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COMPUTATIONAL LINGUISTICS FOR DISCOURSE ANALYSIS

(Computational) Discourse Analysis

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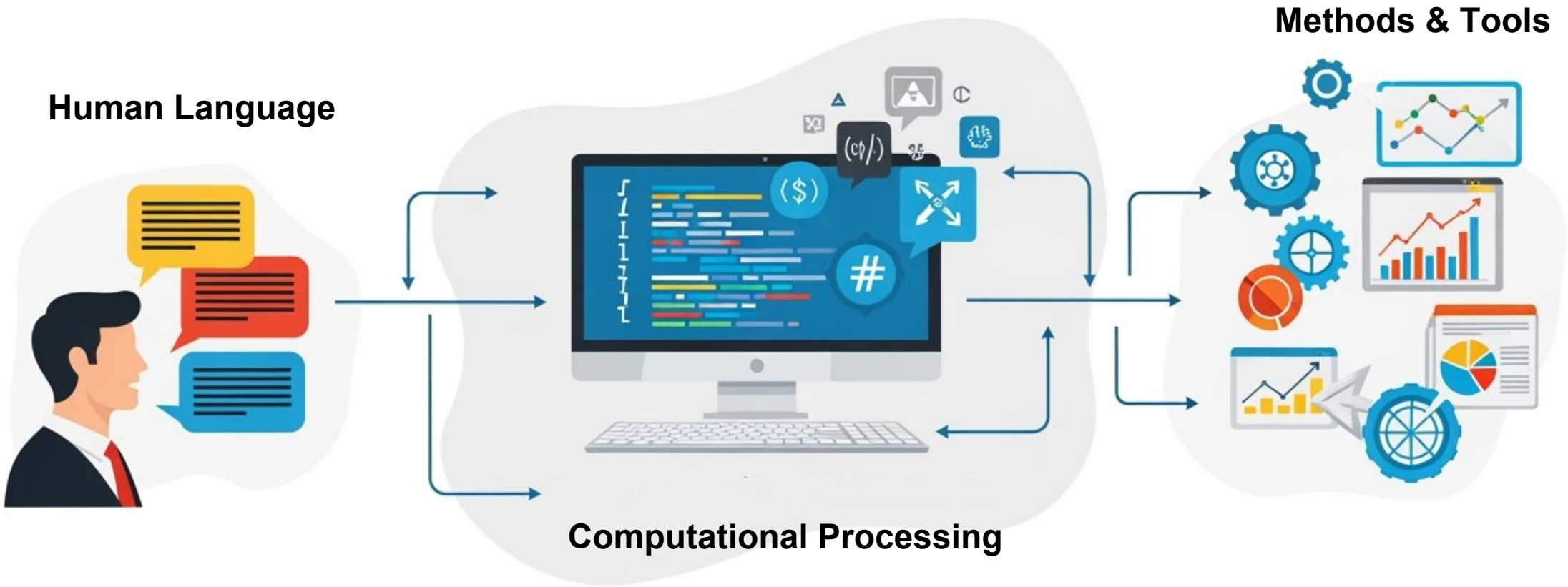
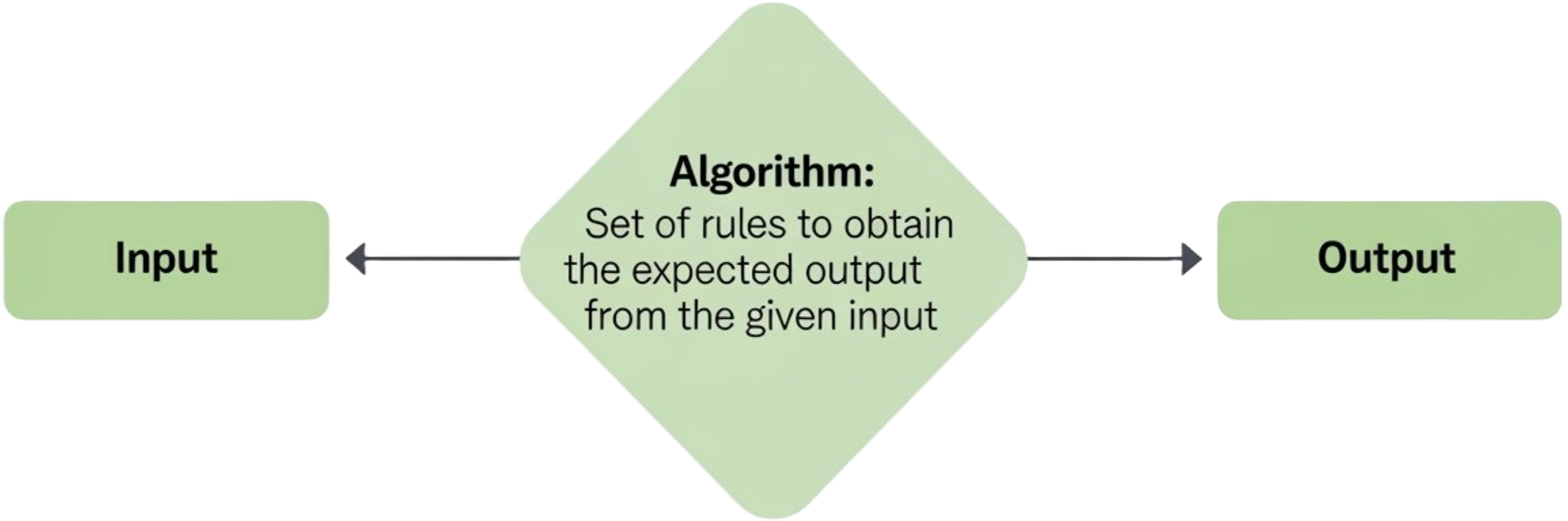
COMPUTATIONAL LINGUISTICS



COMPUTATIONAL LINGUISTICS



COMPUTATIONAL LINGUISTICS

```python
def find_max(numbers):
    # Step 1: Set max to the first number in the list
    max_num = numbers[0]
    # Step 2: Loop through each number in the list
    for num in numbers:
        # Step 3: If current number is greater than max_num, update max_num
        if num > max_num:
            max_num = num
    # Step 4: Return the maximum number found
    return max_num

# Example usage:
numbers = [66.01, 7.268, 2, 112, 112.01]
```

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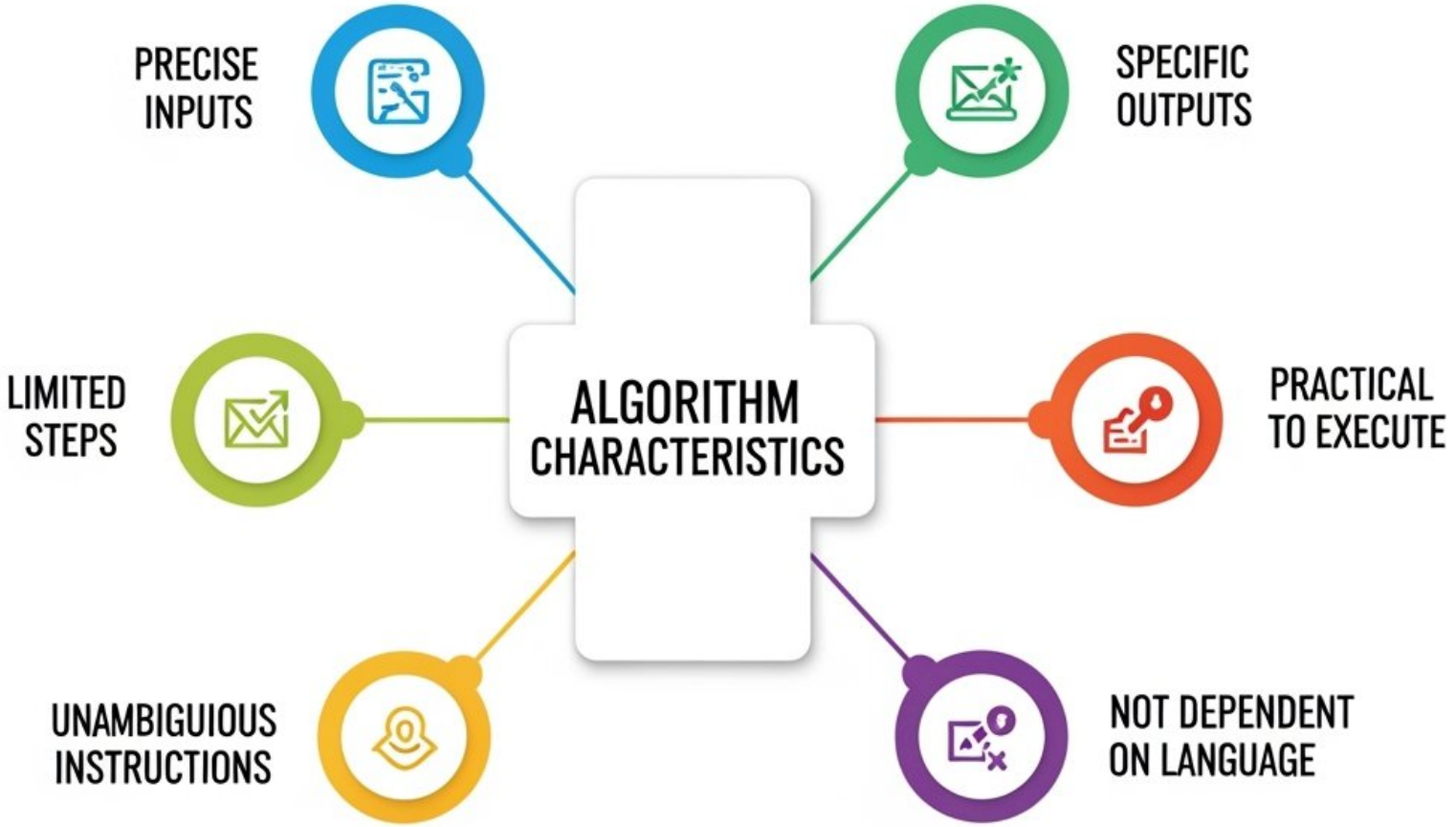
COMPUTATIONAL LINGUISTICS

```
# Example usage:
numbers = [66.01, 7.268, 2, 112, 112.01]
print(find_max(numbers))
```

```
112.01
```



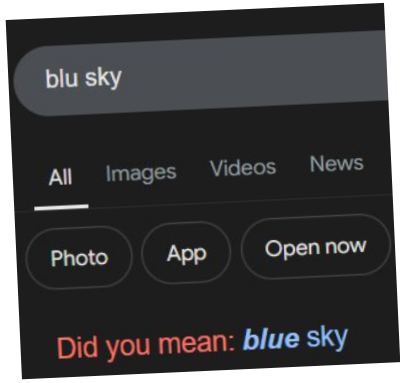
COMPUTATIONAL LINGUISTICS

- Investigates ways to automatically process and understand human language

- Examines the mathematical and logical features of natural language

a) *I wrote a poem*
b) *A poem wrote me!*

- Focuses on creating algorithms and statistical methods for automating language processing



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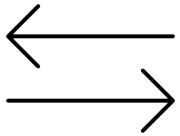
DISCOURSE

❑ Discourse as language in use

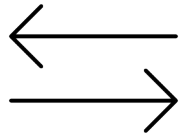
Language in Context

Words gain meaning through social and cultural contexts, not in isolation



Connected Text

Sentences relate to each other through cohesion and coherence patterns



Social Practice

Language both reflects and constructs social relationships and power dynamics

DISCOURSE

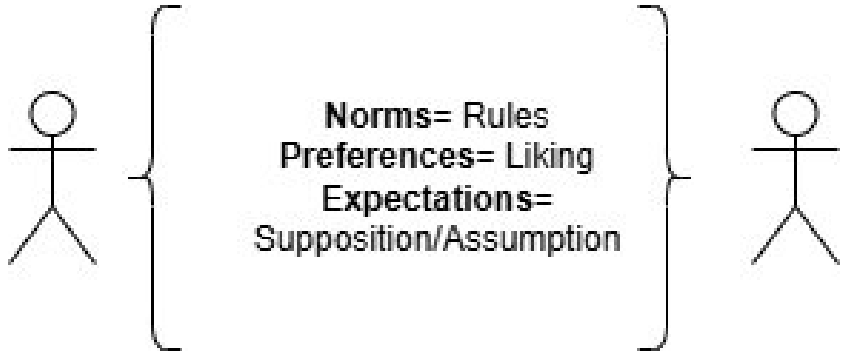
- **Text**

  Sometimes used in place of discourse

Since both refer to language used in a meaningful way beyond single sentences (e.g. news article, social media post, book…)

TL;DR

Discourse is language in action.



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DISCOURSE

❖ The Manual Approach

A Human Puzzle

"Discourse analysts would sometimes **cherry-pick** cases…so results were less likely to be **representative.**"

It was like a magnifying glass: incredibly detailed, but focused

On a specific or singular aspect.

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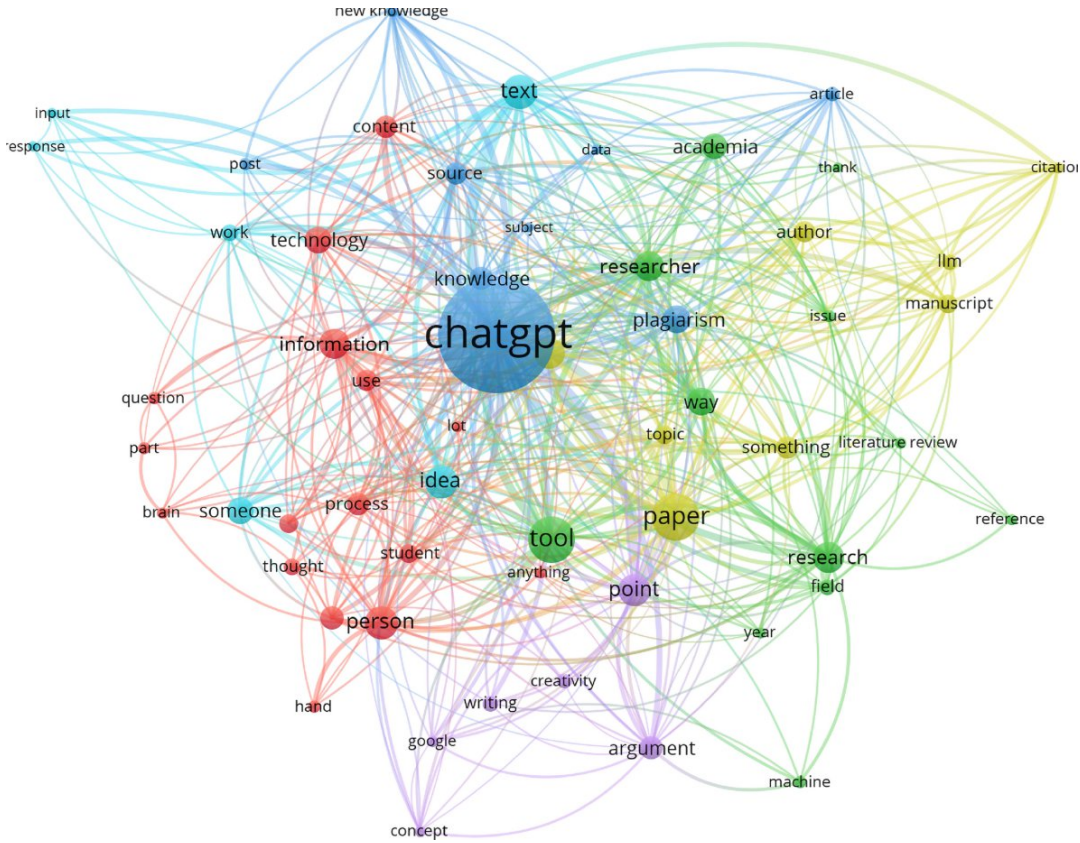
(COMPUTATION)DISCOURSE ANALYSIS

❖ Analysis at Scale

Like a satellite image, it can see the full landscape but misses the human-level detail.



Early Reactions to ChatGPT

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(COMPUTATION)DISCOURSE ANALYSIS

❖ **Discourse analysis as the analysis in language use**

Discourse Analysis the study of the way sentences connect to create a larger meaning in larger units

(COMPUTATION)DISCOURSE ANALYSIS

❖ What & How

- **What is being said?**

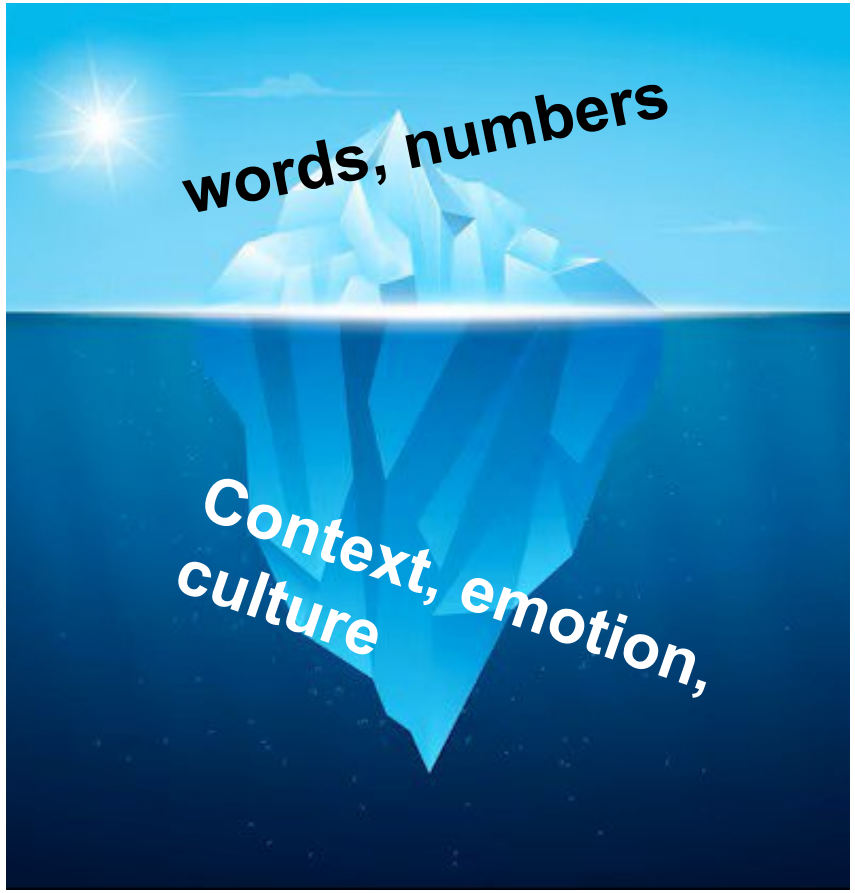
This question asks how a series of sentences build on each other to give extra meaning.

- **How does it affect the meaning?**

This question looks at how the context (the situation, background, or setting) changes the meaning of a sentence.

a) It's hot in here. *Observation*

b) It's hot in here. *Open a window*



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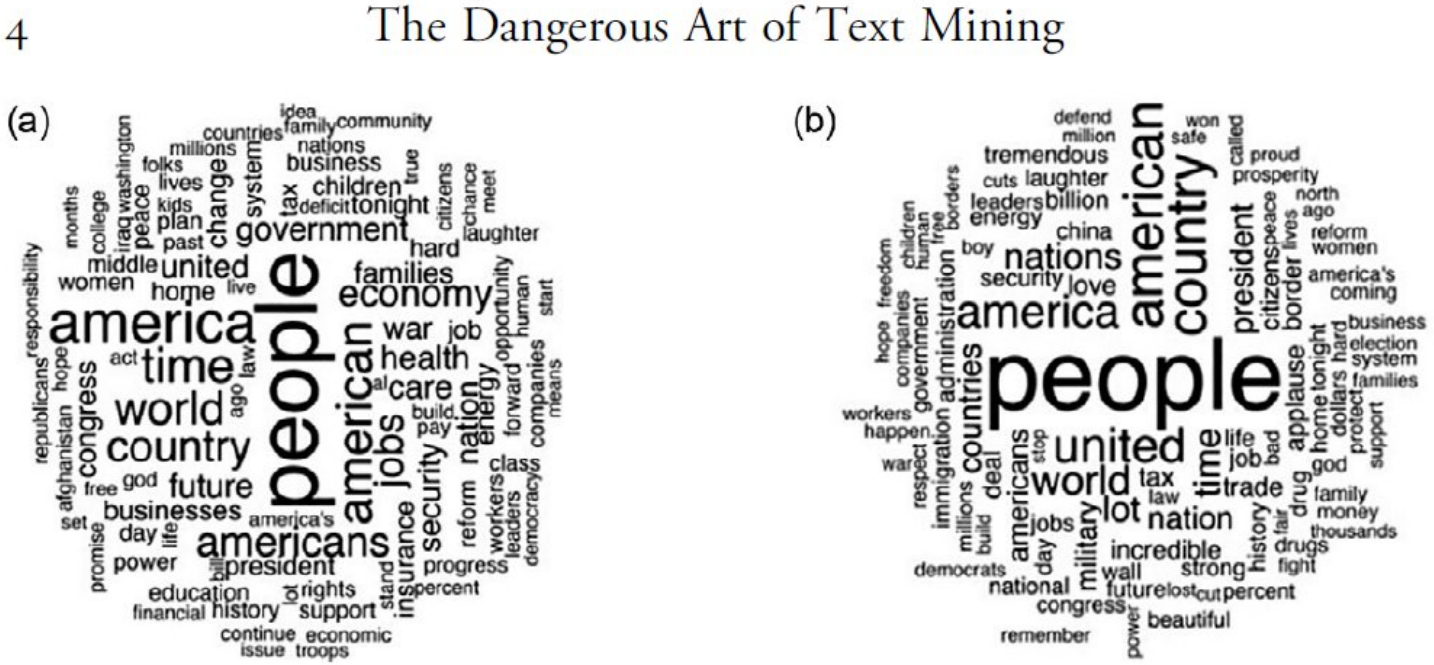
(COMPUTATION)DISCOURSE ANALYSIS



Source
:
https://www.cambridge.org/core/books/the-dangerous-art-of-text mining/C07F637BB12F7D89CF9295F02EF44905

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(COMPUTATION)DISCOURSE ANALYSIS

❖ Matheson's Core Arguments

1 Risk of Narrowing

Corpus tools can drastically narrow our view of discourse if used alone, favoring what's digitized and lexical over interaction, narrative, and genre

2 Resources vs. Usage

Corpora reveal symbolic resources people have available (their "library"), but not necessarily how they use them (their "reading")

3 Human Accomplishment

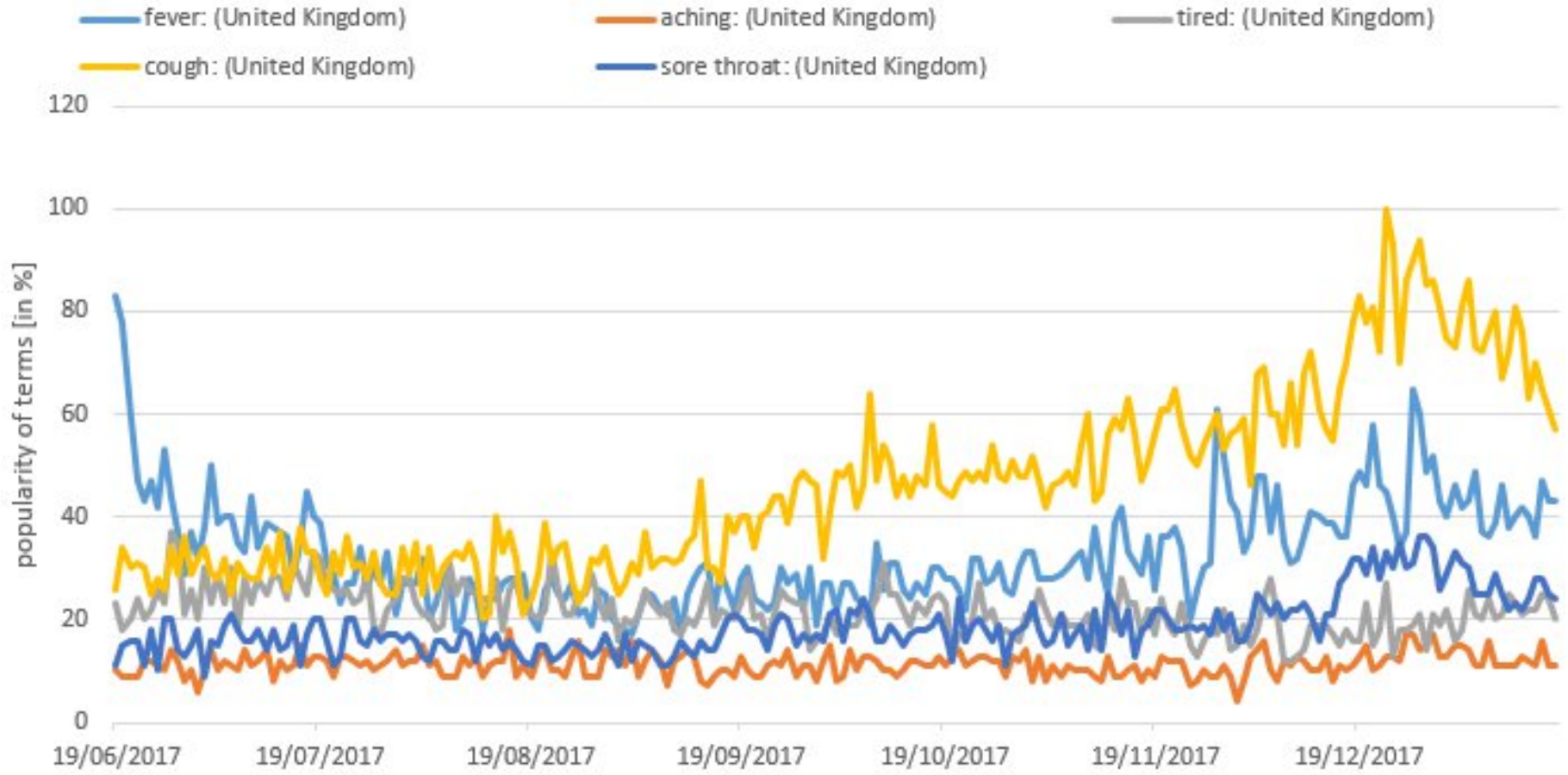
We must reconnect corpora to producers, maintaining ethical commitment to understanding language "as people actually experience it"

4 Beyond Words

Extend analysis beyond lexical patterns to include multimodal elements, text structure, intertextuality, and dynamics of discourse

TEXT DATA

❖ Blind Spots: Google Flu Trends



CULTURAL CONTEXT

❖ **Examples**

a) **“Chairman”** in Ghana
b) **“Boss”** in the UK
c) **“Chef”** in France
…

“Inshallah” (God Willing) in Arabic

Same word, different meanings based on:

a) Tone (sincere vs. sarcastic)
b) Religious vs. casual context
c) Speaker's cultural background