Scientific Writing in English: Techniques and Tools

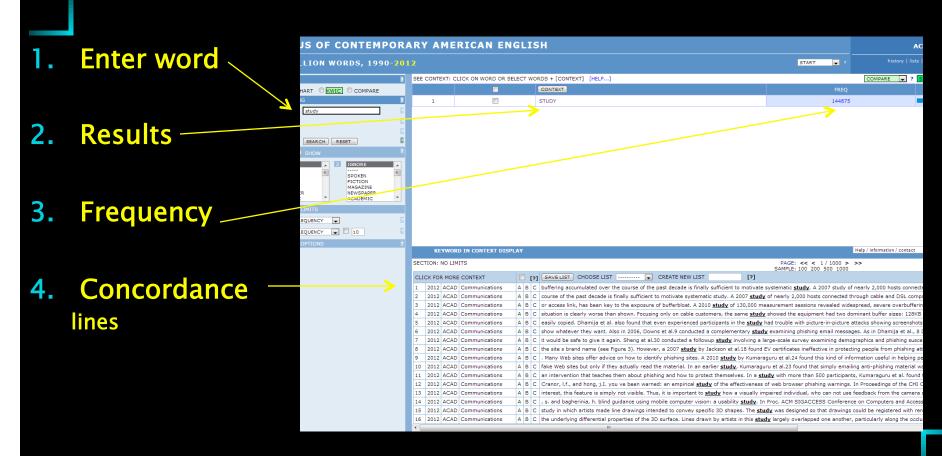
Examples Using COCA

Ethel Schuster, Ph.D.
Northern Essex Community College, USA
eschuster@necc.mass.edu

COCA

- Main tool available is concordancer
 - Shows ALL occurrences of word(s)
 - Called a KWIC (Keyword In Context) concordance, i.e., word shown in context
 - Larger portion of context obtained by clicking on concordance line

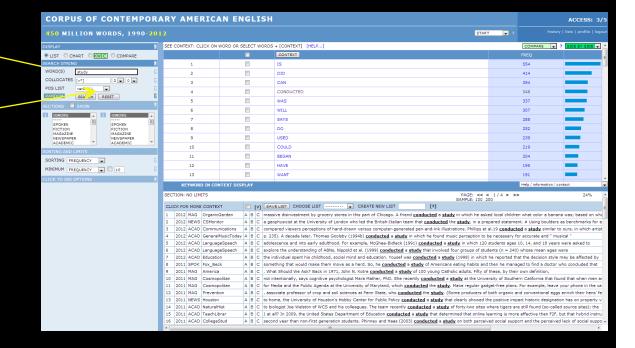
Search: study



Search: study "co-occurs" with?

- Enter word -
- 2. Enter category, e.g., any verb

Can be done with COLLOCATES



Results?

- Show list of verbs that occur in specified position(s)
- Can identify conducted as frequent collocate, which would give us verbal collocation:

conduct a study.

Results?

- Go down in the list, find
 - Conduct (position 20) with 117 occurrences
 - conducted shows 348 occurrences

What we learn?

This also tells us that
 conducted a study is twice as
 common as conduct a study

In other words, the collocation occurs more frequently in its past form

Verbs + "study"

 See first 20 verbs that occur 1 or 2 positions to the right of study

conducted is among them

	CONTEXT	FREQ
1	WAS	<u>7175</u>
2	<u>IS</u>	<u>3464</u>
3	WERE	<u>2530</u>
4	FOUND	<u>2398</u>
5	CONDUCTED	<u>1487</u>
6	HAS	<u>1162</u>
7	ARE	<u>1109</u>
8	SHOWED	<u>927</u>
9	PUBLISHED	<u>882</u>
10	<u>BE</u>	<u>812</u>
11	EXAMINED	<u>737</u>
12	REPORTED	<u>714</u>
13	HAD	<u>674</u>
14	DID	<u>663</u>
15	SHOWS	<u>559</u>
16	HAVE	<u>549</u>
17	WILL	<u>538</u>
18	SUGGESTS	<u>530</u>
19	SUGGEST	<u>488</u>
20	INCLUDED	<u>466</u>

Other verbs?

- Related to what the study investigated
 - what the *study* ... *showed/shows/ suggests*
- >> Examine concordance lines for each verb to establish exact context in which collocation is customarily used

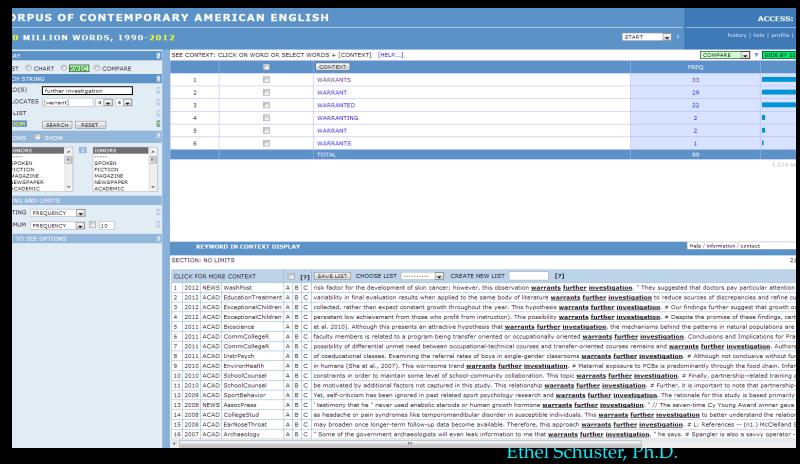
NOTE

- Unexpected results occur
- E.g., adjectives + "investigation"?
 Yields "further investigation"

Look at Concordances

- This collocation occurs frequently with the verb WARRANT, as in
 - ✓ These results are consistent with previous findings and warrant further investigation...
 - … this observation warrants further investigation.
 - ✓ Because further investigation of these treatments is warranted, the committee is...
 - ... we believe that further investigation on this topic is warranted.
 - ✓ This hypothesis warrants further investigation.
 - ✓ This possibility warrants further investigation.

Longer conventional expression? Search...



Findings?

- Forms in which WARRANT occurs:
 - 89 occurrences.
- Simple <u>present</u> tense form (62) is more frequent than the <u>past</u> tense (22)

Examine concordance lines...

- Most recurrent structure is
- Det + WARRANT + further investigation

See...

Findings...

Determiner	Noun Phrase	WARRANT	
This	hypothesis	warrants	further investigation.
This	worrisome trend	warrants	further investigation.
This	X.X	warrants	further investigation.
These	findings	warrant	further investigation.
That	X.X	warranted	further investigation.

Concordance for warranted

- Verb in passive construction, e.g.,
 - ... saying no <u>further investigation</u> is <u>warranted</u>.
 - ... reasonable grounds to believe that <u>further investigation</u> is <u>warranted</u>.
 - ✓ <u>Further investigation</u> is <u>warranted</u> to test the thesis that ...
 - ... and found that no <u>further investigation</u> was <u>warranted</u>.

Longer conventional expression? Search...

We find

"reasonable grounds to believe that further investigation is warranted"

In 5 of the 22 concordance lines

Examples found

- ... that the Department of Justice find that no reasonable grounds to believe that further investigation is warranted.
- ... saying there are no reasonable grounds to believe that further investigation is warranted.
- ... if she determines that there are reasonable grounds to believe that further investigation is warranted.
- ... the Attorney General concludes that "there are no reasonable grounds to believe that further investigation is warranted..."
- the Attorney General determines that reasonable grounds do exist to believe that further investigation may be warranted.

Closing Remarks

- Sometimes field of work is too specific
- Corpora do not have enough material in domain to answer all your questions

>> Should build customized corpus