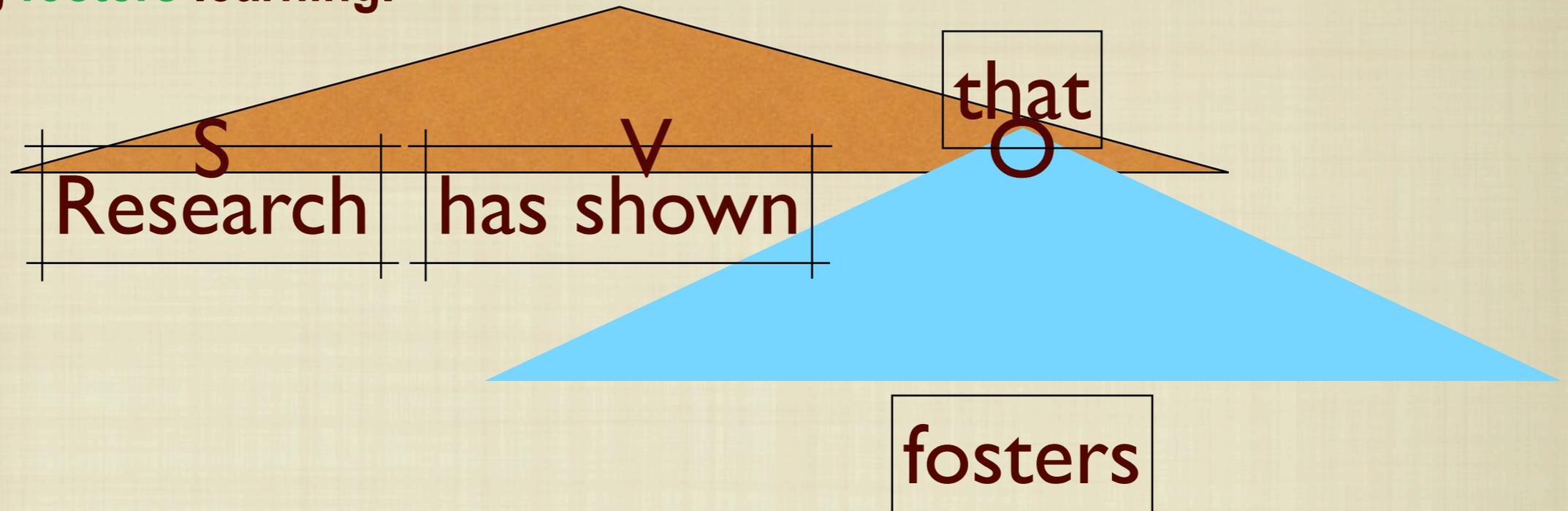
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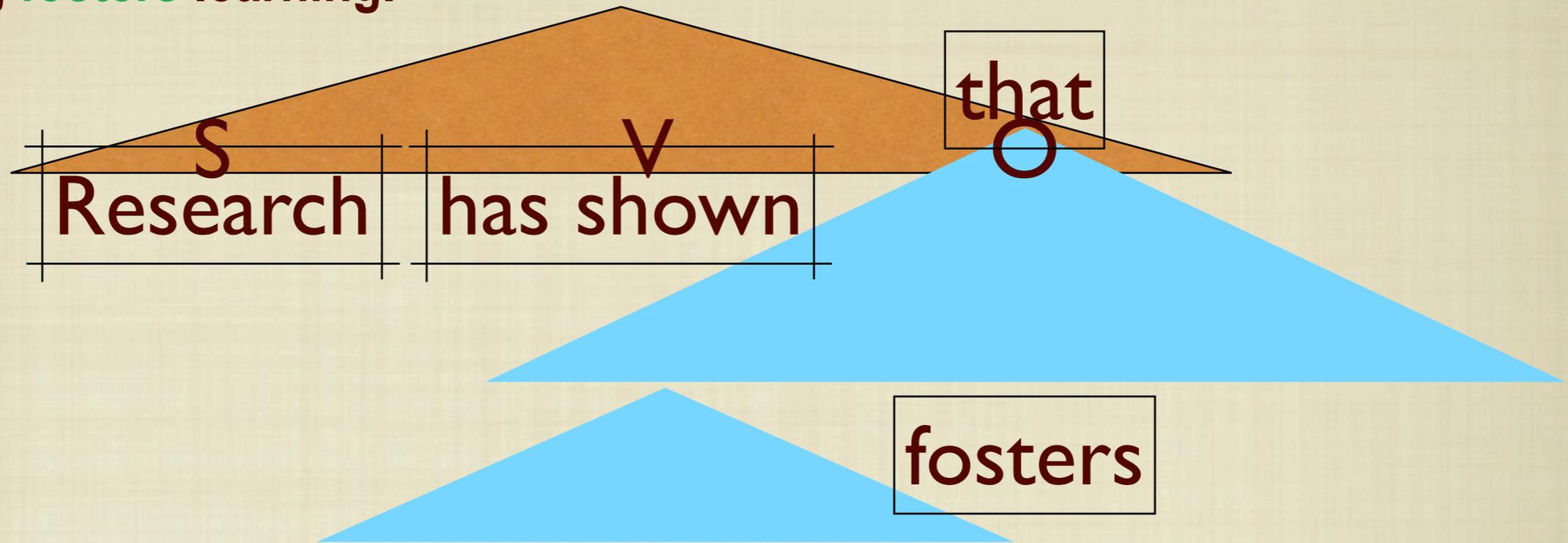
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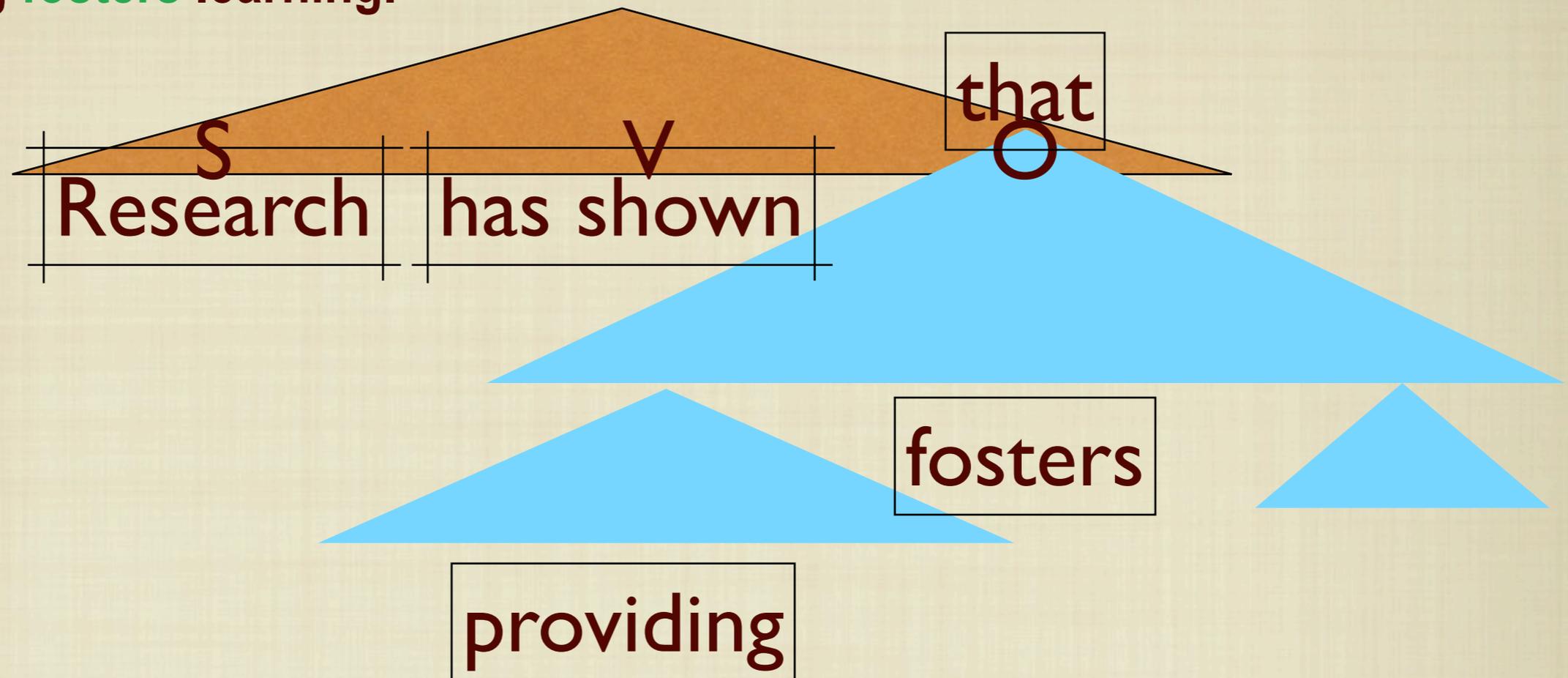


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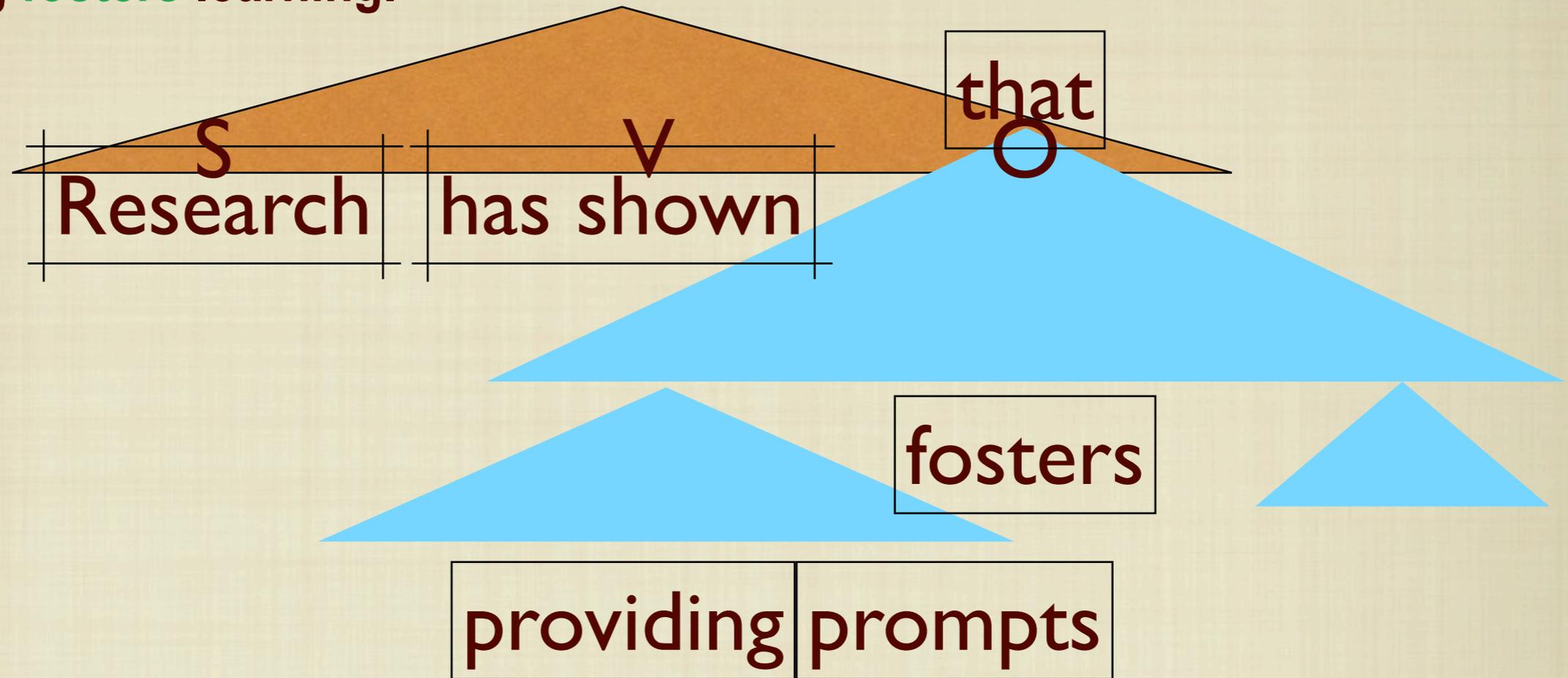




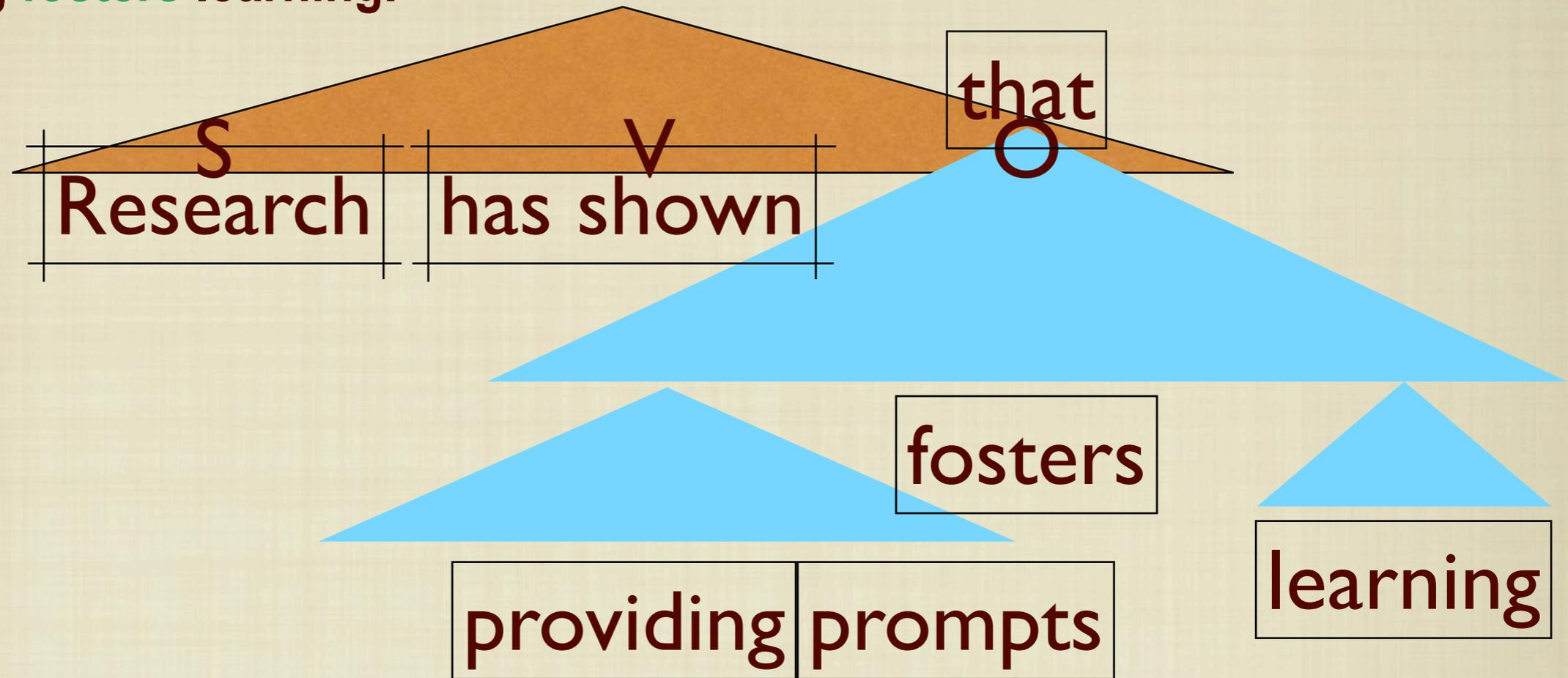
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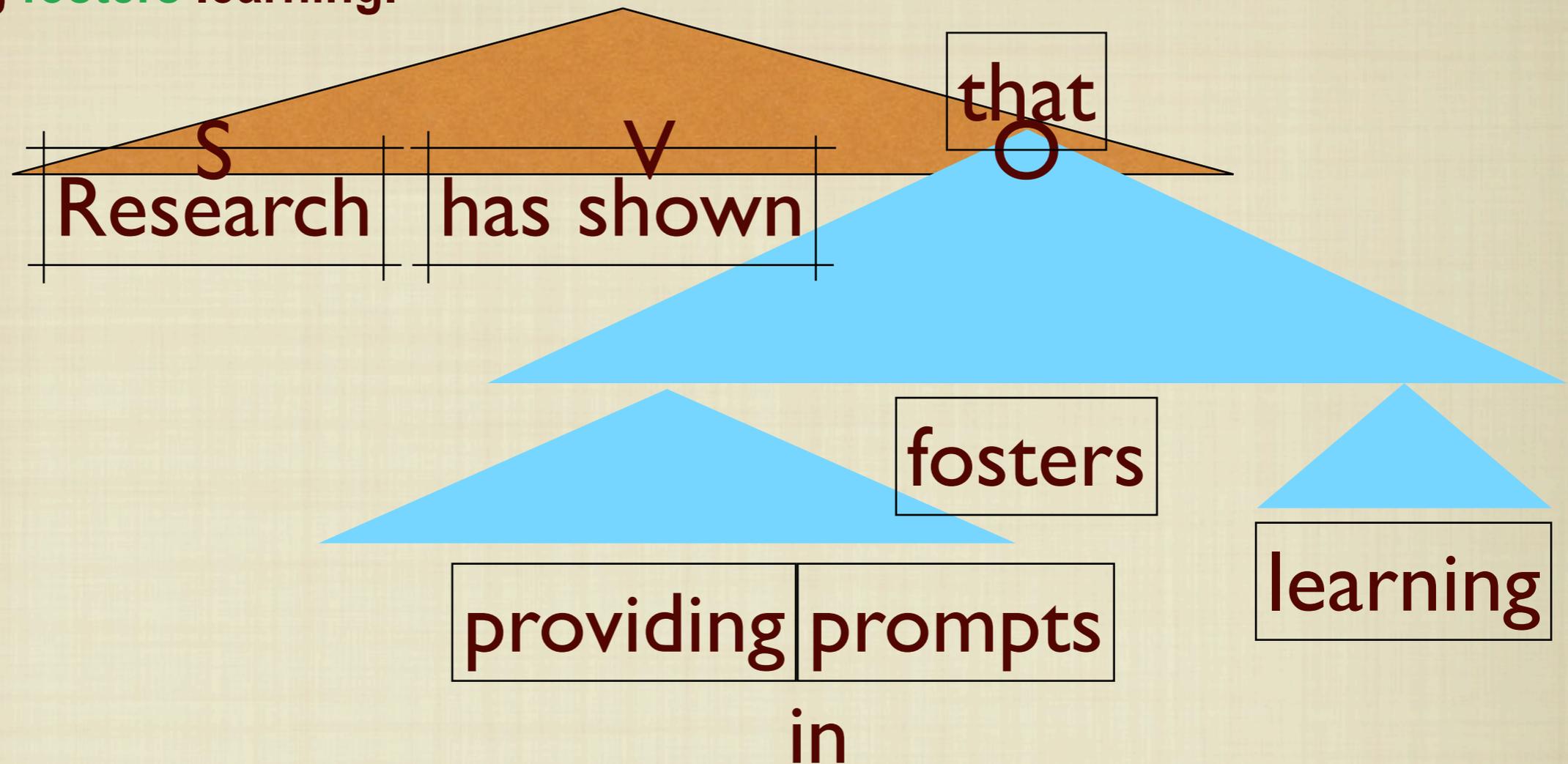
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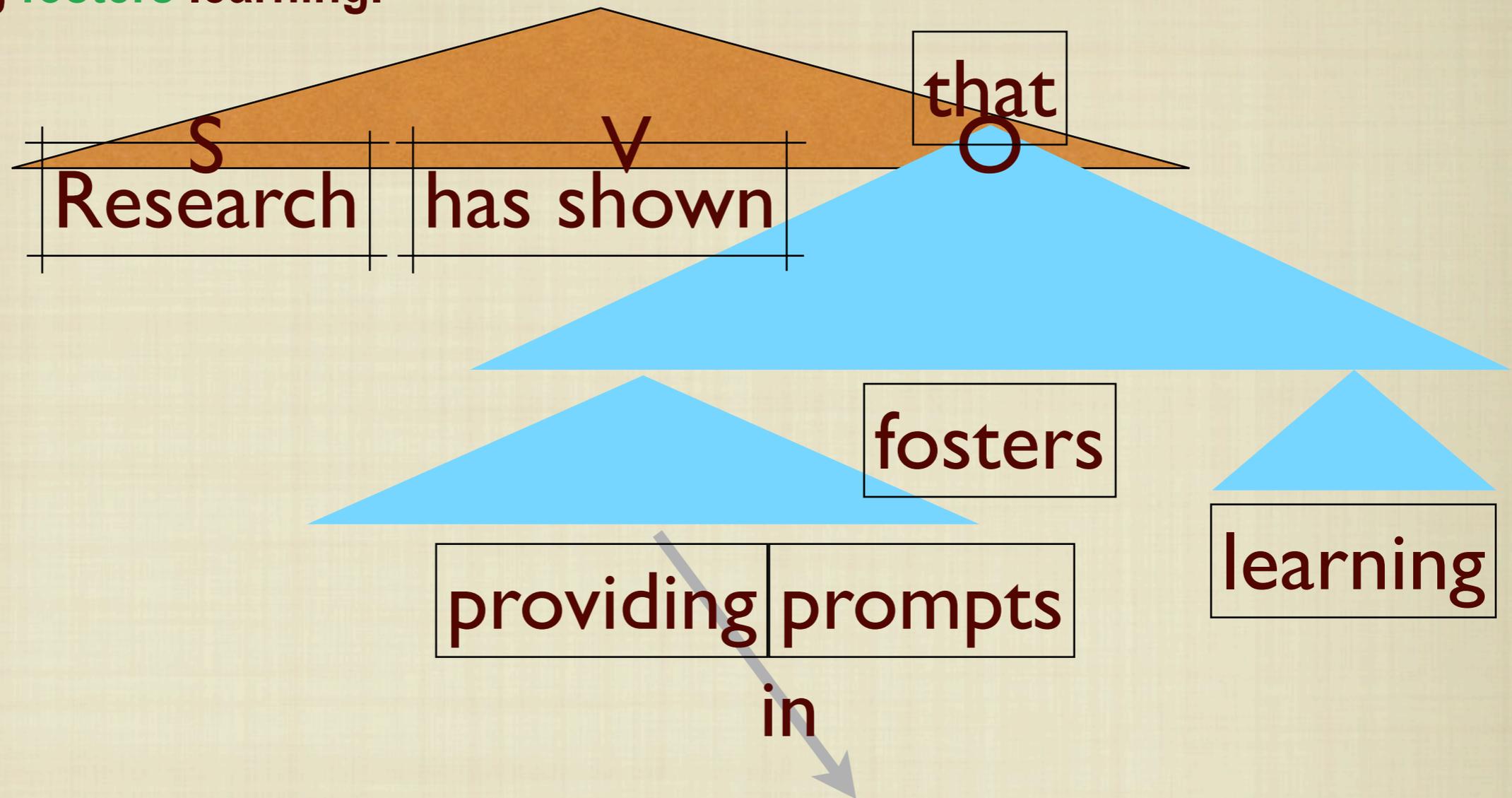
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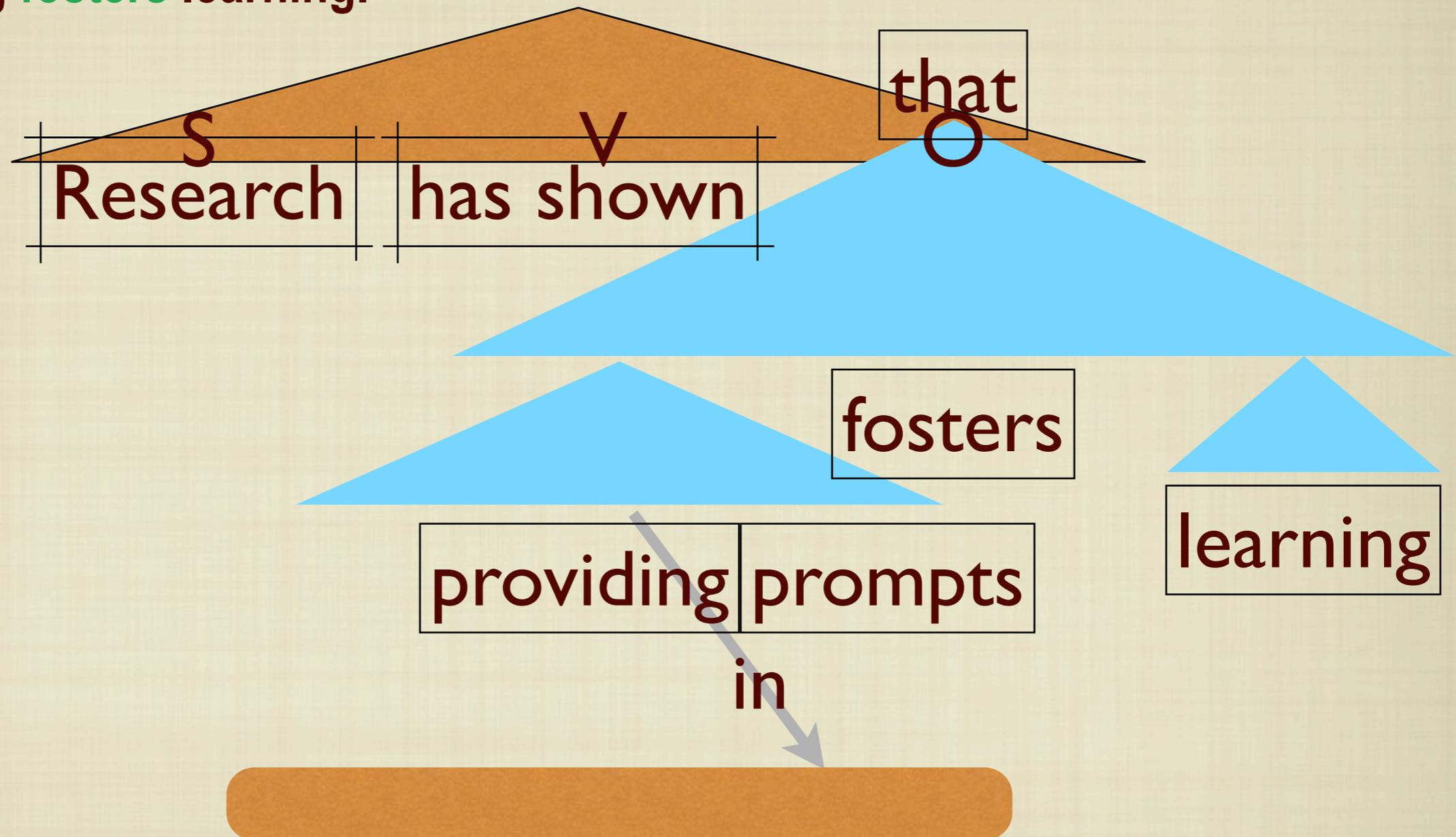
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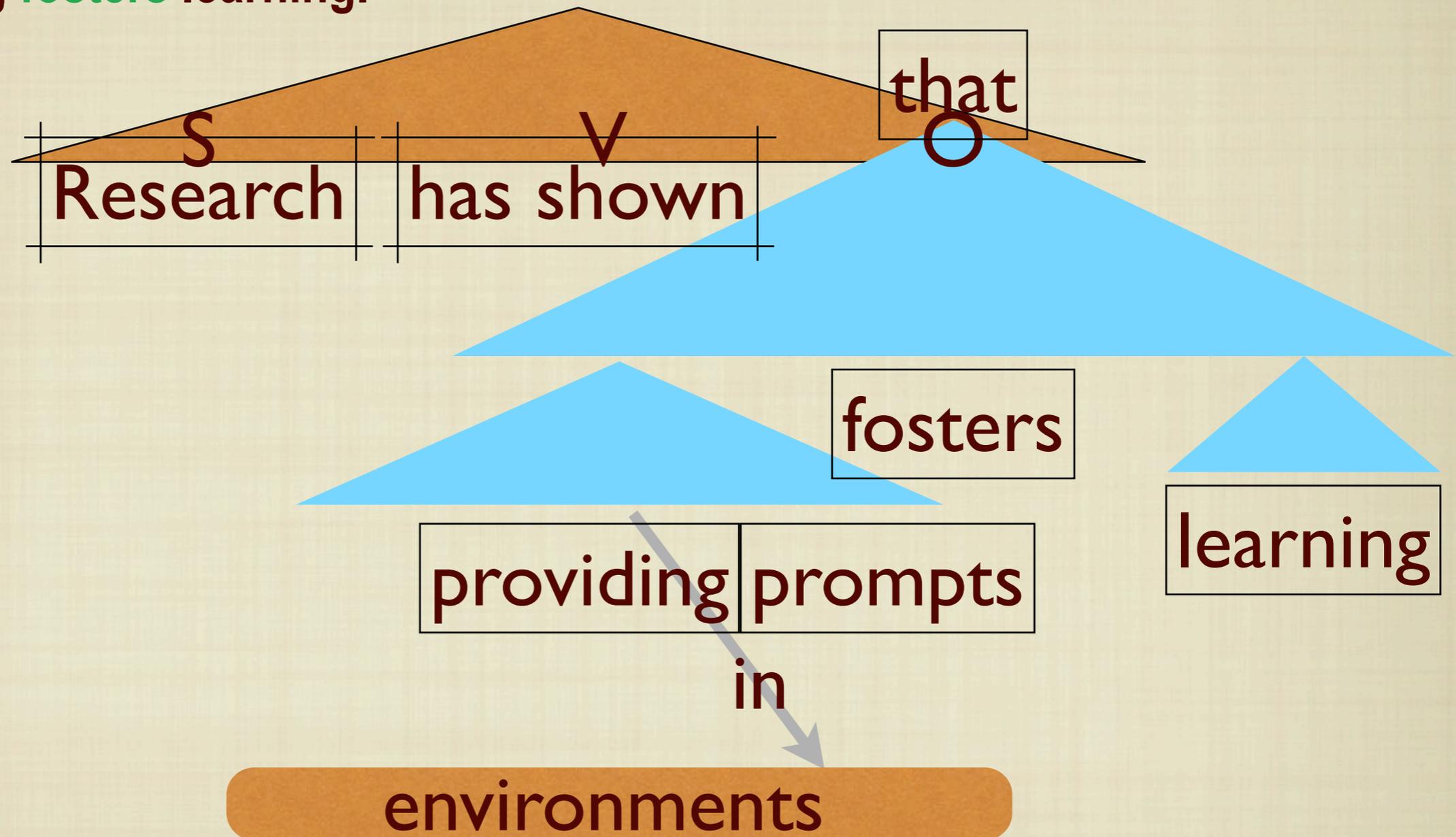
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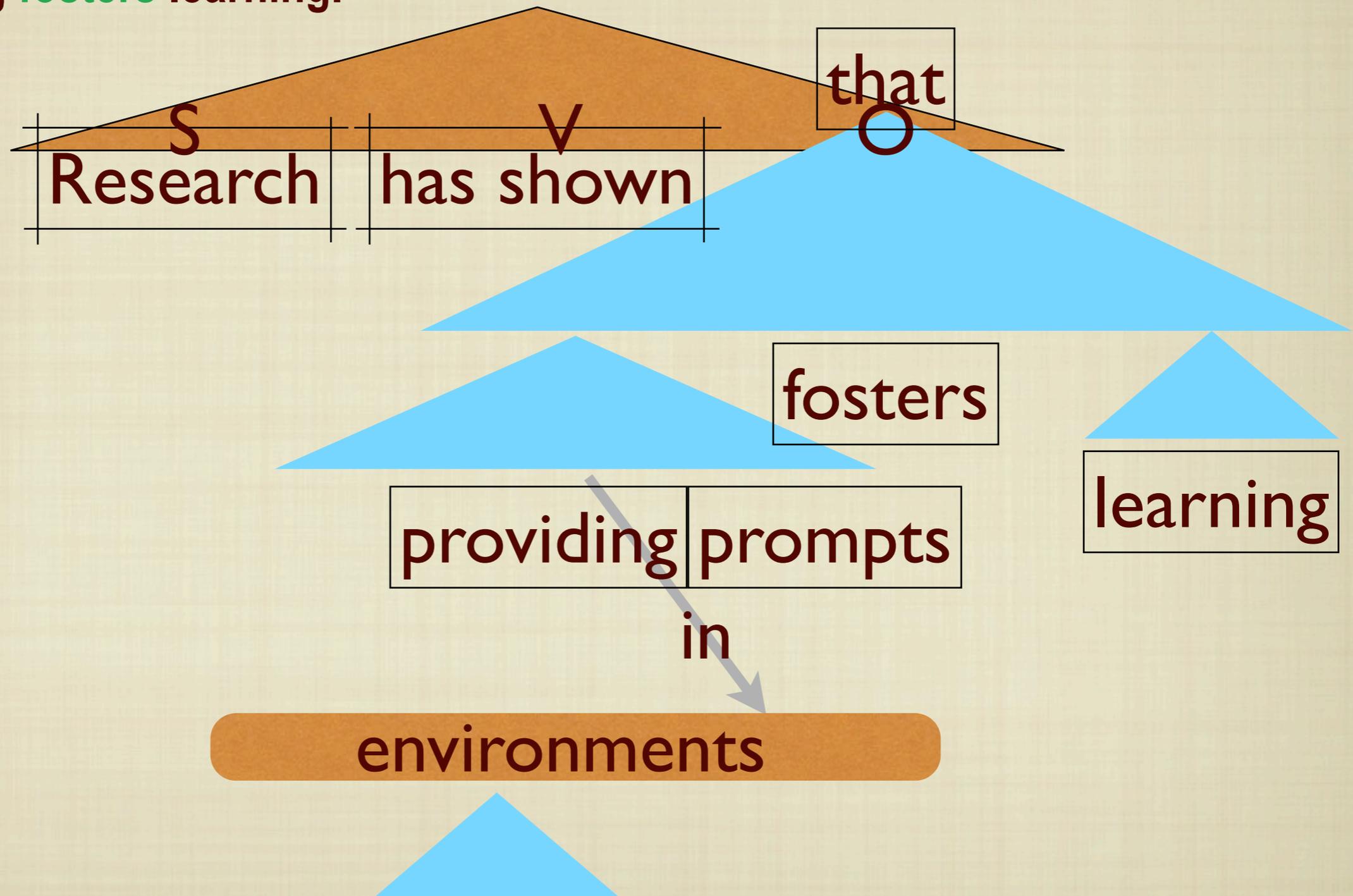
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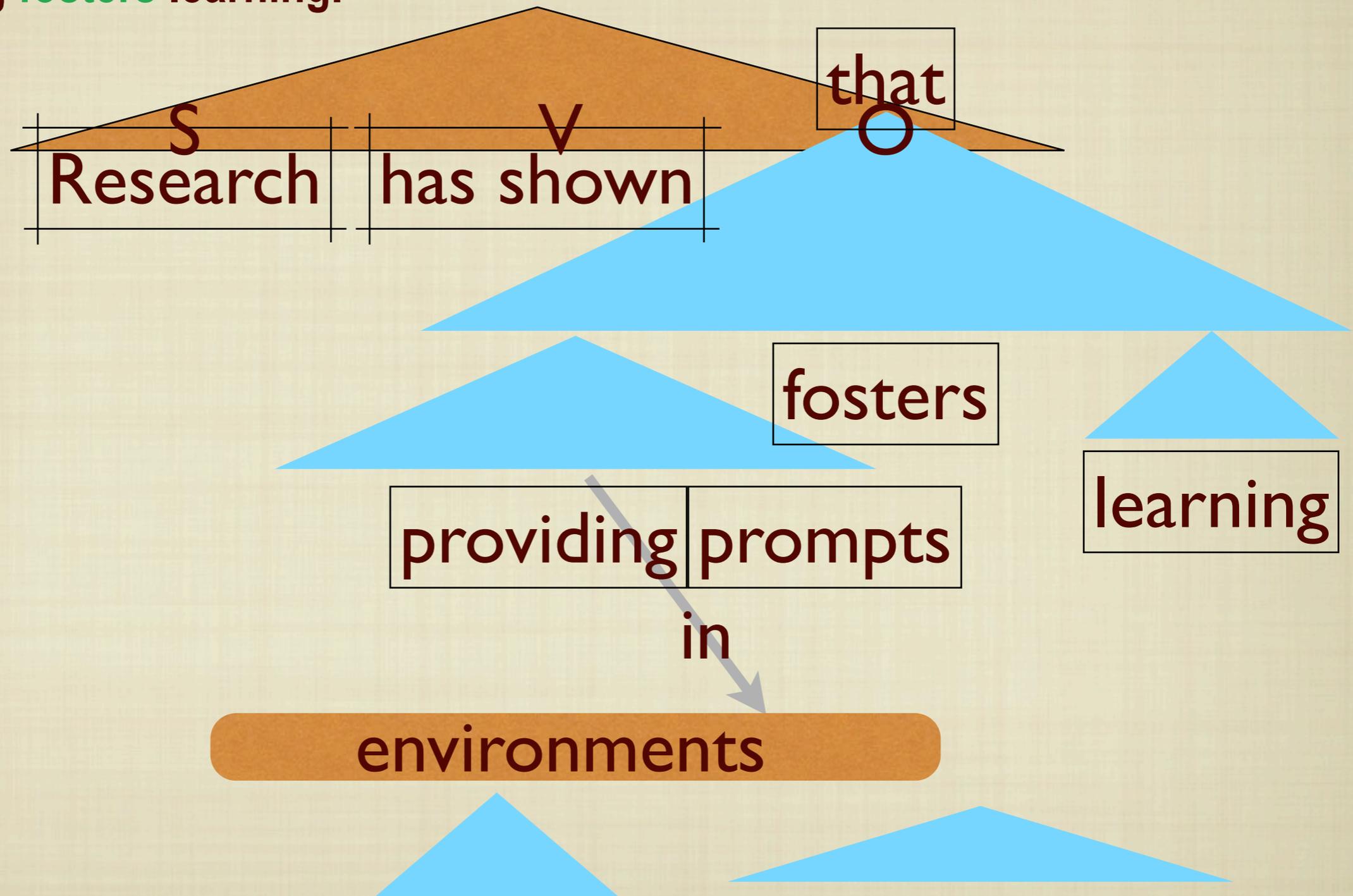
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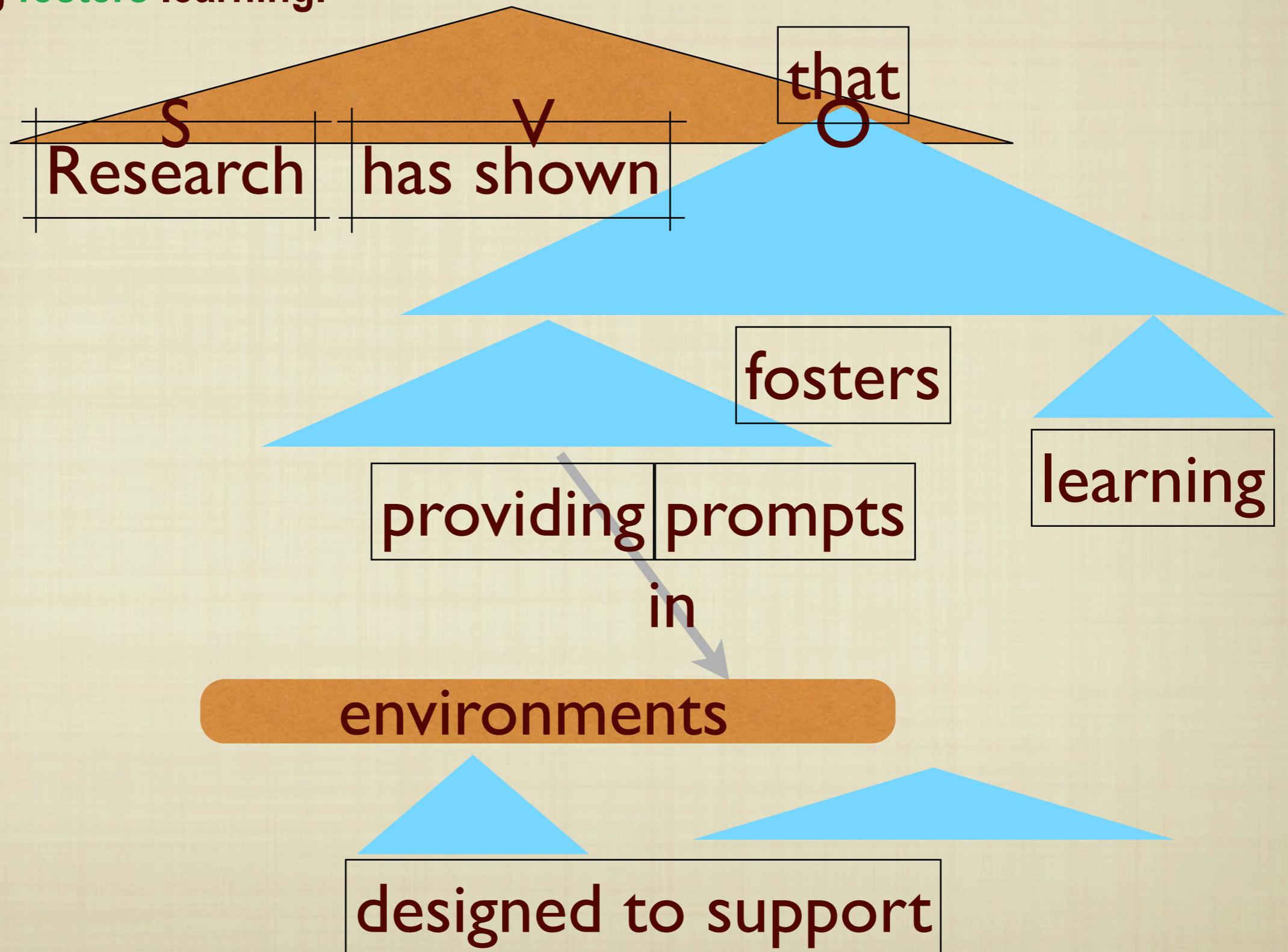
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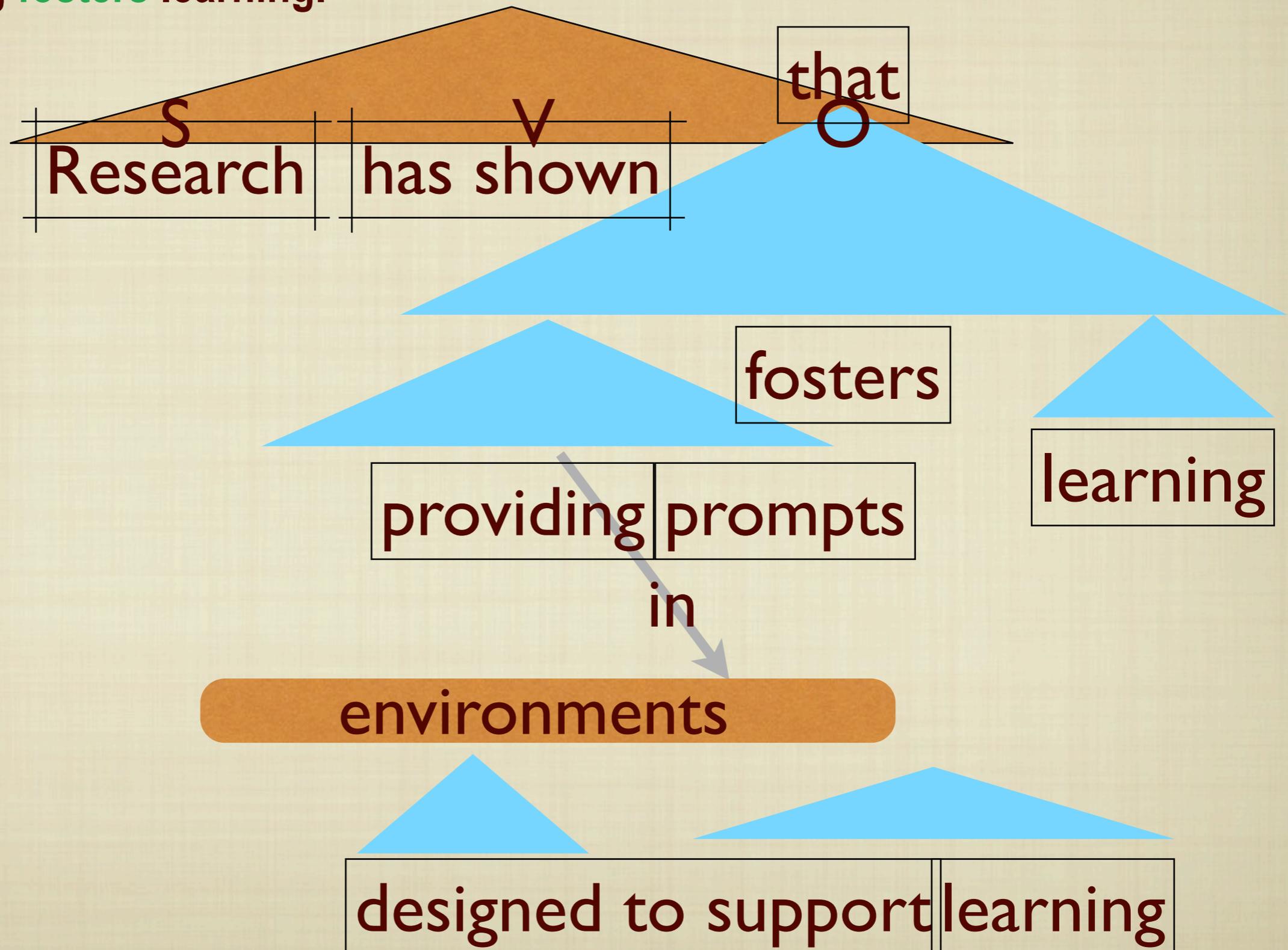
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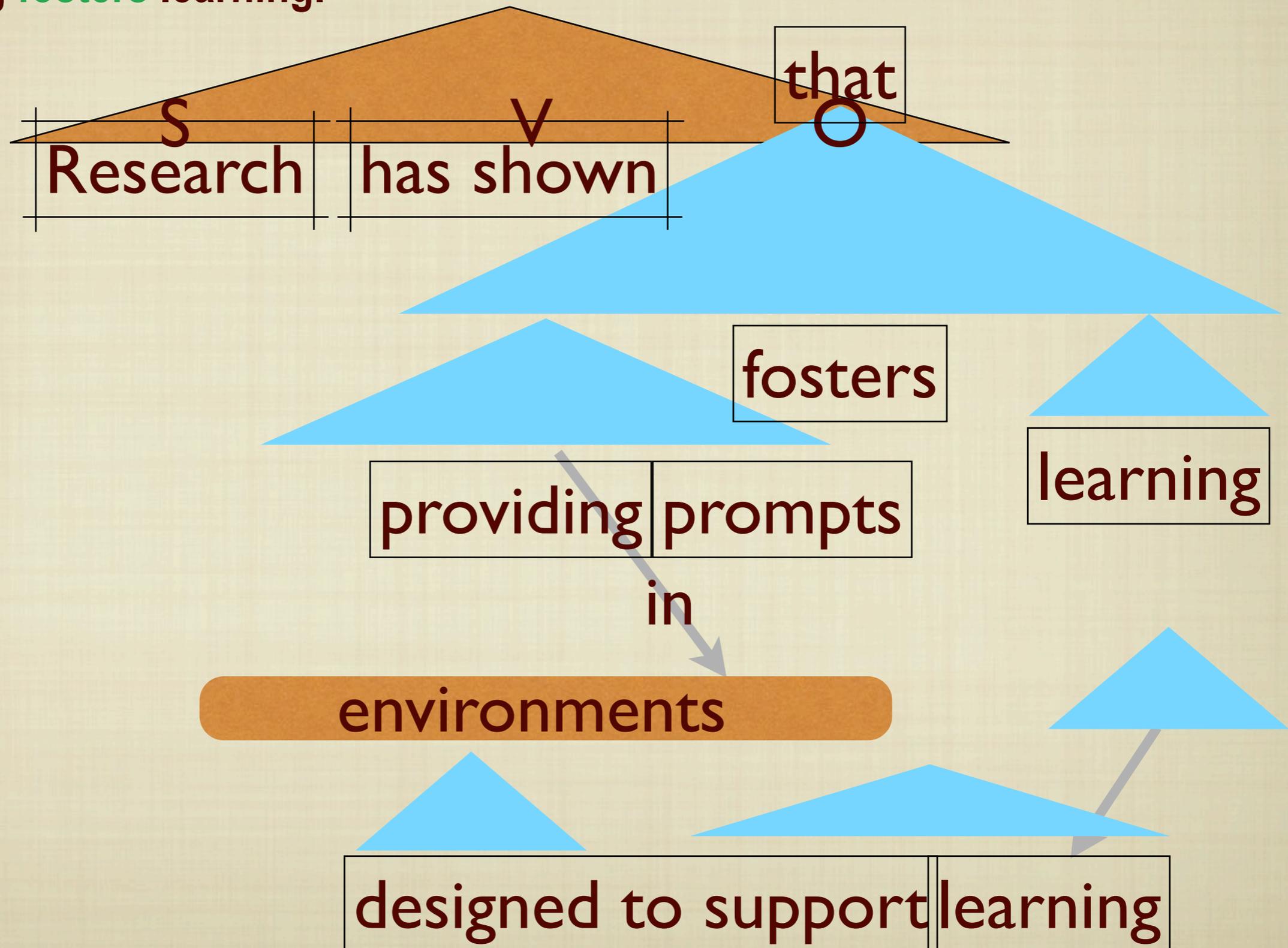


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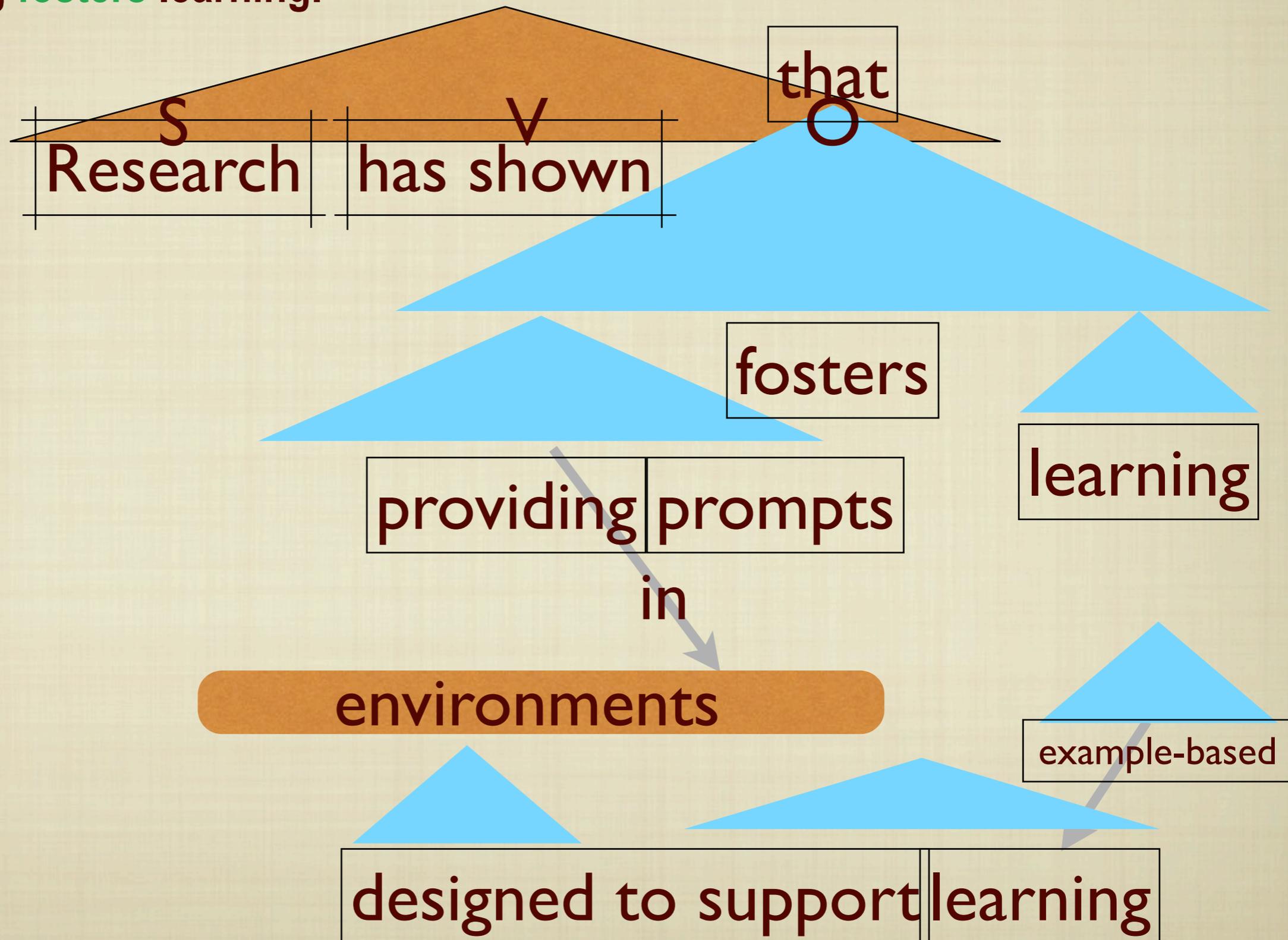




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# CORPUS-BASED RESEARCH

- **COMPUTER SCIENCE ABSTRACTS**
  - **ABOUT 1,000,000 WORDS**
  - **AFTER CLEANING: ABOUT 500,000 WORDS**
  - **TAGGED (CLAWS) BY POS**
  - **EXTRACTED VERBS AND VERB PHRASES**
  - **COUNTED BY ASSIMILATION**

# GRADING BY FREQUENCY

- EXTRACTED VERBS FROM GSL (ABOUT 690)
- EXTRACTED VERBS FROM AWL (ABOUT 370)
- SEARCHED FOR 1000 MOST FREQUENT VERBS IN DAVIES' ACADEMIC CORPUS

# COVERAGE

- CHECKED FOR OVERLAP
  - ZERO OVERLAP BETWEEN GSL & AWL (1000)
  - LARGE OVERLAP BETWEEN DAVIES 1000 AND COMBINED GSL/AWL (ABOUT 50 “NEW” VERBS)
  - CHECKED OVERLAP BETWEEN COMBINED DAVIES/AWL/GSL AND CS LIST (ABOUT 730 “NEW VERBS”)

# GSL

2	39175	be
9	12458	have
25	4389	do
31	3062	would
33	2903	will
35	2793	say
37	2378	make
39	2218	can
50	1849	go
54	1782	could
55	1773	state
60	1586	take
61	1577	come
63	1531	know
64	1520	see
65	1512	use
66	1488	get
67	1430	like
71	1315	work
73	1307	may
75	1270	give

# AWL

1. assemble
2. assembling
3. collapse
4. compile
5. conceive
6. convince
7. unconvinced
8. depress
9. encounter
10.       incline
11.       invoke
12.       levy
13.       ongoing
14.       panel
15.       persist
16.       pose
17.       so-called
18.       undergo
19.       undergone
20.       underwent

# DAVIES 1000

accommodate 736  
accompany 950  
accomplish 1507\*  
account 4183  
achieve 6582  
acknowledge 1370  
acquire 1752  
act 2437  
adapt 1247  
add 7032  
address 6413\*  
adjust 1485  
administer 1458  
admit 652  
adopt 2702  
affect 8645  
afford 617  
agree 3644  
aim 1055  
allow 12443  
alter 1464  
analyze 4045  
announce 777\*

## ABOUT 50

1. Davies NOT in AWLGSL
2. accomplish
3. address
5. announce
6. associate
7. average
8. award
9. born
10. capture
11. center
12. challenge
13. characterize
14. coach
15. cope
16. correlate
17. cost
18. deem
19. derived
20. diagnose
21. direct
22. document
23. emphasize
24. engage
25. enroll
26. entitle

# CS VERBS

**730 NEW VERBS!**

abate  
abort  
abound  
abstract  
accelerate  
accentuate  
accrue  
acquaint  
activate  
adhere  
afflict  
age  
air  
alert  
alias  
align  
alleviate  
ally  
amplify  
anchor  
anger  
animate  
annotate  
anthologize  
anthropomorphize  
appeal  
appraise  
appropriate  
approximate  
arbitrate  
arc  
arouse  
articulate  
ascertain

# TOTAL

- **LESS THAN 2000 VERBS**
- **WHAT ABOUT SEQUENCING?**
  - **FREQUENCY, OF COURSE**
  - **BUT GROUPING SUPPORTS LEARNING**
  - **SEMANTIC GROUPING POSSIBLE?**

# CLASSIFICATION

- **FOUR WAYS**

- **WORDNET 3.0**

- **DIXON'S SEMANTIC GRAMMAR**

- **LEVIN'S VERB CLASS (ABOUT 3000 VERBS)**

- **TRIPP'S SEMANTIC CLASSES**

## Overview of verb arrange

The verb arrange has 7 senses (first 5 from tagged texts)

- 1. (13) **arrange**, set up -- (put into a proper or systematic order; ``*arrange the books on the shelves in chronological order*” )
- 2. (7) **arrange**, fix up -- (make **arrangements** for; ``*Can you arrange a meeting with the President?*” )
- 3. (3) stage, **arrange** -- (plan, organize, and carry out (an event); ``*the neighboring tribe staged an invasion*” )
- 4. (2) format, **arrange** -- (set (printed matter) into a specific format; ``*Format this letter so it can be printed out*” )
- 5. (2) dress, **arrange**, set, do, coif, coiffe, coiffure -- (**arrange** attractively; ``*dress my hair for the wedding*” )
- 6. **arrange**, set -- (adapt for performance in a different way; ``*set this poem to music*” )
- 7. **arrange**, set up, put, order -- (**arrange** thoughts, ideas, temporal events; ``*arrange my schedule*”; “*set up one’s life*”; “*I put these memories with those of bygone*” )

# Synonyms / Hypernyms (Ordered by Estimated Frequency) of verb arrange

7 senses of **arrange**

## Sense 1

**arrange**, set up -- (put into a proper or systematic order; ``*arrange the books on the shelves in chronological order*” )

- put, set, place, pose, position, lay -- (put into a certain place or abstract location; ``*Put your things here*”; “*Set the tray down*”; “*Set the dogs on the scent of the missing children*”; “*Place emphasis on a certain point*” )

# Troponyms (hyponyms) of verb arrange

7 senses of **arrange**

## Sense 1

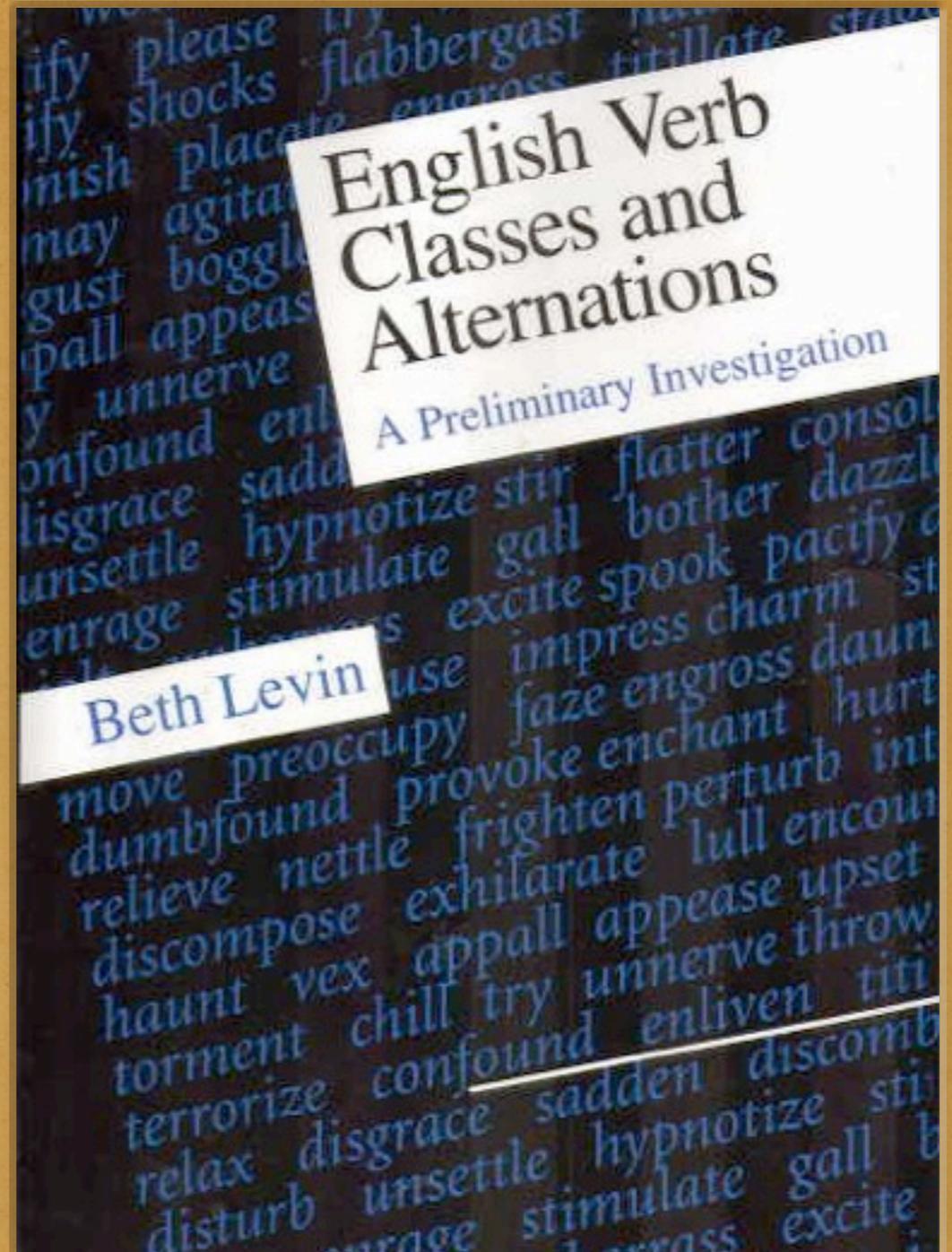
**arrange**, set up -- (put into a proper or systematic order; ``*arrange the books on the shelves in chronological order*” )

- regularize, regularise -- (make regular or more regular; ``*regularize the heart beat with a pace maker*” )
- order -- (place in a certain order; ``*order the photos chronologically*” )
- order -- (bring order to or into; ``*Order these files*” )
- straighten -- (make straight or straighter; ``*Straighten this post*”; “*straighten hair*” )
- rearrange -- (put into a new order or **arrangement**; ``*Please rearrange these files*”; “*rearrange the furniture in my room*” )
- serialize, serialise -- (**arrange** serially; ``*Serialize the numbers*” )
- alphabetize, alphabetise -- (**arrange** in alphabetical order; ``*Alphabetize the list*” )
- organize, organise, coordinate -- (bring order and organization to; ``*Can you help me organize my files?*” )
- stratify -- (form layers or strata; ``*The rock stratifies*” )
- string, thread, draw -- (thread on or as if on a string; ``*string pearls on a string*”; “*the child drew glass beads on a string*”; “*thread dried cranberries*” )
- marshal -- (**arrange** in logical order; ``*marshal facts or arguments*” )
- string -- (stretch out or **arrange** like a string)
- string out, spread out -- (set out or stretch in a line, succession, or series; ``*the houses were strung out in a long row*” )
- preen, plume -- (clean with one’s bill; ``*The birds preened*” )
- stack -- (**arrange** the order of so as to increase one’s winning chances; ``*stack the deck of cards*” )
- chain -- (connect or **arrange** into a chain by linking)
- pair, geminate -- (**arrange** in pairs; ``*Pair these numbers*” )
- concord -- (**arrange** the words of a text so as to create a concordance; ``*The team concorded several thousand nouns, verbs, and adjectives*” )

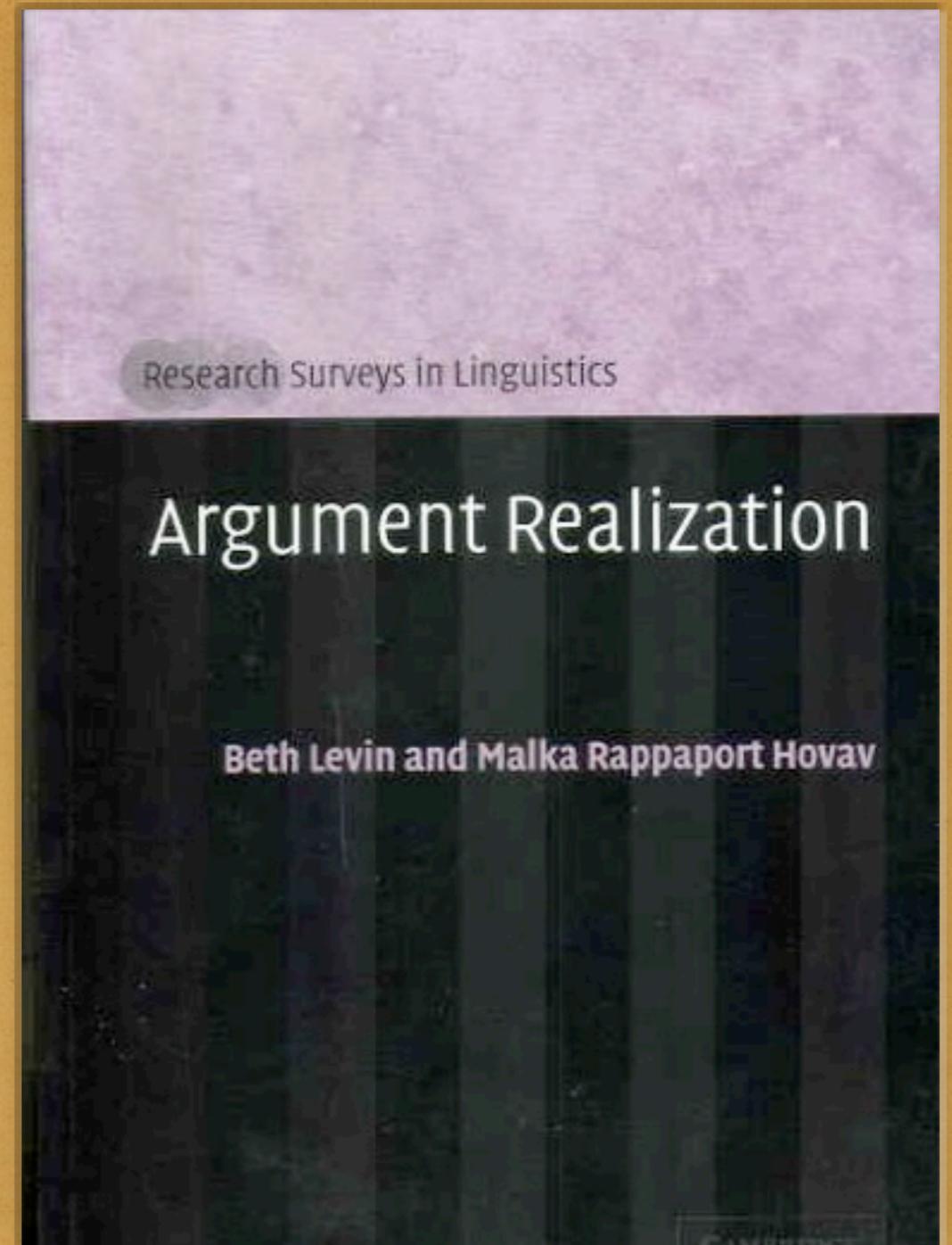
## ABOUT 2800 Verbs in tagged texts

abandon v 5 4 @ ~ \$ + 5 5 02228031 02227741 02076676 00613393 00614057  
abet v 1 2 @ + 1 1 02549211  
abhor v 1 2 @ + 1 1 01774426  
abide v 2 5 @ ~ \$ + ; 2 2 02637202 00668099  
abide\_by v 2 3 @ ~ \$ 2 1 02542280 02457233  
abolish v 1 3 ! ~ + 1 1 02427334  
abound v 2 3 @ ^ + 2 1 02715279 02715595  
abound\_in v 1 1 @ 1 1 02715923  
about-face v 2 2 @ + 2 1 01909042 00689068  
abridge v 2 4 @ ~ \$ + 2 1 00243900 00236843  
abrogate v 1 2 @ + 1 1 02478584  
absent v 1 2 @ + 1 1 00421535  
absorb v 9 6 ! @ ~ \$ + ; 9 7 01539633 00602255 02216560 01539063 00395698 02765464 00601043  
01470524 00600370  
abstain v 2 4 ! @ ~ + 2 2 02463426 01196037  
abstract v 4 2 @ + 4 3 00692329 02276866 00734587 01008288  
abuse v 4 3 @ ~ + 4 2 02516594 00203213 00845299 00203556  
accede v 3 3 @ ~ + 3 1 00878348 02381397 00804139  
accelerate v 2 4 ! @ ~ + 2 2 00438178 00439343  
accentuate v 2 3 @ ~ + 2 1 01013367 00983333  
accept v 11 5 ! @ ~ \$ + 11 7 00686447 02236124 00797697 00719231 02236624 02301825 00668805  
02741546 02210622 02209936 00718489  
acclaim v 2 4 @ ~ \* + 2 1 00861725 00861929  
acclimatize v 1 2 @ + 1 1 00393677  
accommodate v 7 4 @ ~ \$ + 7 4 02702830 00299580 01184453 02732798 02651424 00885925 00482893  
accompany v 4 4 @ ~ + ; 4 4 02716165 02025550 01728355 02716767  
accomplish v 2 4 @ ~ \$ + 2 2 01640855 02526085  
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accost v 2 3 @ ~ \$ 2 1 00990655 00781652  
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# INFLUENCES



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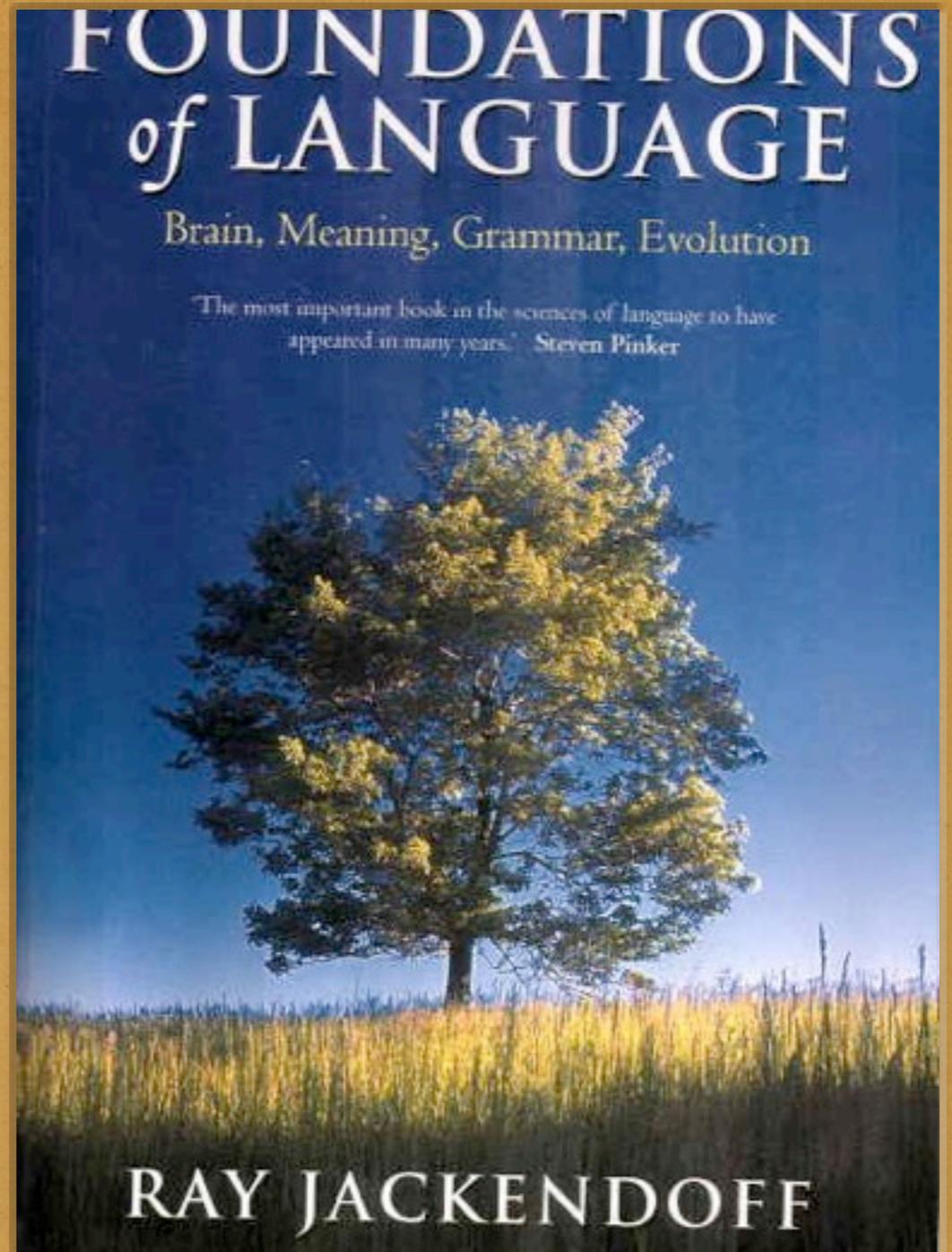
## LEARNABILITY AND COGNITION

The Acquisition of Argument Structure

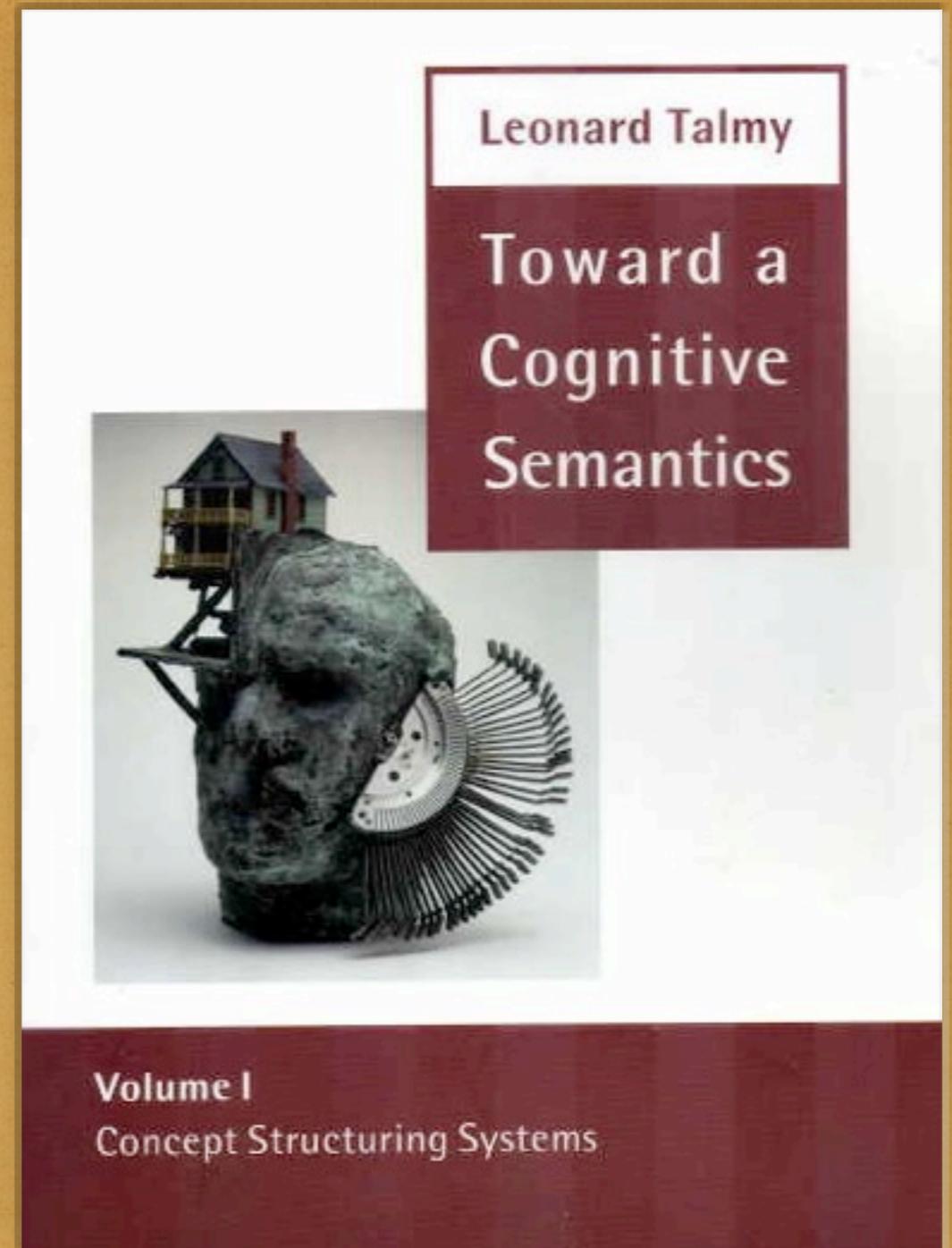
STEVEN PINKER



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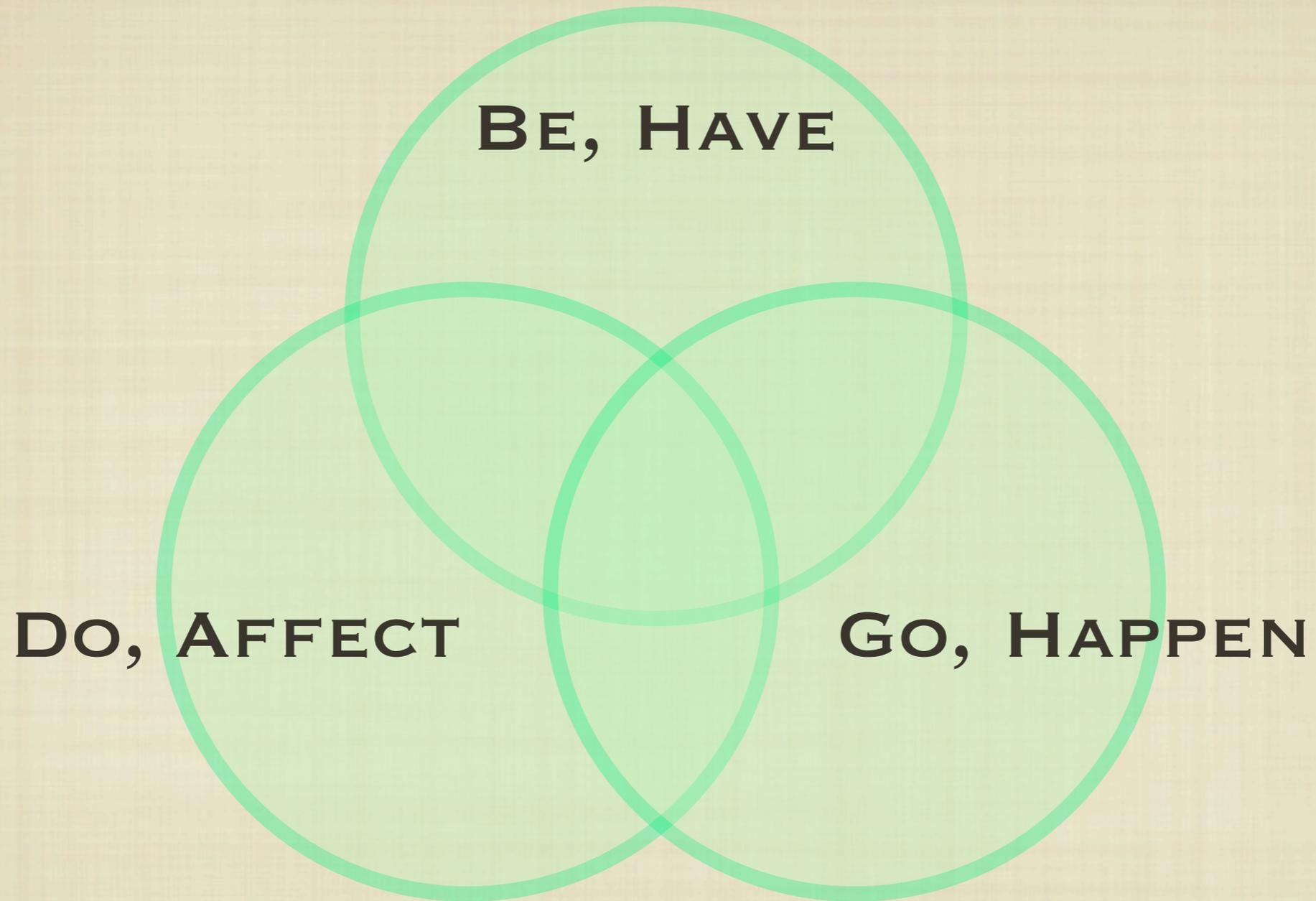


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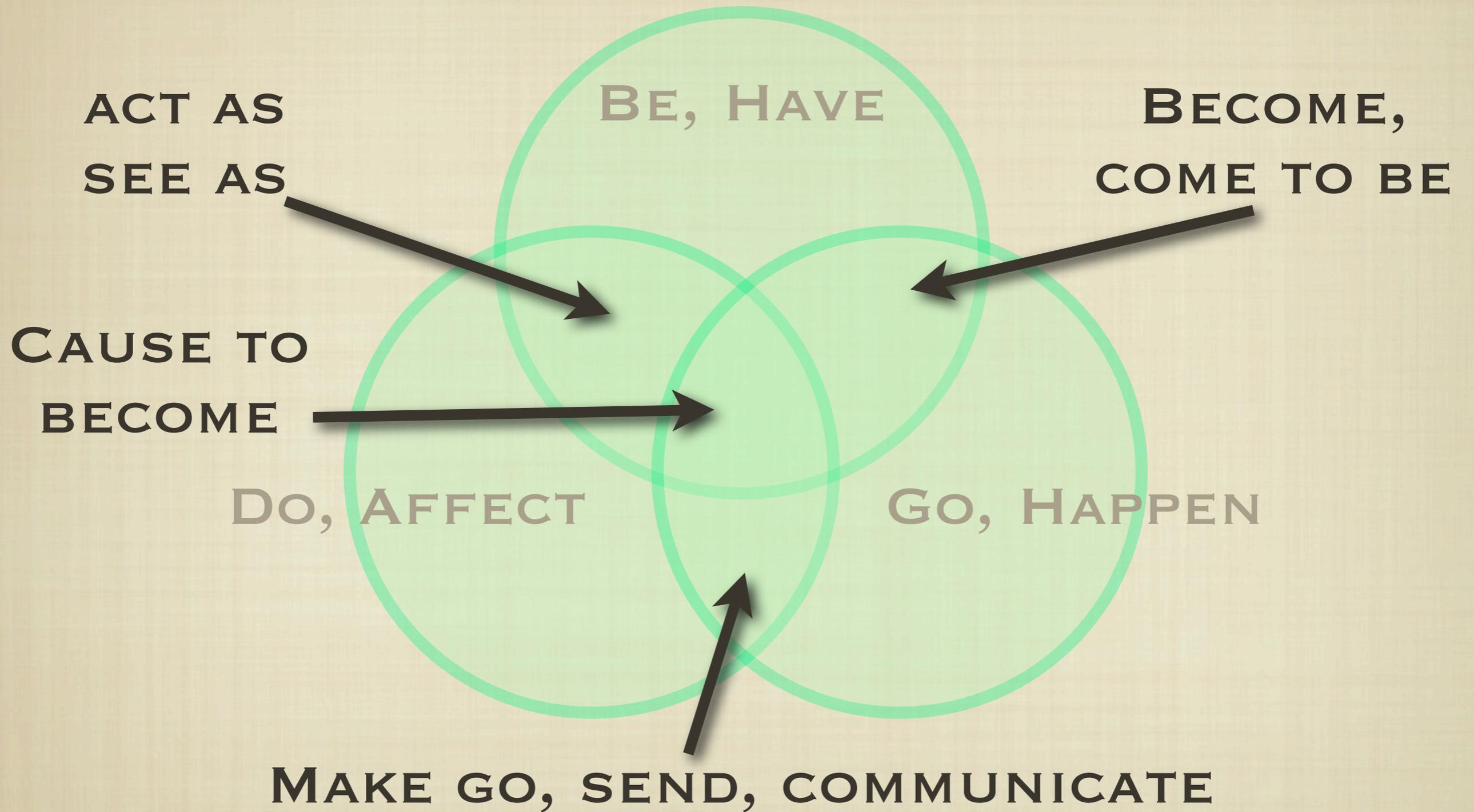


Volume I  
Concept Structuring Systems

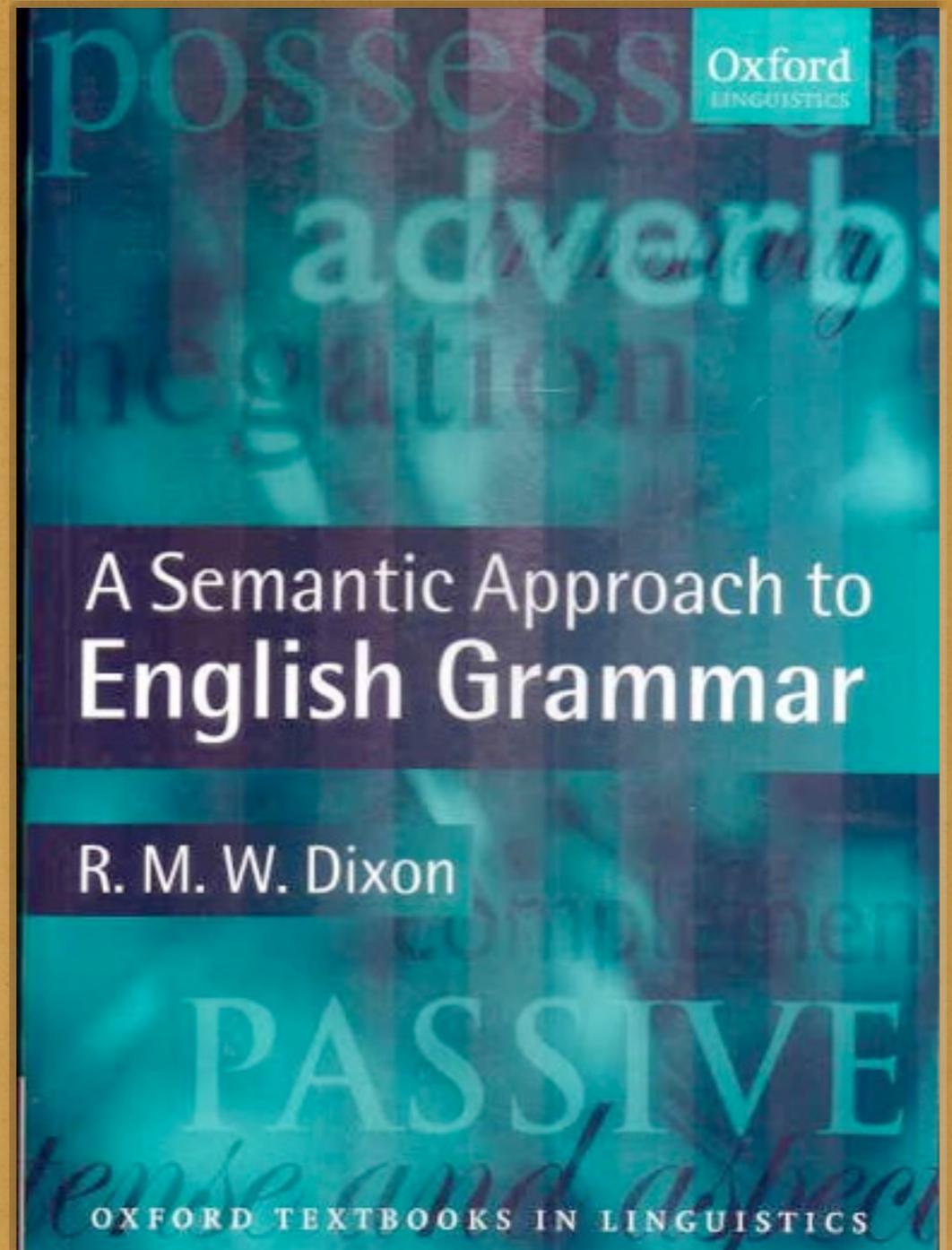
# SEMANTIC CLASSES ( 1 )



# SEMANTIC CLASSES (2)



DIXON



# DIXON'S VERBS

## ■ PRIMARY

■ A: SUPPORT NOUN ARGUMENTS (GO, HIT)

■ B: SUPPORT CLAUSE ARGUMENTS (1:BELIEVE,  
2:ENCOURAGE)

## ■ SECONDARY

■ USED WITH OTHER VERBS (NEED TO, TRY TO)

# DIXON

■ PRIMARY A (CONCRETE NVN) OR (NV) OR (NVNN)

■ MOTION

■ REST

■ AFFECT

■ GIVING

# DIXON

## ■ 1A MOTION

■ **A. (MODE)** Run, walk, crawl, slide, spin, roll, turn, wriggle, skootch, swing, wave, rock, shake, climb, dive, stroll, trot, gallop, jog, dance, march, jump, bounce, swim, fly, play, ride, drive

## ■ B (motion with respect to a locus)

■ (i) Arrive, return, go, come

■ (ii) Enter exit, cross, depart, travel pass, escape, come in, go out

■ (iii) Reach, approach, visit

# DIXON 1A AFFECT TYPE

\*AFFECT type (Roles: Agent, Target, Manip)

\*AFFECT-a, (come into minimal contact with Target),

\*touch, stroke

\*AFFECT-b, (Manip moves through the air to impact Target),

\*hit, strike, punch, bump, kick, knock, tap, bash, slap, spank; whip, belt, stone, cane, hammer; shoot

\*AFFECT-c, (pointed Manip penetrates the Target),

\*pierce, stab, dig, sting, knife, cut, prune, mow, saw, slice, chop,

\*AFFECT-d, (Manip affects the surface of Target),

\*rub, wipe, scrape, scratch, mark; sweep, brush, polish, wash

\*AFFECT-e, (Manip moves into/out of juxtaposition with the target),

\*wrap; cover; roof; dress, grease: plaster, paint, coat; surround, frame; put NP on; unwrap, uncover, take NP off, peel,

\*AFFECT-f, (Agent uses Manip to change the shape or state of Target),

\*stretch, extend, compress, bend, curl, fold, coil; twist, pinch, squeeze; vaporize, liquefy, solidify, melt; dissolve; freeze, cool (down), warm (up), heat (up), burn,

\*AFFECT-g, (manufacturing and cooking a Product),

\*build, tie, make, weave, shape, form, stir, mix, fry, bake, cook; repair; draw, write,

\*AFFECT-h, (Agent causes Target to lose its unity)

\*break, crush, squash, destroy, damage, wreck, collapse; tear, split, chip, crack, smash, crash; burst, explode, blow NP up, let NP off, erupt

# DIXON & LEVIN [FOUR VERBS]

■ AFFECT-A TOUCH

■ AFFECT-B HIT

■ AFFECT-C CUT

■ AFFECT-H BREAK

# BASIC PATTERN

- **NOUN-VERB-NOUN**

- HE TOUCHED THE BOOK.

- HE HIT THE MOSQUITO.

- HE CUT THE BREAD.

- HE BROKE THE WINDOW.

# MIDDLE ALTERNATION

- **\*THE BOOK TOUCHES EASILY.**
- **\*THE MOSQUITO HITS EASILY.**
- **THE BREAD CUTS EASILY.**
- **THE WINDOW BREAKS EASILY.**

# CONATIVE ALTERNATION

- \*HE TOUCHED AT THE BOOK.
- HE HIT AT THE MOSQUITO.
- HE CUT AT THE BREAD.
- \*HE BROKE AT THE WINDOW.

# BODY-PART POSSESSOR

■ HE TOUCHED HER ON THE ARM.

■ HE HIT HER ON THE ARM.

■ HE CUT HER ON THE ARM.

■ \*HE BROKE HER ON THE ARM.

■ [NB: HE BROKE HER ARM.]

# SUMMARY

	TOUCH	HIT	CUT	BREAK
CONATIVE	No	YES	YES	No
MIDDLE	No	No	YES	YES
BODY-PART	YES	YES	YES	No

# DIXON 1B

1B verb types (Complement clauses in Sub or Obj slots; OBJ may be activity)

**SEE THAT...**

**THINK THAT...**

**DECIDE THAT**

**SAY THAT...**

**LIKE DOING ...**

**... WORRY**

**ACT LIKE ...**

# DIXON 2A

- SEMANTIC MODIFICATION
- OBLIGATORY LINKING TO ANOTHER VERB
- S IS SUBJECT OF BOTH VERBS
  - WILL; BE ABOUT TO, START, KEEP, STOP
  - TRY; SUCCEED IN; MANAGE TO; PRACTICE; DARE TO

# DIXON 2B

- SAME BUT, V1 AND V2 MAY HAVE DIFFERENT S
- WANT; EXPECT; INTEND
- POSTPONE, DELAY

# DIXON 2C

- **S OF V1 IS USUALLY DIFFERENT FROM V2**
  - **MAKE, FORCE**
  - **LET, ALLOW**
  - **PREVENT, SPARE**
  - **HELP, SUPPORT**

# DIXON 2D

- **ARBITER (3RD ROLE)**
- **SEEM, APPEAR, LOOK**
- **MATTER, COUNT**

# WHAT TO DO WITH ALL THIS DATA?

- **COMPUTERIZE IT, OF COURSE.**
- **MAKE IT INTERACTIVE.**
- **HOW?**



REVMEDIA IS NOW FREE AND IS VERY POWERFUL

# Test page for ascii numbers

A a new paper in PLoS ONE Genetic Variation and Recent Positive Selection in Worldwide Human Populations Evidence from Nearly Million SNPs Our analyses both confirm and extend previous studies in particular we

Count the words in a clean text

the	60	A	13
of	28	about	2
and	26	across	1
in	22	Adygei	2
to	18	Affy	1
A	13	Affymetrix	1
that	13	Afghanistan	2
Fast	9		

Next

YOU CAN SAVE “STACKS” AS REVLETS  
(WEB-EXECUTABLE OBJECTS)

1 1 accept 06 20 [consider or hold a	37 1 accomplish 49 [put in effect] SE	73 1 depart 80 04 74 34 [move away	109 1 appeal 04 06 [take a court cas
1 1 add 06 65 15 16 [make an additi	37 1 analyze 06 [consider in detail a	73 1 flag 04 06 [communicate or sig	109 1 calibrate 06 [make fine adjust
1 1 agree 04 08 20 22 [be in accord	37 1 bear 06 65 [have] SENSE1 #1 F	73 2 flatten 80 [become flat or flatte	109 1 cluster 04 56 17 [come togeth
1 1 answer 04 07 20 21 [react verba	37 3 belong 75 17 [be in the right pl	73 2 forgive 06 09 [absolve from pa	109 1 draft 06 [draw up an outline o
1 2 appear 80 04 67 31 [come into s	37 3 bind 06 65 16 [make fast; tie or	73 1 fry 04 [be excessively hot] SEN	109 1 hamper 64 65 [prevent the pr
1 1 ask 04 44 29 79 23 [inquire abo	37 1 clothe 06 07 [provide with clot	73 4 greet 64 65 [be perceived by] S	109 5 launch 49 65 16 [get going; g
1 1 attempt 06 22 [make an effort o	37 1 comfort 07 64 [give moral or e	73 5 grind 06 65 [reduce to small pi	109 1 magnify 80 06 65 [increase in
1 2 become 07 65 [undergo a chang	37 2 crack 80 [make a very sharp ex	73 2 heal 80 55 [get healthy again] S	109 1 mirror 64 65 [reflect as if in a

13 1 accuse 07 13 [bring an accusat	49 5 adopt 07 15 [take into one's fa	85 1 beckon 04 06 21 [signal with th	121 1 deteriorate 80 [become worse
13 1 appoint 06 07 [create and char	49 4 approach 80 04 06 07 64 65 [c	85 3 confront 06 07 64 65 [present	121 1 dwell 17 [think moodily or an
13 1 arrest 07 [take into custody] SE	49 5 belong 04 56 17 [be a member	85 1 disseminate 06 [cause to becor	121 1 fumble 04 84 [feel about unce
13 1 board 06 [get on board of (tra	49 4 brush 06 64 65 [sweep across	85 1 enrich 06 64 65 [make better o	121 1 inject 07 12 [give an injection
13 2 catch 06 [perceive with the sen	49 2 communicate 04 06 10 [transm	85 1 execute 07 [kill as a means of s	121 3 interview 04 33 [go for an inte
13 1 collect 06 [get or gather togeth	49 1 contact 07 64 [be in or establis	85 2 initiate 06 [take the lead or initi	121 1 materialize 80 [come into beir
13 1 compete 33 04 [compete for sc	49 2 dominate 80 04 [be in control]	85 1 snap 04 17 20 [utter in an angr	121 1 mold 06 [form in clay; wax; et
13 1 cool 49 65 [make cool or coole	49 2 exceed 06 65 [be superior or b	85 2 strive 04 17 [to exert much eff	121 3 process 06 [perform mathem

25 7 accept 06 [tolerate or accomm	61 8 advance 06 65 [develop further	97 4 acknowledge 06 [express oblig	133 1 centralize 80 06 [make centra
25 1 advance 80 04 [move forward;	61 3 attend 65 [to accompany as a c	97 5 adjust 06 [decide how much is	133 1 condense 80 [undergo conde
25 1 allow_in 47 73 15 [allow to ente	61 2 behave 54 [behave in a certain	97 2 back 56 68 [travel backward] SI	133 1 cripple 06 64 65 [deprive of s
25 4 arise 80 [result or issue] SENSE	61 1 branch_out 80 04 48 [vary in o	97 1 combat 04 06 07 [battle or con	133 2 defy 65 [elude; especially in a
25 1 block 48 65 [render unsuitable	61 1 burn_off 49 65 [use up (energy	97 1 enlist 04 [join the military] SEN	133 3 dissolve 80 [come to an end]
25 1 break_away 04 34 17 [move av	61 16 catch 16 [cause to become ac	97 1 merit 06 65 [be worthy or dese	133 1 emit 06 65 [expel (gases or o
25 1 break_off 49 65 [interrupt befo	61 6 check 49 [put a check mark on	97 1 plague 64 65 [cause to suffer a	133 3 exert 07 [make a great effort
25 1 build_on 65 [be based on; of th	61 2 comfort 06 07 [lessen pain or c	97 5 resolve 06 [make clearly visible	133 2 field 04 [play as a fielder] SEN

1 accept 06 20 [consider or hold as true] SENSE1 #1 People accepted something. #2 People accepted that [SE  
 1 add 06 65 15 16 [make an addition (to); join or combine or unite with others; increase the quality; quantity; s  
 1 agree 04 08 20 22 [be in accord; be in agreement] SENSE1 #1 People agreed. #2 People agreed on somethir  
 1 answer 04 07 20 21 [react verbally] SENSE1 #1 People answered. #2 People answered people. #3 People an  
 2 appear 80 04 67 31 [come into sight or view] SENSE2 #1 Something appeared. #2 People appeared. #3 Sor  
 1 ask 04 44 29 79 23 [inquire about] SENSE1 #1 People asked. #2 People asked what [SENTEFNCF]. #3 People :

Group 1 = 859  
 Group 2 = 560  
 Group 3 = 470  
 Group 4 = 334  
 Group 5 = 298  
 Group 6 = 204

Make 144 htmls

group totals

# USING RUNREV TO GENERATE HTML FILES

## Preview Quiz Rank 1

Start again

Watch [ Sense 2]

marks: -/1

Choose one answer.

- A. do (A THING) to entertain people, for example by acting a play or playing a piece of music
- B. fail to agree with; be in violation of; as of rules or patterns
- C. develop into
- D. give your attention to (a situation, an event, etc.)

Submit

Measure [ Sense 1]

marks: -/1

Choose one answer.

- A. determine the measurements of something or somebody
- B. to cause (SOMEONE) to become adjusted to or familiar with SOMETHING
- C. give certain properties to something
- D. fly upwards or high in the sky

Submit

Return [ Sense 1]

marks: -/1

Choose one answer.

- A. reach the point where one should be after a delay
- B. become a participant; be involved in
- C. come or go to a place again
- D. make smaller

Submit

# GENERATE QUIZZES

```

2  put 0 into z
3  put empty into fld 4 of cd 2
4  repeat with x=1 to 12
5    --get the field
6    put fld (x) into tField
7    --
8    --
9    set the thumbpos of scrollbar "prg" to round((x/12)*100)
10   --next repeat --test
11   -- put (x-1)*12+1 into rankno1
12   repeat for each line xline in tField
13
14     --cycle through the field
15     put word 1 of xline into rankno
16     put word 2 of xline into sense
17     put word 3 of xline into verb
18     put wordoffset("[",xline) into g1
19     put wordoffset("]",xline) into g2
20     put word g1 to g2 of xline into gloss
21     --getframes
22     put empty into frames
23     put empty into count
24     put empty into skip
25     repeat
26       add 1 to count
27       put wordoffset("#",xline,skip) into f1
28       if f1=0 then exit repeat
29       add f1 to skip
30       put wordoffset("#",xline,skip+1) into f2
31       if f2=0 then put word skip to -1 of xline into item count of frames
32       else put word skip to f2+skip of xline into item count of frames
33     end repeat
34     subtract 1 from count
35

```

# REVTALK PROGRAM

# Rank Level 77 (15 verbs) Computer Science Verb L

vel

[Rank 1](#) [Rank 2](#) [Rank 3](#) [Rank 4](#) [Rank 5](#) [Rank 6](#) [Rank 7](#) [Rank 8](#) [Rank 9](#) [Rank 10](#) [Rank 11](#) [Rank 12](#)  
[Rank 13](#) [Rank 14](#) [Rank 15](#) [Rank 16](#) [Rank 17](#) [Rank 18](#) [Rank 19](#) [Rank 20](#) [Rank 21](#) [Rank 22](#) [Rank 23](#) [Rank 24](#)  
[Rank 25](#) [Rank 26](#) [Rank 27](#) [Rank 28](#) [Rank 29](#) [Rank 30](#) [Rank 31](#) [Rank 32](#) [Rank 33](#) [Rank 34](#) [Rank 35](#) [Rank 36](#)  
[Rank 37](#) [Rank 38](#) [Rank 39](#) [Rank 40](#) [Rank 41](#) [Rank 42](#) [Rank 43](#) [Rank 44](#) [Rank 45](#) [Rank 46](#) [Rank 47](#) [Rank 48](#)  
[Rank 49](#) [Rank 50](#) [Rank 51](#) [Rank 52](#) [Rank 53](#) [Rank 54](#) [Rank 55](#) [Rank 56](#) [Rank 57](#) [Rank 58](#) [Rank 59](#) [Rank 60](#)  
[Rank 61](#) [Rank 62](#) [Rank 63](#) [Rank 64](#) [Rank 65](#) [Rank 66](#) [Rank 67](#) [Rank 68](#) [Rank 69](#) [Rank 70](#) [Rank 71](#) [Rank 72](#)  
[Rank 73](#) [Rank 74](#) [Rank 75](#) [Rank 76](#) [Rank 77](#) [Rank 78](#) [Rank 79](#) [Rank 80](#) [Rank 81](#) [Rank 82](#) [Rank 83](#) [Rank 84](#)  
[Rank 85](#) [Rank 86](#) [Rank 87](#) [Rank 88](#) [Rank 89](#) [Rank 90](#) [Rank 91](#) [Rank 92](#) [Rank 93](#) [Rank 94](#) [Rank 95](#) [Rank 96](#)  
[Rank 97](#) [Rank 98](#) [Rank 99](#) [Rank 100](#) [Rank 101](#) [Rank 102](#) [Rank 103](#) [Rank 104](#) [Rank 105](#) [Rank 106](#) [Rank 107](#) [Rank 108](#)  
[Rank 109](#) [Rank 110](#) [Rank 111](#) [Rank 112](#) [Rank 113](#) [Rank 114](#) [Rank 115](#) [Rank 116](#) [Rank 117](#) [Rank 118](#) [Rank 119](#) [Rank 120](#)  
[Rank 121](#) [Rank 122](#) [Rank 123](#) [Rank 124](#) [Rank 125](#) [Rank 126](#) [Rank 127](#) [Rank 128](#) [Rank 129](#) [Rank 130](#) [Rank 131](#) [Rank 132](#)  
[Rank 133](#) [Rank 134](#) [Rank 135](#) [Rank 136](#) [Rank 137](#) [Rank 138](#) [Rank 139](#) [Rank 140](#) [Rank 141](#) [Rank 142](#) [Rank 143](#) [Rank 144](#)

**abandon R77 [Sense 2]** [to leave and never return to (SOMETHING)] [ALC] [Breen] [WordNet] [LDO] [LDOC] [Grok]

- #1 People abandoned something.
- #2 People abandoned people.

**astonish R77 [Sense 1]** [to cause a feeling of great wonder or surprise in (SOMEONE)] [ALC] [Breen] [WordNet] [LDO] [LDOC] [Grok]

- #1 People astonished people.
- #2 Something astonished people.

144 WEB PAGES WITH AUTOMATICALLY  
LINKED VERB DATA

# University of Aizu

## Computer Science Verb List

### Alpha List

on (Sense#2) abandon [to leave and never return to (SOMETHING)]  
d (Sense#1) abound [be abundant or plentiful; exist in large quantities]  
d\_in (Sense#1) abound in [exist in large quantity]  
ct (Sense#1) abstract [consider a concept without thinking of a specific example; consider theoretically]  
ct (Sense#3) abstract [consider apart from a particular case or instance]  
rate (Sense#1) accelerate [to move faster : to gain speed]  
rate (Sense#2) accelerate [to cause (SOMETHING) to happen sooner or more quickly]  
uate (Sense#1) accentuate [make (SOMETHING) more noticeable]  
 (Sense#1) accept [to believe that what (SOMEONE) says is right or true]  
 (Sense#2) accept [to receive or take (SOMETHING offered)]  
 (Sense#3) accept [to decide to do what (SOMEONE) suggests you should do]  
 (Sense#4) accept [react favorably to; consider right and proper]  
 (Sense#5) accept [to allow (SOMEONE) to become part of a group, society, or organization]  
 (Sense#7) accept [to decide that there is nothing you can do to change a difficult and unpleasant situation]  
modate (Sense#1) accommodate [be agreeable or acceptable to]  
modate (Sense#3) accommodate [provide people with something desired or needed]  
modate (Sense#4) accommodate [have room for; hold without crowding]

AUTOMATICALLY GENERATED  
ALPHABETIZED LIST

## Enter a new verb.

NEW VERB

Enter Verb and Click.

Any English verb. Add an asterisk\* for phrasal verbs!

### Irregular forms: try tried

1.1: try out

1.2: Sentence Patterns

---- Somebody tried out something.

1.3: put to the test, as for its quality, or give experimental use to

1.4: 202531625

### 日本語

1.1: 試験 [しけん] する examination/test/study/trial/(P)/

1.2: 試用 [しよう] する trial/experimental use/

1.3: 試す [ためす] v5s/vt to attempt/to test/(P)/

1.4: 試行 [しこう] する making an attempt/trial run/(P)/

1.5: テスト する test/(P)/

2.1: try out

[less frequent use]

2.2: Sentence Patterns

---- Somebody tried out.

2.3: perform in order to get a role

2.4: 201718535

DYNAMICALLY SERVED VERB DATA  
FROM SQL DATABASE

Editing server file "test2.irev"

```
1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
2     "http://www.w3.org/TR/html4/loose.dtd">
3 <?rev
4 put "<table cellpadding='5'>"
5     repeat with x = 1 to 10
6         put "<tr>"
7         repeat with y= 1 to 10
8             put "<td>" & numtochar(x+65) && (x * y) & "</td>"
9         end repeat
10        put "</tr>"
11    end repeat
12 put "</table>"
13 ?>
14
15
16
17
```

# MAKING CGI SCRIPTS WITH IREV

```

1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
2   "http://www.w3.org/TR/html4/loose.dtd">
3 <html lang="en">
4 <head>
5   <meta http-equiv="content-type" content="text/html; charset=utf-8">
6   <title>Hello</title>
7   <meta name="generator" content="BBEdit 9.1">
8 </head>
9 <h1>Random Colors & Table with irev</h1>
10 <hr align="center" size="12" width="360">
11
12
13 <?rev
14 --
15
16 put "aqua, fuchsia, gray, green, lime, maroon, olive, red, silver, teal, white, yellow" into cx
17 put any item of cx into cx
18 put "<body style='&quote;background-color:&cx&quote;'>"
19 put the internet date into tx
20 convert tx to dateitems
21 --put "<p>& tx & "</p>"
22 add 14 to item 4 of tx
23 convert tx to long date and long time
24 put "aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, yellow" into cx
25 put any item of cx into cx
26 put "<h2><p style='&quote;color:&cx&quote;'>"
27 Put "Today's date and time:" && tx & "</p></h2>"
28 put "aqua, fuchsia, gray, green, lime, maroon, olive, red, silver, teal, white, yellow" into cx
29 put any item of cx into cx
30 put "<table cellpadding='6' border='3' bgcolor='&quote;cx&quote;'>"
31 repeat with x = 1 to 10
32 put "<tr>"
33 repeat with y= 1 to 10
34 put "<td>& numtochar(random(25)+65)&numtochar(random(25)+65) && (random(x) * random(y)) & "</td>"
35 end repeat
36 put "</tr>"&return
37 end repeat
38 put "</table>"
39 put "</p>"
40 --
41

```

# CREATING CGI SCRIPTS WITH IREV SERVER

```

1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
2 "http://www.w3.org/TR/html4/loose.dtd">
3 <html lang="jpn">
4 <head>
5 <meta http-equiv="content-type" content="text/html; charset=utf-8">
6 <title>verbdataxj E&J Version 10</title>
7 <meta name="generator" content="BBEdit 9.1">
8 </head>
9 <body>
10 <b>
11 <h1>Enter a new verb.</h1></b>
12 <form action="http://e-land.on-rev.com/verbdatax10.irev" method="post" id="verb" name="verb">
13 <input name="putverb" type="text" value="NEW VERB">
14 <button type="submit" id="myverb" value="submit"><IMG SRC="../../pix/EnterVerb.jpg" HEIGHT=21 WIDTH=146 ALT="btn" ALIGN="ABSMIDDLE"><STRONG> Any English ve
15
16
17 <?rev
18 put format("<BR><hr color=seagreen align=\"left\" size=\"12\" width=\"600\"><br>")
19 --get form data
20 put $_POST["putverb"] into vb
21 --change to sql format
22 replace "*" with "%" in vb
23 if char -1 of vb = space then delete char -1 of vb
24 if vb is empty then put "try out" into vb
25 if vb="NEW VERB" then put "exemplify" into vb
26 --open database
27 put revopenDatabase("mysql","localhost","eland_wn","eland", [redacted]) into tConID
28 --construct statement to get five items
29 put "SELECT lemma,GROUP_CONCAT(frame),SUBSTRING(definition FROM 1 FOR 300), synsetid, tagcount FROM vframemaps INNER JOIN vframes USING (frameid) INNER JOIN w
30 put empty into vbx
31 --there will be a space before the %
32 if char -1 of word 1 of vb = "%" then put empty into char -2 to -1 of word 1 of vb
33 --put vb &"<BR>" --to check content of vb
34 if the number of words in vb > 1 then put word 1 of vb into vbx else put vb into vbx
35 --deal with phrasal verbs
36 --get two data items ... lemma will match lemma above
37 put "SELECT lemma,morph FROM morphmaps INNER JOIN morphs USING (morphid) INNER JOIN words USING (wordid) WHERE lemma = "&quote&vbx&quote into tSQL2
38 --get irregular forms
39 --tconID is the connection number
40 if tConID is a number
41 then
42 --this sets up the chracter set for client-server exchange
43 revExecuteSQL tConID,"SET NAMES 'utf8'"
44 put revDataFromQuery(tab,return,tConID,tSQL) into tList
45 put revDataFromQuery(tab,return,tConID,tSQL2) into tList2
46 set the itemdel to tab
47 put the number of lines in tList into numSenses --number of senses
48 put the number of lines in tList2 into numIrregPairs --number of base-irregular pairs

```

# USING IREV SCRIPT TO DYNAMICALLY ACCESS MYSQL DATABASE

Database

\_wn (57)

eland\_wn (57)

- adjectiveswithpositions
- adjpositions
- adjpositiontypes
- avl2wn
- avl2wnJPN
- avlSerial
- avlSerial2
- bnconvtasks
- bncimagingfs
- bnCS
- bnCSpwrS
- casedwords
- dict
- lexdomains
- lexlinks
- linktypes
- morphmaps
- morphology
- morphs
- postypes
- samples
- samplesets
- semlinks
- senses
- sensesXlexlinksXsenses
- sensesXsemilinksXsenses
- sensesXsynsets
- synsets
- synsetsJPN
- synsetsXsemilinksXsynsets
- verbnetframes
- verbnetroles
- verbswithframes
- vframemaps
- vframes
- vframesentencemaps

	Table	Action	Records	Type	Collation	Size	Overhead
<input type="checkbox"/>	adjectiveswithpositions		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	adjpositions		1,055	MyISAM	latin1_swedish_ci	25.3 KiB	-
<input type="checkbox"/>	adjpositiontypes		3	MyISAM	latin1_swedish_ci	2.1 KiB	-
<input type="checkbox"/>	avl2wn		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	avl2wnJPN		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	avlSerial		3,315	MyISAM	utf8_unicode_ci	520.5 KiB	-
<input type="checkbox"/>	avlSerial2		3,315	MyISAM	utf8_unicode_ci	540.5 KiB	-
<input type="checkbox"/>	bnconvtasks		495	MyISAM	latin1_swedish_ci	20.1 KiB	-
<input type="checkbox"/>	bncimagingfs		505	MyISAM	latin1_swedish_ci	20.3 KiB	-
<input type="checkbox"/>	bnCS		27,263	MyISAM	latin1_swedish_ci	647.7 KiB	-
<input type="checkbox"/>	bnCSpwrS		465	MyISAM	latin1_swedish_ci	19.3 KiB	-
<input type="checkbox"/>	casedwords		34,003	MyISAM	latin1_swedish_ci	1.1 MiB	-
<input type="checkbox"/>	dict		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	lexdomains		45	MyISAM	latin1_swedish_ci	2.9 KiB	-
<input type="checkbox"/>	lexlinks		92,231	MyISAM	latin1_swedish_ci	3.4 MiB	-
<input type="checkbox"/>	linktypes		28	MyISAM	latin1_swedish_ci	2.6 KiB	-
<input type="checkbox"/>	morphmaps		4,964	MyISAM	latin1_swedish_ci	106.8 KiB	-
<input type="checkbox"/>	morphology		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	morphs		4,903	MyISAM	latin1_swedish_ci	142.4 KiB	-
<input type="checkbox"/>	postypes		5	MyISAM	latin1_swedish_ci	2.1 KiB	-
<input type="checkbox"/>	samples		15,427	MyISAM	latin1_swedish_ci	851.9 KiB	-
<input type="checkbox"/>	samplesets		~0 <sup>1</sup>	View	---	unknown	-
<input type="checkbox"/>	semilinks		285,348	MyISAM	latin1_swedish_ci	6.9 MiB	-
<input type="checkbox"/>	senses		206,941	MyISAM	latin1_swedish_ci	12.6 MiB	-

# MYSQL DATABASE

	Field	Type	Collation	Attributes	Null	Default	Extra	Action						
<input type="checkbox"/>	avIID	int(4)		UNSIGNED	No									
<input type="checkbox"/>	rank	int(3)		UNSIGNED	No									
<input type="checkbox"/>	sensenum	tinyint(3)		UNSIGNED	No									
<input type="checkbox"/>	lemma	varchar(64)	latin1_swedish_ci		No									
<input type="checkbox"/>	vDef	varchar(360)	latin1_swedish_ci		No									
<input type="checkbox"/>	patterns	varchar(360)	latin1_swedish_ci		No									

[Check All](#) / [Uncheck All](#) With selected:

[Print view](#)
[Propose table structure](#)

Add  field(s)
  At End of Table
  At Beginning of Table
  After

Indexes:				
Keyname	Type	Cardinality	Action	Field
avIID	INDEX	3315		avIID
lemma	INDEX	1657		lemma
sensenum	INDEX	26		sensenum

Create an index on  columns

Space usage		
Type	Usage	
Data	428.5	KiB
Index	94,208	B
Total	520.5	KiB

Row Statistics	
Statements	Value
Format	dynamic
Collation	utf8_unicode_ci
Rows	3,315
Row length $\sigma$	132
Row size $\sigma$	161 B
Creation	Aug 26, 2009 at 09:13 PM
Last update	Aug 26, 2009 at 09:13 PM
Last check	Aug 26, 2009 at 09:13 PM

# AIZU VERB LIST TABLE

	Field	Type	Collation	Attributes	Null	Default	Extra	Action						
<input type="checkbox"/>	<b>kid</b>	int(6)		UNSIGNED	No	0								
<input type="checkbox"/>	<b>synsetid</b>	int(10)		UNSIGNED	No									
<input type="checkbox"/>	<b>kanji</b>	text	utf8_unicode_ci		Yes	NULL								
<input type="checkbox"/>	<b>kana</b>	text	utf8_unicode_ci		Yes	NULL								
<input type="checkbox"/>	<b>vpos</b>	varchar(16)	utf8_unicode_ci		Yes	NULL								
<input type="checkbox"/>	<b>defBreen</b>	mediumtext	utf8_unicode_ci		Yes	NULL								

[Check All / Uncheck All](#) With selected:

[Print view](#)
[Propose table structure](#)

Add  field(s)
  At End of Table
  At Beginning of Table
  After

Indexes:				
Keyname	Type	Cardinality	Action	Field
<b>PRIMARY</b>	PRIMARY	27738		kid
<b>synsetid</b>	INDEX	5547		synsetid

Create an index on  columns

Space usage		
Type	Usage	
<b>Data</b>	3,173.8	KiB
<b>Index</b>	558.0	KiB
<b>Total</b>	3,731.8	KiB

Row Statistics	
Statements	Value
<b>Format</b>	dynamic
<b>Collation</b>	utf8_unicode_ci
<b>Rows</b>	27,738
<b>Row length <math>\sigma</math></b>	117
<b>Row size <math>\sigma</math></b>	138 B
<b>Creation</b>	Aug 26, 2009 at 09:20 PM
<b>Last update</b>	Aug 26, 2009 at 09:20 PM
<b>Last check</b>	Aug 26, 2009 at 09:20 PM

# LINKED JWN TABLE

	avIID	rank	sensenum	lemma	vDef	patterns
<input type="checkbox"/> Full Texts	1	1	1	add	to put SOMETHING with another thing or group of th...	#1 People added something. #2 Something added s...
<input type="checkbox"/>	2	1	1	agree	to say that you will do, accept, or allow SOMETHIN...	#1 People agreed. #2 People agreed on something...
<input type="checkbox"/>	3	1	1	answer	react verbally	#1 People answered. #2 People answered people...
<input type="checkbox"/>	4	1	2	appear	come into sight or view	#1 Something appeared. #2 People appeared. #3 ...
<input type="checkbox"/>	5	1	1	ask	to say or write SOMETHING to SOMEONE as a way of g...	#1 People asked. #2 People asked what [SENTENCE...
<input type="checkbox"/>	6	1	1	attempt	to try to do SOMETHING : to try to accomplish or c...	#1 People attempted something. #2 People attempt...
<input type="checkbox"/>	7	1	2	become	undergo a change or development	#1 People became people. #2 Something became so...
<input type="checkbox"/>	8	1	2	begin	to start to happen, to exist, to be done, etc.	#1 Something began. #2 Some things were beginn...
<input type="checkbox"/>	9	1	3	believe	be confident about something	#1 People believed that [SENTENCE].
<input type="checkbox"/>	10	1	2	bring	to cause SOMETHING to exist, happen, or start	#1 People brought something. #2 People brought...

# WORDNET DATA IN SQL

←T→		kid	synsetid	kanji	kana	vpos	defBreen
<input type="checkbox"/>	  Full Texts	1	200001740	息衝く	[いきづく]	v5k/vi	to breathe (heavily)/to pant/to gasp/to sigh/
<input type="checkbox"/>	 	2	200001740	吐く	[つく]	v5k/vt	(1) to breathe/(2) to tell (lies)/(3) to vomit/to ...
<input type="checkbox"/>	 	3	200001740	吐く	[はく]	v5k/vt	(1) to breathe/(2) to tell (lies)/(3) to vomit/to ...
<input type="checkbox"/>	 	4	200001740	呼吸	[こきゅう]	vs	(1) breath/respiration/(2) knack/trick/secret (of ...
<input type="checkbox"/>	 	5	200001740	息づく	[いきづく]	v5k/vi	to breathe (heavily)/to pant/to gasp/to sigh/
<input type="checkbox"/>	 	6	200002325	呼吸	[こきゅう]	vs	(1) breath/respiration/(2) knack/trick/secret (of ...
<input type="checkbox"/>	 	7	200002573	呼吸	[こきゅう]	vs	(1) breath/respiration/(2) knack/trick/secret (of ...
<input type="checkbox"/>	 	8	200002724	嘔せ返る	[むせかえる]	v5r/vi	to choke/to sob convulsively/to cough/
<input type="checkbox"/>	 	9	200003662	弾き出す	[はじきだす]	v5s/vt	to shoot (marbles)/to calculate/to spring out/to f...
<input type="checkbox"/>	 	10	200003826	吃逆	[しゃっくり]	vs	(uk) hiccough/hiccup/(P)/
<input type="checkbox"/>	 	11	200004032	大息	[たいそく]	vs	deep sigh/

# JPN WORDNET SYNSET LINKED TO BREEN DEFINITIONS

	Field	Type	Collation	Attributes	Null	Default	Extra	View
<input type="checkbox"/>	synsetid	int(10)		UNSIGNED	No	0		
<input type="checkbox"/>	sensenum	tinyint(3)		UNSIGNED	No			
<input type="checkbox"/>	wordid	mediumint(8)		UNSIGNED	Yes	0		
<input type="checkbox"/>	lemma	varchar(64)	latin1_swedish_ci		No			
<input type="checkbox"/>	avIID	int(4)		UNSIGNED	No			
<input type="checkbox"/>	rank	int(3)		UNSIGNED	No			
<input type="checkbox"/>	vDef	varchar(360)	latin1_swedish_ci		No			
<input type="checkbox"/>	patterns	varchar(360)	latin1_swedish_ci		No			
<input type="checkbox"/>	casedwordid	mediumint(8)		UNSIGNED	Yes	NULL		
<input type="checkbox"/>	senseid	mediumint(8)		UNSIGNED	Yes	NULL		
<input type="checkbox"/>	lexid	tinyint(3)		UNSIGNED	No	0		
<input type="checkbox"/>	tagcount	mediumint(8)		UNSIGNED	Yes	NULL		
<input type="checkbox"/>	sensekey	varchar(100)	latin1_swedish_ci		Yes	NULL		
<input type="checkbox"/>	pos	enum('n', 'v', 'a', 'r', 's')	latin1_swedish_ci		Yes	NULL		
<input type="checkbox"/>	lexdomainid	tinyint(3)		UNSIGNED	No	0		
<input type="checkbox"/>	definition	mediumtext	latin1_swedish_ci		Yes	NULL		
<input type="checkbox"/>	kid	int(6)		UNSIGNED	Yes	0		
<input type="checkbox"/>	kanji	text	utf8_unicode_ci		Yes	NULL		
<input type="checkbox"/>	kana	text	utf8_unicode_ci		Yes	NULL		
<input type="checkbox"/>	vpos	varchar(16)	utf8_unicode_ci		Yes	NULL		
<input type="checkbox"/>	defBreen	mediumtext	utf8_unicode_ci		Yes	NULL		

FULLY LINKED “VIEW”

# CONCLUSIONS

- **TEACH VERBS**
  - **USE SEMANTICS**
- **CLASSIFY VERBS**
  - **USE RUNREV (MEDIA) TO WORK WITH LANGUAGE DATA**