# (Informal) Logic: Basics

WRIT 0590: Module 2.1

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Overview

Structure of the Outline

Research Papers

▶ Begin reading the first chapter of the course text.

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- ► We will use logical outlining to:
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- We will use logical outlining to:
  - Analyze chapters from the course text.
  - Develop proposals for major course outputs: white paper, op-ed, and reflection letters.
- ► Logical outlining bridges the final, linearized text the reader sees and the underlying structural (non-linear) relationships within the text.

Surface, linearized text the reader sees



 Underlying, non-linear structure of the text

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Underlying, non-linear structure of the text

► Task A: Extract the underlying structure from a linearized text (= read a paper)

 Surface, linearized text the reader sees



Underlying, non-linear structure of the text

- ► Task A: Extract the underlying structure from a linearized text (= read a paper)
- ► Task B: Transform an underlying structure into linearized text (= write a paper)

# Logical Outline

- ► Here is a simple model of the underlying structure that we'll be using in this course.
  - (1) Minimal logical outline:
    - Premise
    - Proposition
      - Reason
        - Evidence

- Example: Train vs. Car commute.
- ▶ Step 1: Premises (Why is this topic important?)
- (2) Minimal logical outline:
  - (Premise 1:) Many people commute for work daily.
  - (Premise 2:) In PA and NJ, commuters often choose between traveling by train or car.
  - Proposition
    - Reason:
      - Evidence:

- ▶ Step 2: Proposition (The highest-level statement in a text)
- (3) Minimal logical outline:
  - Premise 1: Many people commute for work daily.
  - Premise 2: In PA or NJ, commuters often choose between traveling by train or car.
  - ▶ **Proposition:** Commuting by car allows individuals to better focus on their needs.
    - Reason:
      - Evidence:

- ► Step 3: Reasons (Statements supporting the proposition at a lower level) supported by evidence
- (4) Minimal logical outline:
  - Premise 1: Many people commute for work daily.
  - Premise 2: In PA or NJ, commuters often choose between traveling by train or car.
  - Proposition: Commuting by car allows individuals to better focus on their needs.
    - Reason: One can work on a train, which is not possible while driving a car.
      - Evidence: Using laptops or mobile phones

- ► Step 3: Reasons (Statements supporting the proposition at a lower level) supported by evidence
- (5) Minimal logical outline:
  - Premise 1: Many people commute for work daily.
  - Premise 2: In PA or NJ, commuters often choose between traveling by train or car.
  - Proposition: Commuting by car allows individuals to better focus on their needs.
    - Reason: One can work on a train, which is not possible while driving a car.
      - Evidence: Using laptops or mobile phones
    - Reason: One can take a nap on a train, which is not possible while driving a car.
      - Evidence: High % of commuters using travel time to rest (Survey)

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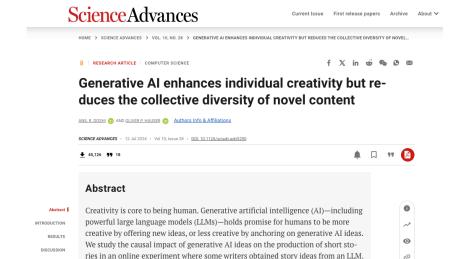
► Introduction: Premises

► Title: Proposition

Discussion: Proposition (including limitations)

- ► High-stakes quantitative papers, such as those published in *Nature* and *Science*, are exceptionally well-aligned with the ideal underlying structure:
  - ► Introduction: Premises
  - ► **Title:** Proposition
  - Discussion: Proposition (including limitations)
  - Results: Reasons and evidence

- ► High-stakes quantitative papers, such as those published in *Nature* and *Science*, are exceptionally well-aligned with the ideal underlying structure:
  - ► Introduction: Premises
  - ► **Title:** Proposition
  - Discussion: Proposition (including limitations)
  - ▶ Results: Reasons and evidence
- ▶ Why this alignment? To save the reader time.



Let's extract the underlying structure from this paper together!



- First, let's talk about the paper!
  - ▶ Question 1: The paper describes how generative Al ideas can act as a "springboard" for creativity or, conversely, anchor and limit originality. Do you think generative Al helps or hinders the creative process more significantly? Why?

- First, let's talk about the paper!
  - ▶ Question 1: The paper describes how generative Al ideas can act as a "springboard" for creativity or, conversely, anchor and limit originality. Do you think generative Al helps or hinders the creative process more significantly? Why?
  - ▶ Question 2: The study highlights that less creative writers benefit the most from generative AI. Do you think this "equalizing effect" is beneficial for creativity as a whole, or does it risk lowering the standards of what we consider "creative"?

► Let's extract the underlying structure from this paper together!

- (6) Doshi & Hauser 2024 outline:
  - Introduction
  - Proposition: Gen AI enhances individual creativity but reduces the collective diversity of novel content
    - Less creative writers experienced the greatest improvements, achieving levels comparable to more inherently creative individuals.
      - Evidence: Stories written with generative AI were evaluated as better written, more enjoyable, and less boring (see results).
    - Reason: Having access to Gen AI ideas makes a story more similar to the average of other stories within the same condition
      - Evidence: We computed the cosine similarity of the embedding of the focal story with the average embedding of all other stories in the same condition (see results)

#### Course Book Ch. 1

► Let's now extract the underlying structure from the first chapter.