

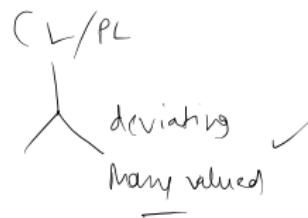
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Toulmin Model of Argumentation

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Monday, October 26, 2020

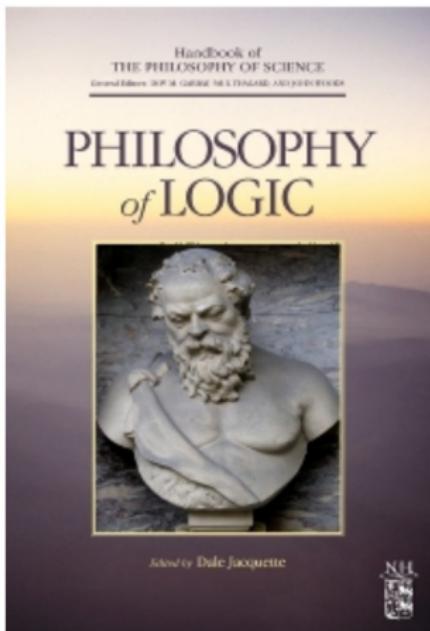
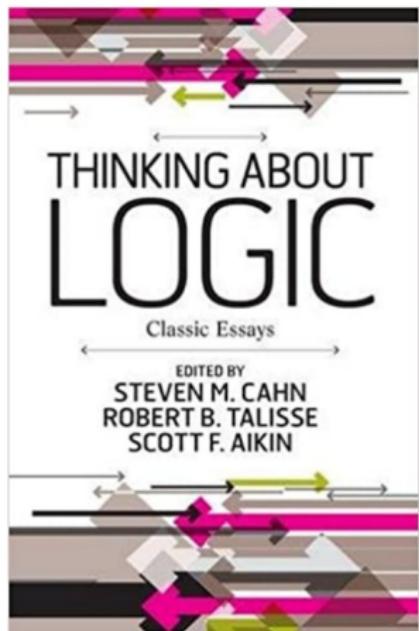
$\mathcal{L} \rightarrow$ Modal Logic \rightarrow Conditional Logic
Epistemic Logic,



About Term paper:

Term-Paper [Assignment]

Book that you may refer for writing Term paper:



→ Handbook of Phil
Logic
(1 - 18)

→ Companion
to logic
fuzziness
fuzzy thinking
→ 'Kosko'

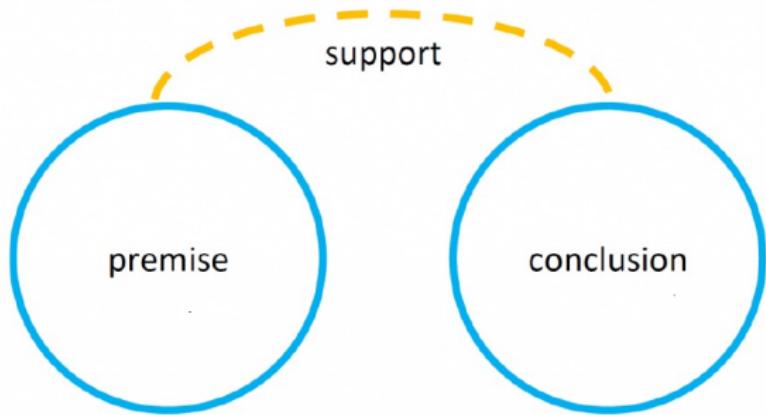
Traditional Argumentation:

Outline:

/ Traditional

- Use Toulmin Model or traditional model of argumentation in support of your claims. Word Limit: 4000
- 1. Introduction and Motivation
- 2. Historical background/Key terms/Existing literature
- 3. Theoretical framework
- 4. **What you want to argue?**
- 5. Conclusion
- 6. References: Atleast 6 articles+2 books+ Separate Online references

Premise-Conclusion



$$\frac{\{P_1, P_2\} \vdash T}{\therefore F}$$

Figure 1: Argument model

Basics:

Basic Concepts

- An **ARGUMENT**

- Collection of statements or propositions, some of which are intended to provide support or evidence for others

- **Premises**

- Statements or propositions in an argument that are intended to provide support or evidence

- **Conclusion**

- Statement or proposition for which the premises provide support



Figure 2: Basics of Argumetation

Arguments vs Explanations:

S P₁
- T P₂

- ▶ An **argument** is a rationale in which the **reason** presents evidence in support of a claim made in the conclusion. Its purpose is to provide a basis for believing the conclusion to be true.

Explanation:

- ▶ An **explanation** is a rationale in which the reason presents a cause of some fact represented by the conclusion. Its purpose is to help us understand how or why that fact occurs.
 - 1. An argument answers the question: How do you know? This is a request for evidence. ✓
 - 2. An explanation answers the question: Why is that so? This is a request for a cause.
-

Examples:

1. Today we know **why** the planets take such unusual paths across the sky: though the stars hardly move at all in comparison to our solar system, the planets orbit the sun, so their motion in the night sky is much more complicated than the motion of the distant stars." (p.8) ✓
2. In 1609, Galileo started observing the night sky with a telescope, which had just been invented. When he looked at the planet Jupiter, Galileo found that it was accompanied by several small satellites or moons that orbited around it. **This implied that** everything did not have to orbit directly around the earth, as Aristotle and Ptolemy had thought.

Support

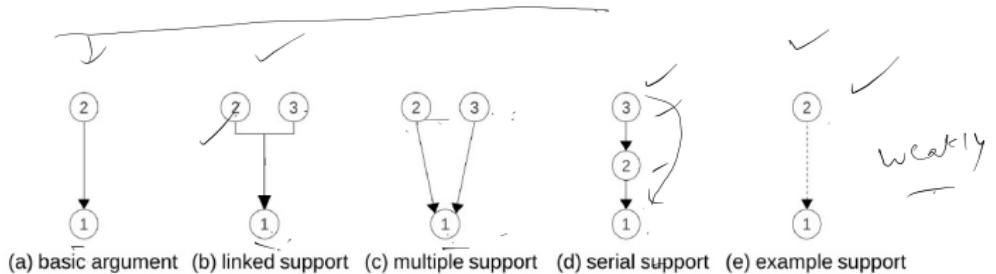


Figure 3: Support for claim

P₁
P₂
—
C. ✓

Good or Bad?

- ▶ Nature is governed by fixed and unchangeable laws. But every law is the work of some legislator. Therefore, there is some legislator responsible for the governing of nature.
- ▶ All whales are mammals. All mammals are warm-blooded. So all whales are warm-blooded.
- ▶ If the government just gets out of the way, everyone can be free to do the right thing themselves. After all, every day people are smart enough to make the right decisions on their own naturally and they should have the freedom to do so.
- ▶ Within that argument is the assumption that people will always do what is best, but that assumption is also being used to support the argument.

All X are Y
All Y are Z
All X are Z

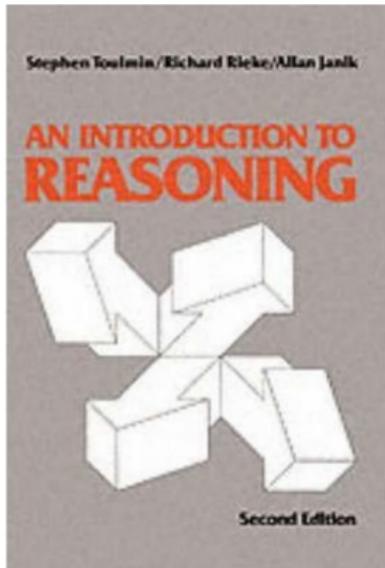
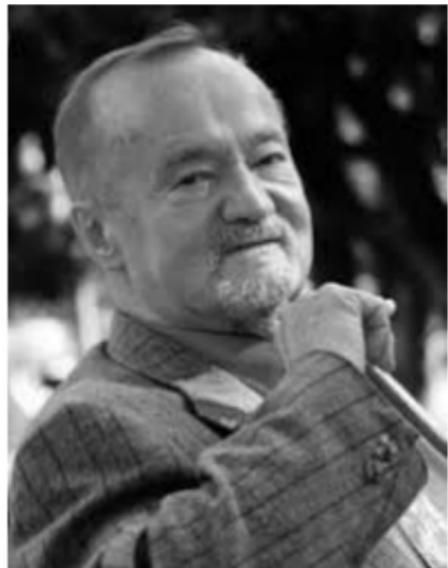
P → C
↑

✓ ✓

Toulmin Model: Pragmatic and relevance turn
in Argumentation.

'use of Argument'

Toulmin's Model of Argumentation:



Uses of Argument

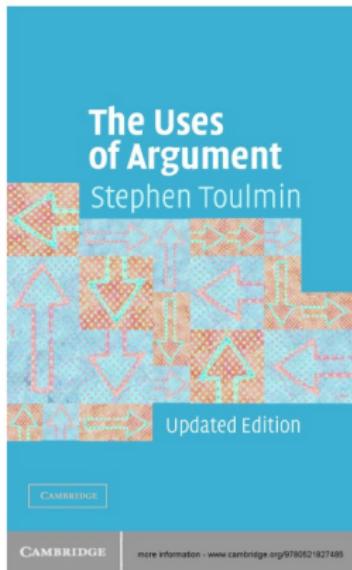


Figure 4: The Uses of Argument

Toulmin's Model:

- ▶ By trying to be relevant rather than "perfect," it made it painfully apparent to logicians how far their field had moved away from any argumentative practice.
- ▶ Toulmin: Uses of Argument (2001), Introduction to Reasoning(1984)
- ▶ A standard text for anyone studying the theory and practice of argumentation, or what soon became known as **the Toulmin model**



Axiom
Law
the

Toulmin's Model

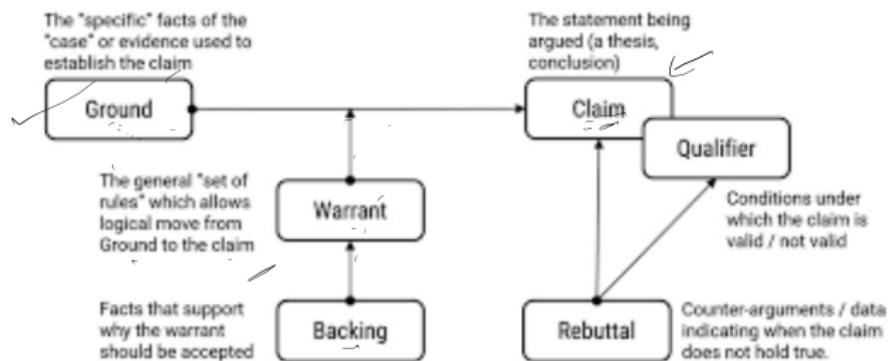
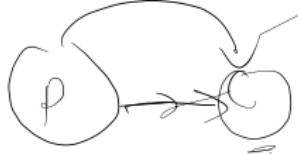


Figure 5: Example

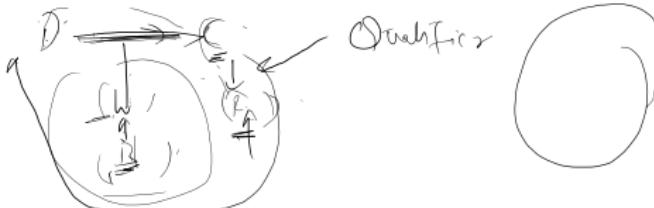
Elements of Argumentation: PP25

- ▶ What exactly are we discussing? Where precisely are we to stand on this issue? And what position must we consider agreeing to as the outcome of the argument?
- ▶ What information are you going on? What grounds is your claim based on? Where must we ourselves begin if we are to see whether we can take the step you propose and so end by agreeing to your claim?
- ▶ Given that starting point, how do you justify the move from these grounds to that claim? What road do you take to get from this starting point to that destination?
- ▶ Is this really a safe move to make? Does this route take us to the required destination securely and reliably? And what other general information do you have to back up your trust in this particular warrant?

Toulmin model of Argumentation:

1. Data/Grounds/Evidence: The facts or evidence used to prove the argument. Grounds may comprise experimental observations, matters of common knowledge, statistical data, personal testimony, previously established claims, or other comparable “factual data.”
2. **Claim** The statement being argued (a thesis). Destination which we may arrive at for ourselves as a discovery, or else may be invited to arrive at by somebody else, as an assertion;
3. Warrants: Deals with Solidity and reliability. Given that starting point, how do you justify the move from these grounds to that claim? What road do you take to get from this starting point to that destination? The general, hypothetical (and often implicit) logical statements. It Logically connects grounds to the claim. This serve as bridges between the claim and the data.

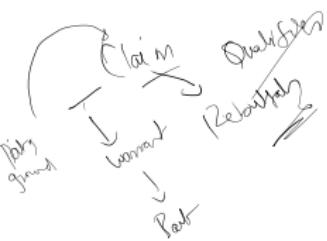
Qualifier and Rebuttals:



4. Qualifiers: Statements that limit the strength of the argument or statements that propose the conditions under which the argument is true.
5. Rebuttals: Counter-arguments or statements indicating circumstances when the general argument does not hold true- exceptions to the claim.
6. Backing: Statements that serve to support the warrants (i.e., arguments that don't necessarily prove the main point being argued, but which do prove the warrants are true).

Example:

It's Monday already, and last Thursday was Thanksgiving. By law, Thanksgiving can never fall before November 23rd. So, there are less than thirty days left to do our Christmas shopping.



Example:1



- ▶ Claim: There are less than thirty shopping days left.
- ▶ Grounds: It's Monday after Thanksgiving today.
- ▶ Warrant: Thanksgiving can never be before November 23rd.
- ▶ Backing: The date of Thanksgiving is established by Act of Congress.

Example:

Congress should ban animal research because animals are tortured in experiments that have no necessary benefit for humans such as the testing of cosmetics. The well being of animals is more important than the profits of the cosmetics industry . Only congress has the authority to make such a law because the corporations can simply move from state to state to avoid legal penalties . Of course, this ban should not apply to medical research . A law to ban all research would go too far . So, the law would probably (qualifier) have to be carefully written to define the kinds of research intended.

From the notes

Example:

Congress should ban animal research \alert{(Claim #1)} because animals are tortured in experiments that have no necessary benefit for humans such as the testing of cosmetics (Data). The well being of animals is more important than the profits of the cosmetics industry (**Warrant**). Only congress has the authority to make such a law (**Warrant**) because the corporations can simply move from state to state to avoid legal penalties (**Backing**). Of course, this ban should not apply to medical research (**Qualifier**). A law to ban all research would go too far (Rebuttal). So, the law would probably (**qualifier**) have to be carefully written to define the kinds of research intended \alert{(claim #2)}

Example:2

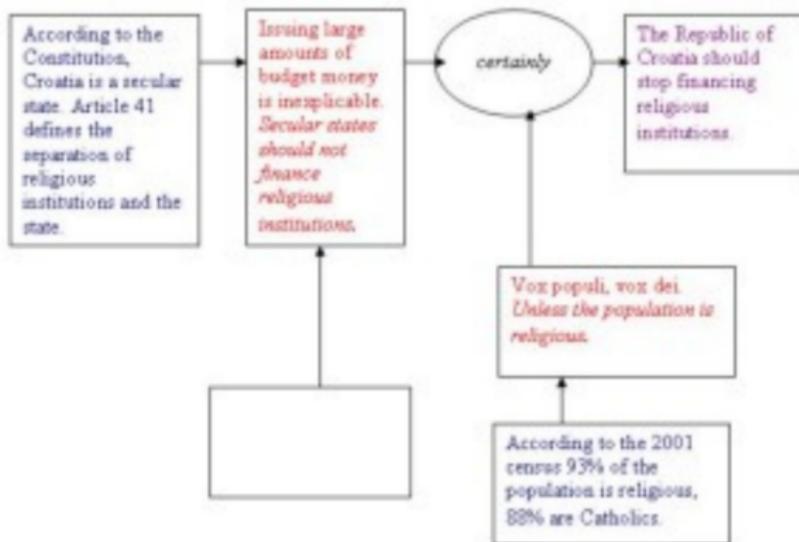


Figure 6: Example

Organize your Essay:

Claim

1. Introduction:
 - ▶ Material to get the reader's attention.
 - ▶ Introduce the problem or topic
 - ▶ Introduce our claim or thesis, perhaps with accompanying qualifiers that limit the scope of the argument.
2. Reasons or evidence to support your argument: Thought experiment/Earlier studies to support your claim.
3. Any general principles (related to Computationalism, Connectionism, Anti-representtation view (parity principle))
4. Counter argument/Critically evaluate your argument>Show limitations.
5. Conclusions: Implications of the argument, summation of points, or final evocative thought to ensure the reader remembers the argument.

Toulmin Model of Argumentation: Limitations

- ▶ Not suitable for Mathematical Reasoning
- ▶ The Toulmin method assumes that an argument starts with a fact or claim and ends with a conclusion, but ignores an argument's underlying questions

Summary:

- ▶ Alternative: “premise” and “conclusion” with the new concepts of “claim,” “data,” “warrant,” “modal qualifier,” “rebuttal,” and “backing.
- ▶
- 1. <https://whytoread.com/8-basic-books-on-cognitive-science-to-help-you-understand-your-mind/>
- 2. Stephen Toulmin. The uses of argument. Cambridge, 1958.
- 3. Stephen Toulmin, Richard Rieke, and Allan Janik. An introduction to reasoning. Macmillan, second edition, 1984.
- 4. Stephen Toulmin. Introduction to Reasoning, 1984
- 5.