TECHNISCHE UNIVERSITÄT DRESDEN

The Queen Chapter!

Fakultät Informatik - Institut Software- und Multimediatechnik - Softwaretechnologie - Academic Skills in Computer Science (ASICS)

54. The Toulmin Model of Argumentation and the BoCoWiTo Model of Research

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http://st.inf.tu-dresden.de/teaching/asics

Courtesy to Christian Wende,

Birgit Demuth

DRESDEN concept
Exzellenz aus Wissenschaft und Kultur

Obligatory Literature

- ▶ An overview of the orginal Toulmin model is in:
  - – Wayne Brockriede, Douglas Ehnigner. Toulmin on argument: An interpretation and application. Quarterly journal of speech, 1960 - Taylor & Francis
  - – http://www.comm.umd.edu/faculty/tpg/documents/BrockriedeEhningeronToulmin.pdf

Recommended:

- ▶ Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams. The Craft of Research. The University of Chicago Press.
  - – Contains an adaptation of Toulmin's model and the scientific discussion metamodel.

- ▶ Karl-Dieter Bünting, Axel Bitterlich, Ulrike Pospiech. Schreiben im Studium. Cornelsen Scriptor. Ausgabe 1996. Kap. 7.3

- ▶ C. Stickel-Wolf, J. Wolf. Wissenschaftliches Arbeiten und Lerntechniken. Gabler. S. 215

References

► Stephen Toulmin. The Use of Argument. 1958. Updated Edition from Cambridge University Press.

Why is this Chapter Important?

▶ Knowing the BoCoWiTo model of argumentation and research enables you to write perfect argumentations in your scientific papers

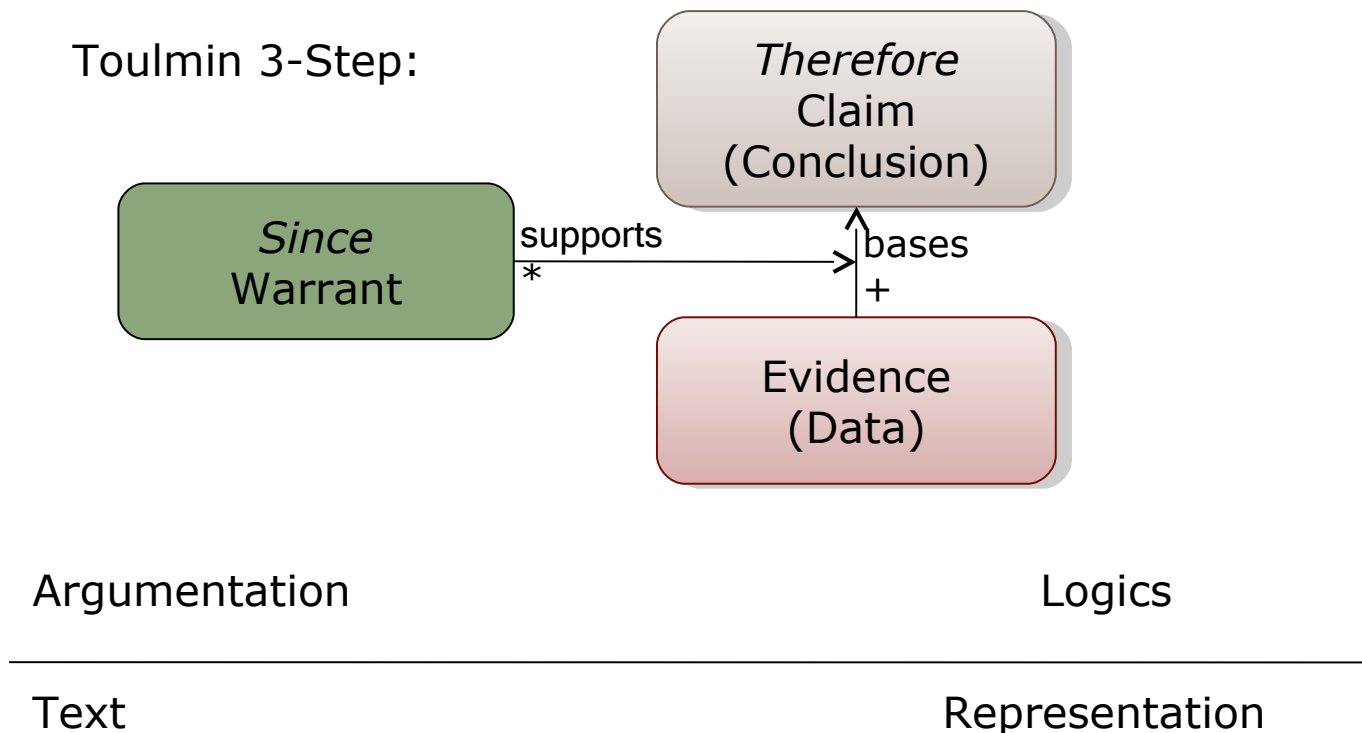> **If you want to write like Bertrand Russel,**
>
> **learn BoCoWiTo and Toulmin.**

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54.1 The Toulmin Argumentation Model

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The Basic Toulmin Model of Argumentation, a 3-Step

▶ **Stephen Toulmin has classified arguments („causes", „reasons") into different categories:**

▶ Argumentation is a movement from undisputed **Evidence** to a **Claim** (Conclusion, Schluss) via **Warrants**

▶ **Evidence** (Data, facts) are justification for claims. Evidence is not disputable.

▶ **Warrant** is a general rule which is accepted by everybody (general knowledge)

▶ **Claims** are the conclusions (hypothesis, thesis, Schluss)

Toulmin 3-Step:

```
                                    ┌─────────────────┐
                                    │   Therefore     │
                                    │     Claim       │
                                    │  (Conclusion)   │
                                    └─────────────────┘
                                           ↑
┌──────────────────┐   supports           │ bases
│      Since       │ ──────────────→       │   +
│     Warrant      │       *               │
└──────────────────┘              ┌─────────────────┐
                                  │    Evidence     │
                                  │     (Data)      │
                                  └─────────────────┘
```

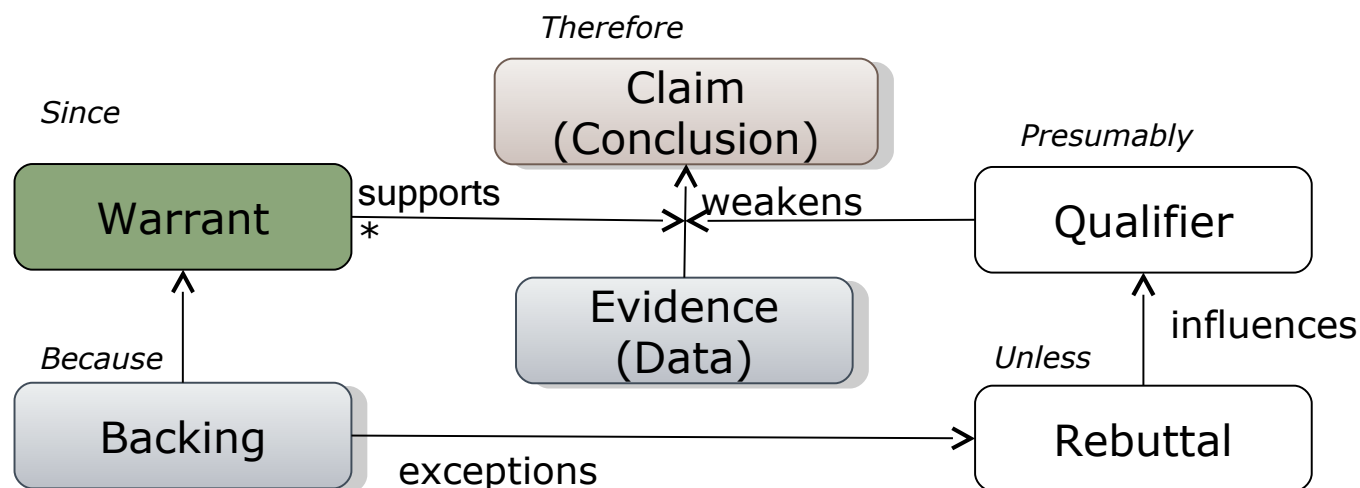| Argumentation	Logics
Text	Representation

Modus Ponens is a Special Case of Warranting

▶ Some examples:

▶ Modus ponens with general laws is an example:

- Sokrates is a man. (evident)
- All men die. (warrant, law)
- Sokrates will die. (claim)

▶ Warrants can also be general if-then-rules:

	condition	consequence
general (warrant)	men over 80	80% are dead
specific (claim)	john is 79	In a year, with 80% he will be dead

The Full Toulmin Model of Argumentation

▶ The full Toulmin model of argumentation is an extended 6-Step [Brockriede]
▶ Example

> **John will presumably die with 70 (claim, qualifier)**
>
> **John is a smoker (fact).**
>
> **With 50% probability, smoker die with 70 on lung cancer. (warrant)**
>
> **Unless he does not stop now (rebuttal).**
>
> **He has a good chance to be dead then. (Claim, qualifier)**

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Contents of Booth/Colomb/Williams „The Craft of Research" (BCW)

▶ BoCoWi book presents an extension of the Toulmin model of argumentation from [Toulmin] for research papers and reports

▶ This model, BoCoWiTo, links the terms *claim, reason, evidence, research question, research answer.*

▶ Outline of the BoCoWi book:

I   RESEARCH, RESEARCHERS, AND READERS

      Starting a Research Project

II   ASKING QUESTIONS, FINDING ANSWERS

      Planning your Project

III MAKING A CLAIM AND SUPPORTING IT

      Pulling together your Argument

IV PREPARING TO DRAFT, DRAFT, AND REVISING

      Presenting your Argument

# The Extended Booth/Colomb/Williams/Toulmin Model of Argumentation (BoCoWiTo)

▶ Booth, Colomb, Williams (BoCoWi) extended basic Toulmin to the following 4-Step (Reason/Cause chain with warrant):

▶ Argumentation is a movement from undisputed Evidence (Data, Fakten) to a **Claim** (Conclusion, Schluss) via

- **Reason** (causes) and evidence are justification for claims.
- **Evidence** are special reasons (causes), basic facts, not disputable.
- **Warrant** is a general rule which is accepted by everybody. Warrants can be *laws* or *if-then-rules*

▶ There may be more reasons; model can be a n-Step

BCW-Toulmin 4-Step:
(BoCoWiTo 4-Step)

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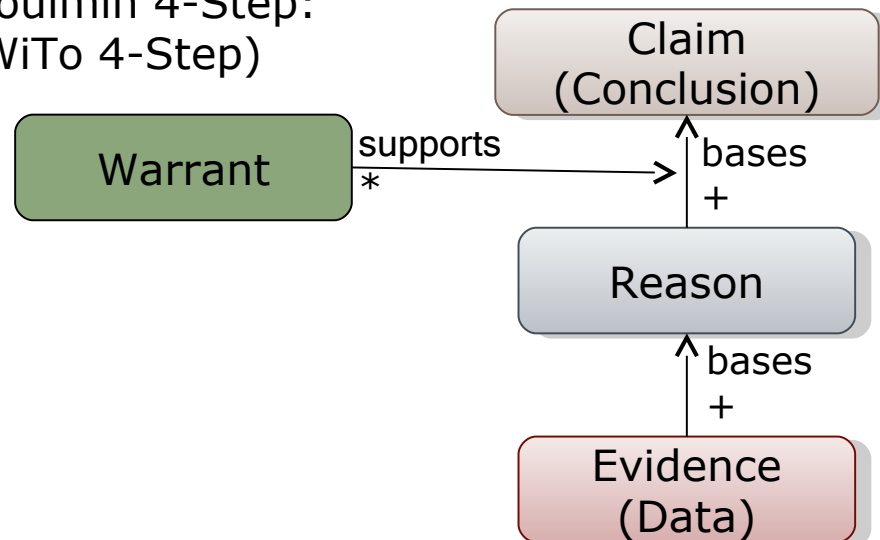
The BoCoWiTo Model of Answering Research Questions

▶ Based on the BoCoWiTo-FourStep, BoCoWi propose a 7-step to answer *research questions*

▶ The **BoCoWiTo research model** for answering a research question uses the BoCoWiTo-FourStep, but is extended for answering of research questions from a set of alternative claims
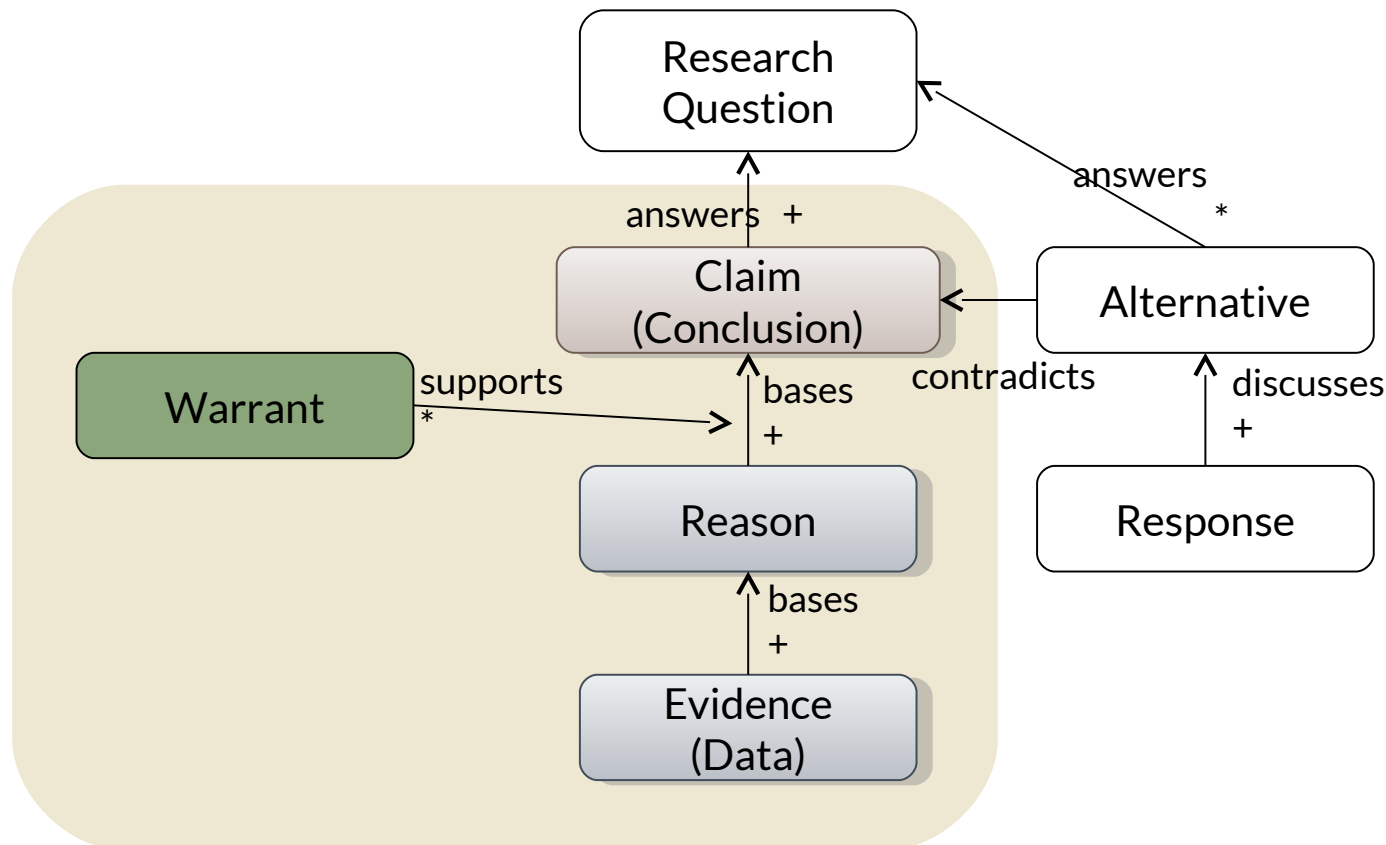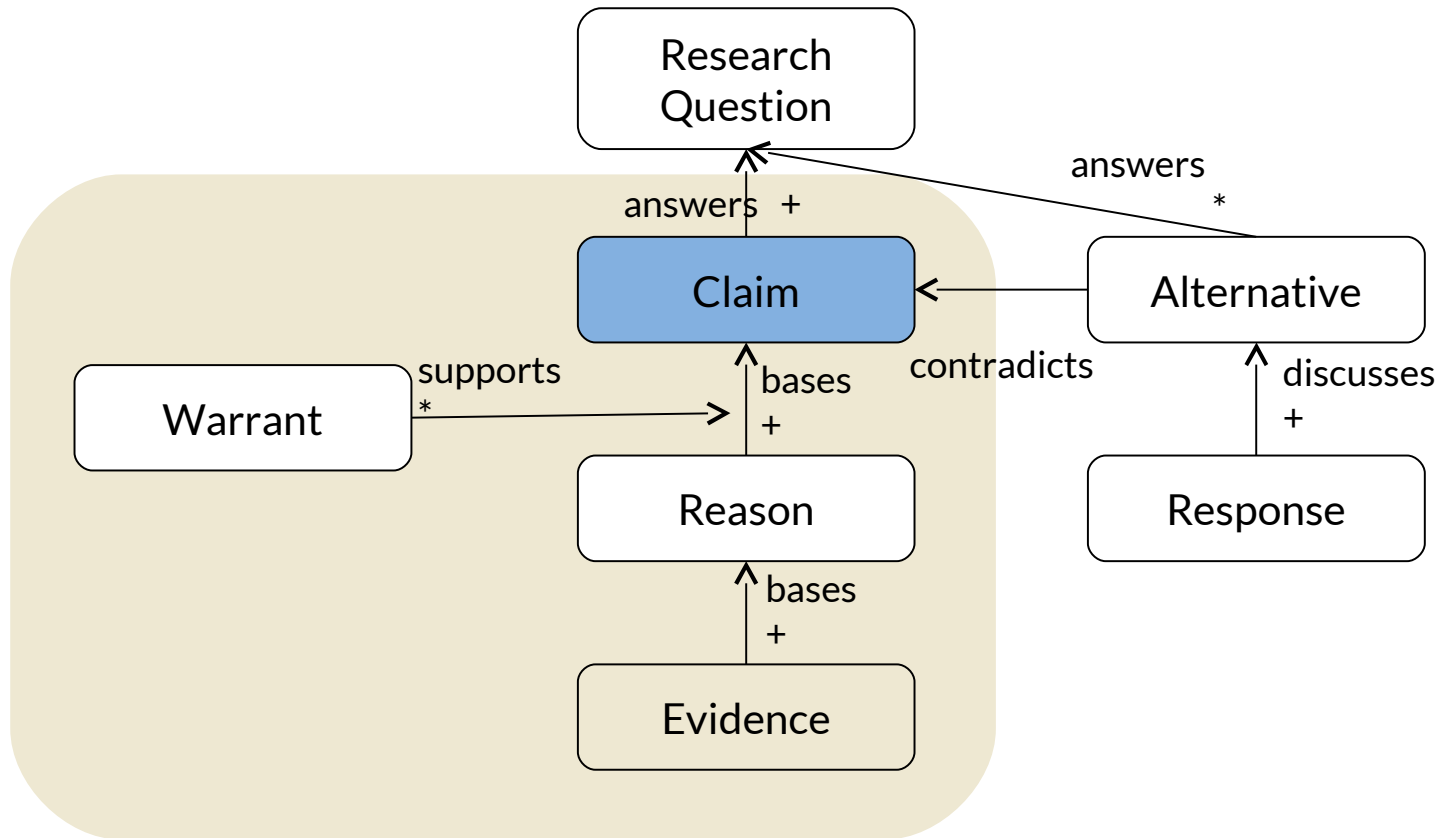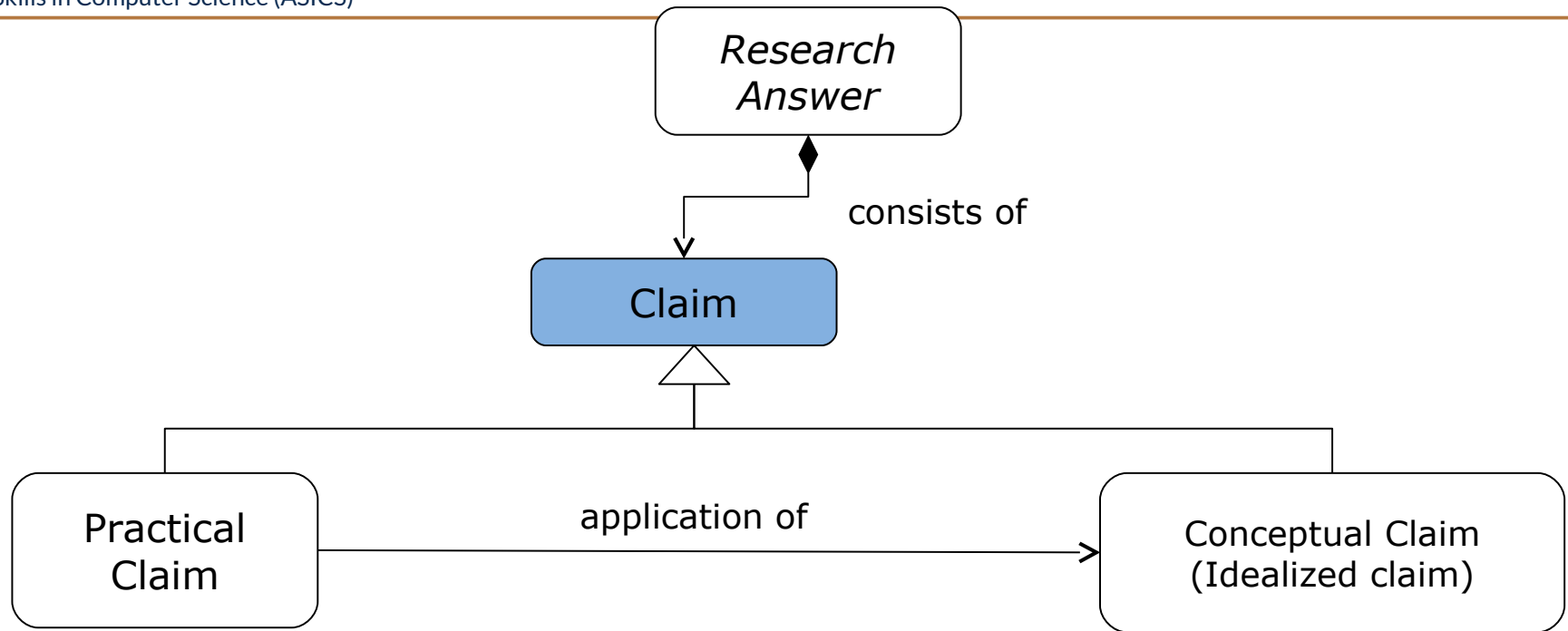
54.2 The Elements of the BoCoWiTo Argumentation Model

▶ Warrants, Reasons, Evidences are different types of arguments

Definition of Claims

```
                    ┌─────────────┐
                    │  Research   │
                    │   Answer    │
                    └──────┬──────◆
                           │       consists of
                           ▼
                    ┌─────────────┐
                    │    Claim    │
                    └──────△──────┘
              ┌────────────┴────────────┐
┌─────────────┐                   ┌──────────────────┐
│  Practical  │   application of  │ Conceptual Claim │
│    Claim    │─────────────────▶│ (Idealized claim)│
└─────────────┘                   └──────────────────┘
```

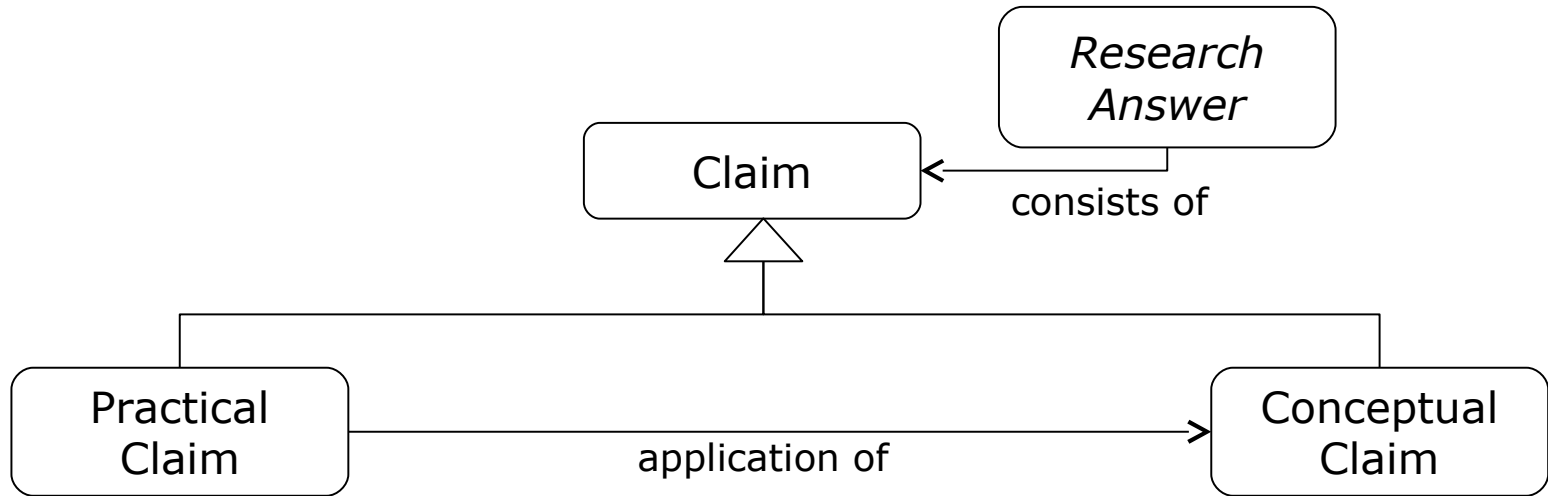Suggests a method, technology for solving a *practical* problem

Quality criteria for claims

▶ Specific

▶ Relevant

▶ Significant

▶ Trustworthy

Or *idealized claim*

Describes a solution in a model of the practical problem

Suggests a model solution (idealized research)

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Definition of Different Types of Claims

Specific
Detailed but not wordy
different logic facets
Significant
Innovation depth and breadth
(distance to other results)
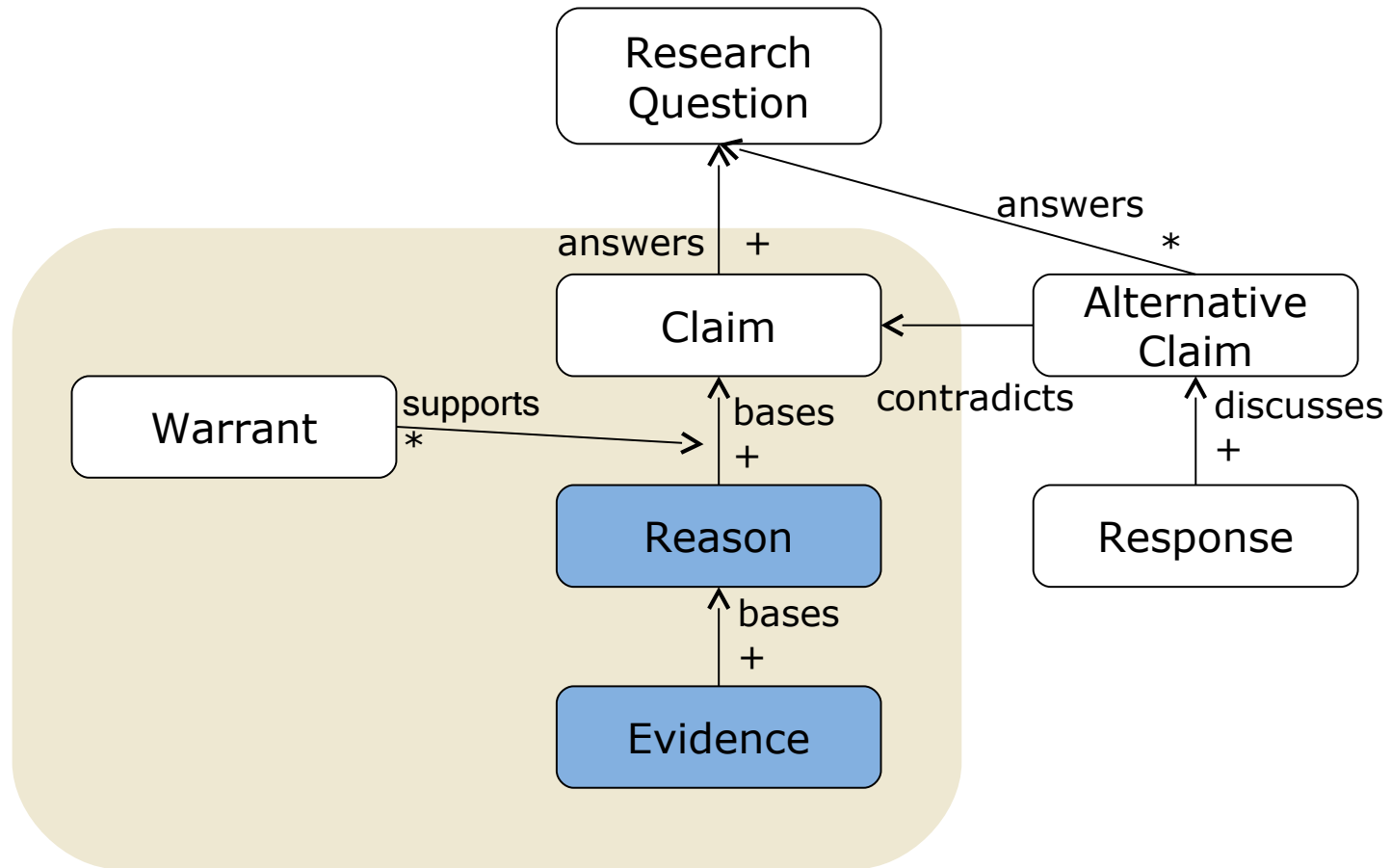Removel of inconsistencies,
misunderstandings
Trustworthy
Limits
Relativization with Hedges

How applicable is an idealized claim?
- Can be realized with reasonable effort(time, cost)
- Cheaper and faster than competitors
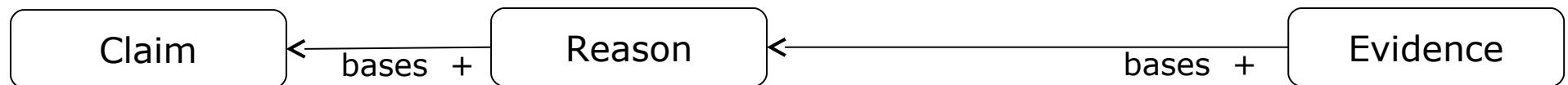- Does not create larger problems

54.2.2 Reason and Evidence

Justification of Claims
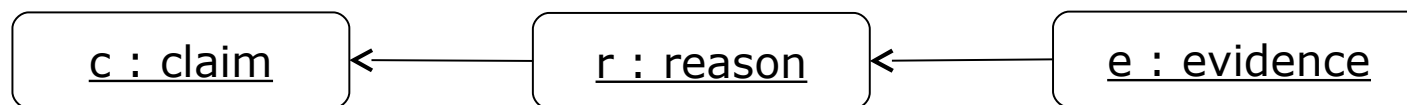
Reasons construct the logics of the argumentation

▶ Why should the reader believe an argumentation chain?

▶ **Evidence** describes the hard facts, numbers, etc. which form the atomic basis of the argumentation

▶ Must be easy to check

| Claim | ← bases + | Reason | ← bases + | Evidence |

# 54.2.3 Storyboarding: Argumentation Patterns with Deep Meshs of Claim, Reason, Evidence

▶ Beyond argumentation chains, **storyboards** compose arguments to graphical nets of thoughts („objects"), exhibiting their dependencies

  ▪ Rhombi, chains, combs and bushes are special forms of storyboards

▶ Storyboards are *models* of the text

  ▪ Evidences form the sources of thesis graphs, claims their sinks, reasons and warrants their inner nodes

▶ The most simple BoCoWiTo argumentation pattern (CRE pattern) looks like

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  c : claim   │ ◄──  │  r : reason  │ ◄──  │ e : evidence │
└──────────────┘      └──────────────┘      └──────────────┘
```

Storyboarding

Example of a simple **reason chain (effect2cause chain)**, model and text

- Can be textified as induction or deduction
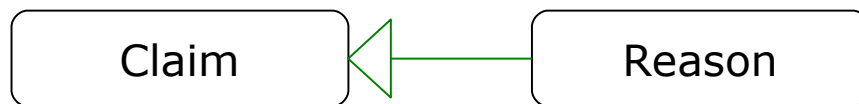
Storyboarding

▶ Branching of **reasons and subreasons** into argumentation bushs

    ▪ Can be arranged as deep effect2cause bushs

4 Because: Potential questions of the reader must be forseen and answered in the text.

| : reason | ← | : subreason | ← | : evidence |

| : claim | ← | : reason | ← | : subreason | ← | : evidence |

: evidence

1 Good writing requires a previous definition of the readership.

2 Because: The know-how of the reader must be taken into account during writing.

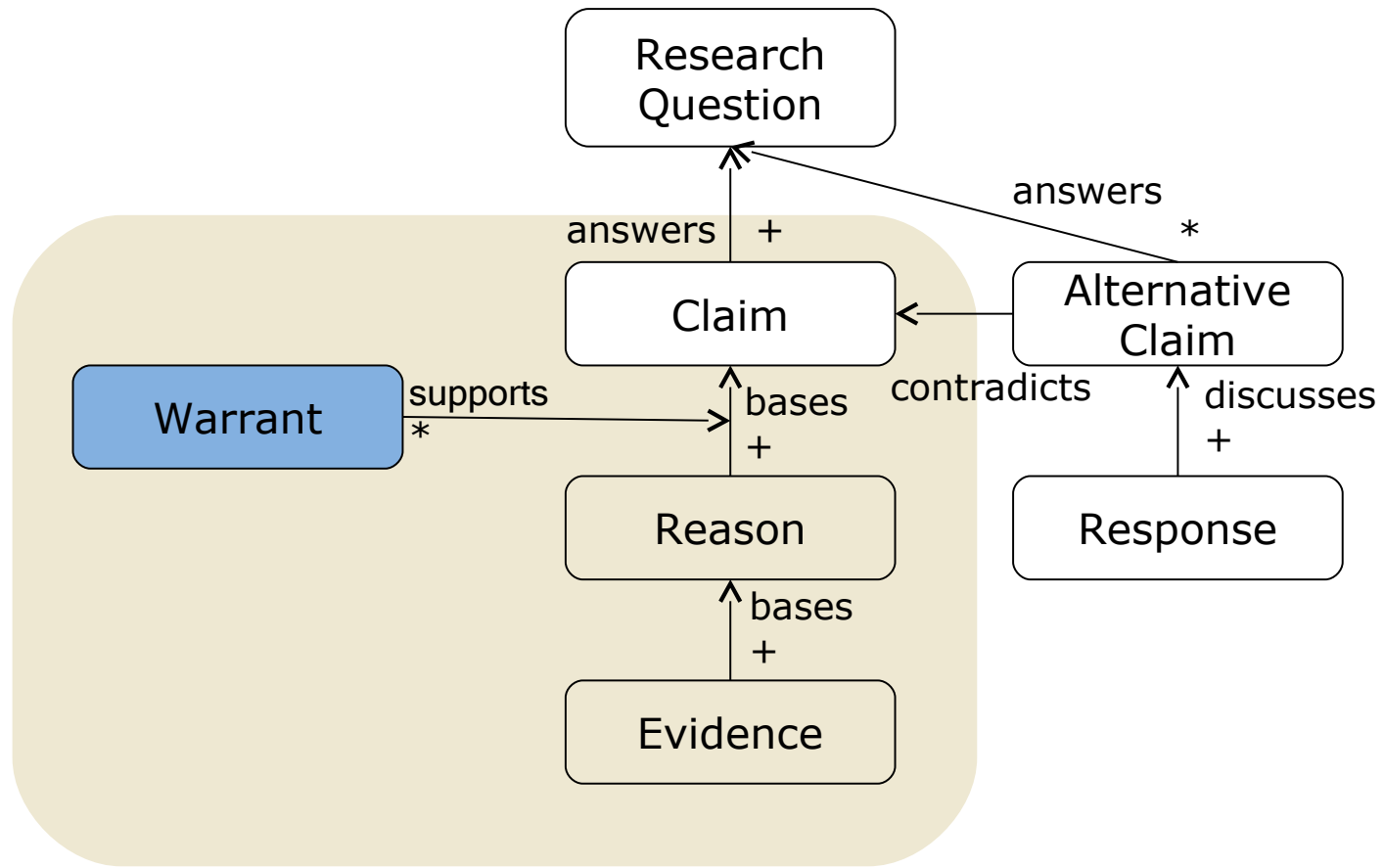3 Because: The know-how of the reader influences his comprehension of the text.
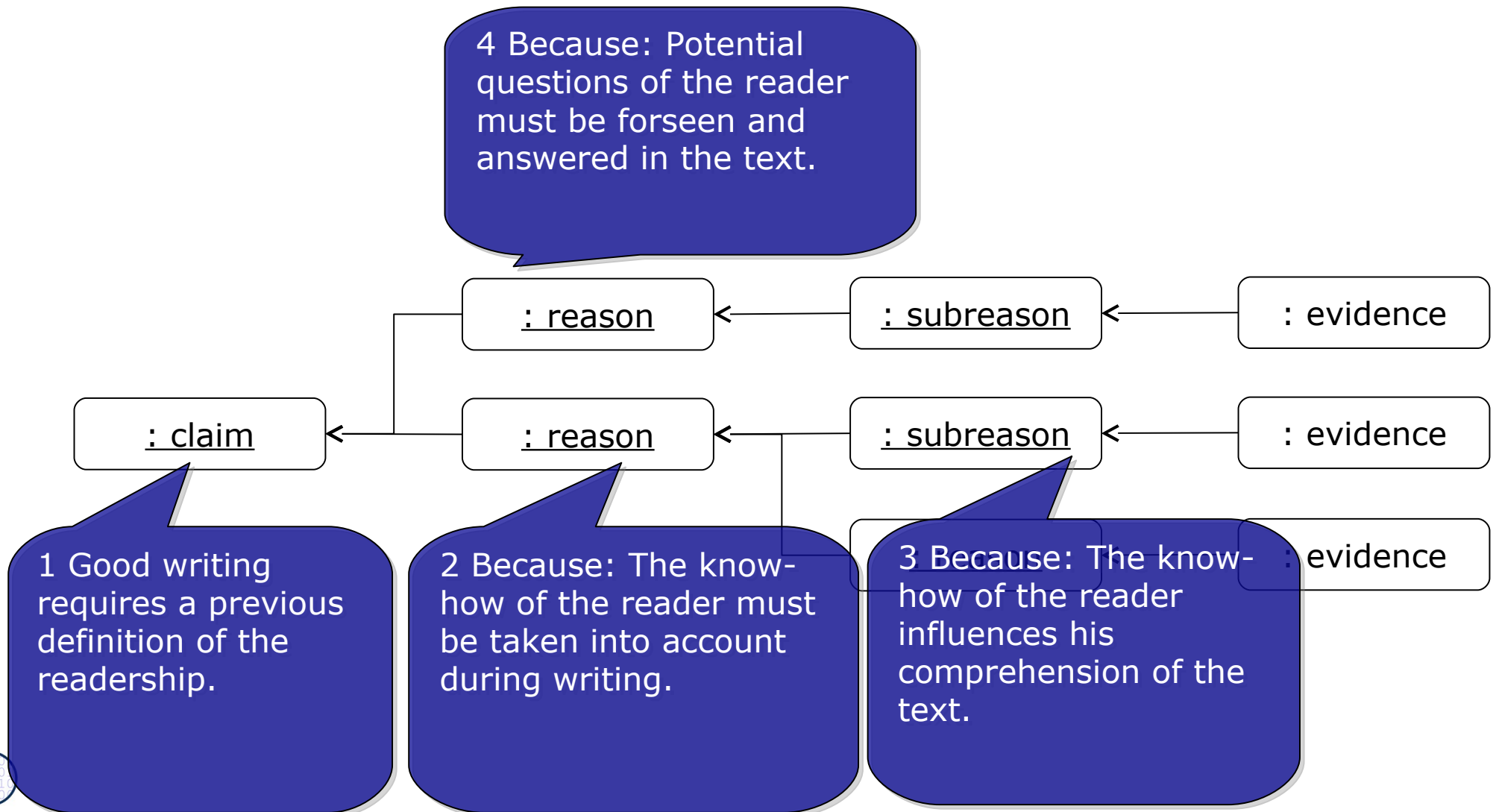
Storyboarding

▶ Branching of **evidence** is also possible; backing a reason on several evidences
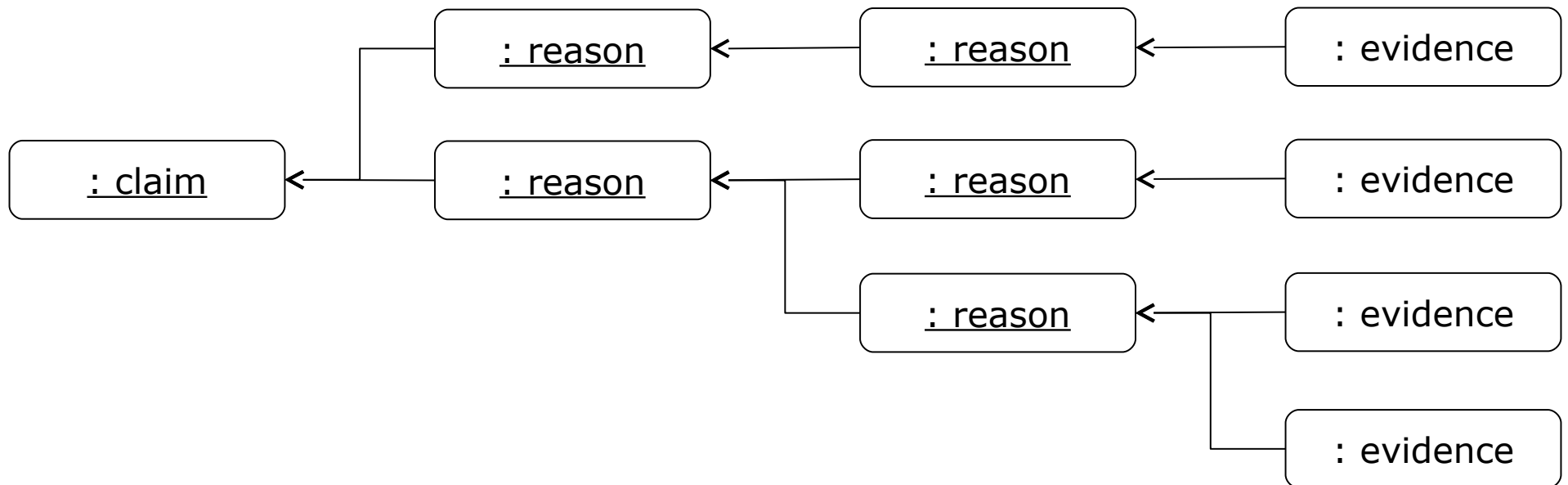
54.2.3 Warrant

Application of Warrants

▶ Warrants show some truth in form of a general rule, e.g., „All men are mortal"

- for controversial argumentations
- for non-expert readers

▶ Warrants are "modus ponens of superclasses"; reasons and claims are instances of general conditions and consequences
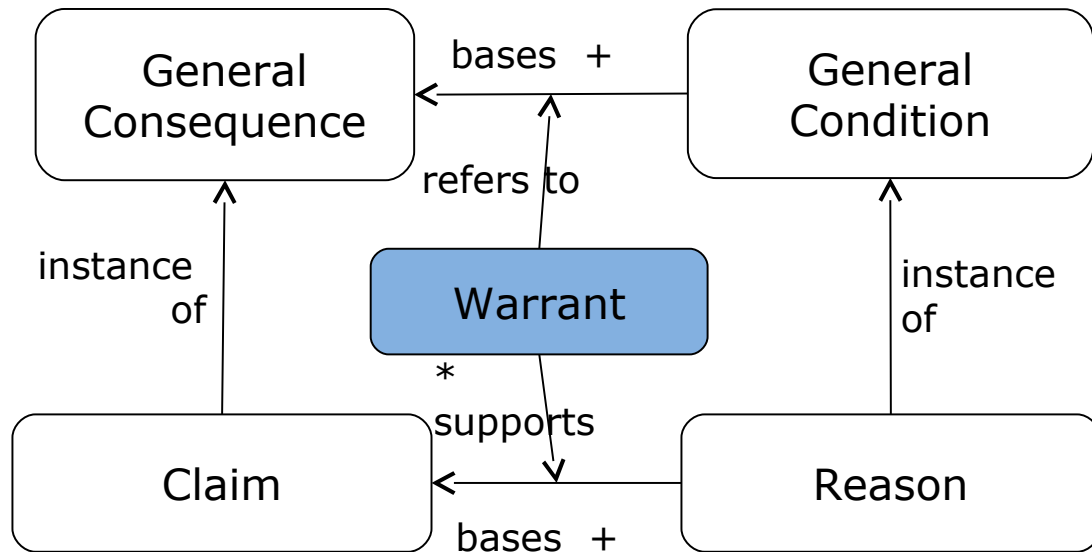
Fact/Reason: Sokrates is a man.

Warrant: All men are mortal.
(if somebody is a man, he is mortal)

Claim: Sokrates is mortal

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Fine Argumentation with BoCoWiTo

[Russel-Bolshevism] <rebuttal>The Bolshevik argument against Parliamentary democracy as a method of achieving Socialism is a powerful one.</> My answer to it lies rather in pointing out what I believe to be fallacies in the Bolshevik method, from which I conclude that no swift method exists of establishing any desirable form of Socialism. But let us first see what the Bolshevik argument is.

<reason>**In the first place, it assumes that those to whom it is addressed are absolutely certain that Communism is desirable, so certain that they are willing, if necessary, to force it upon an unwilling population at the point of the bayonet.** <reason>It **then** proceeds to argue that, while capitalism retains its hold over propaganda and its means of corruption, Parliamentary methods are very unlikely to give a majority for Communism in the House of Commons, or to lead to effective action by such a majority even if it existed. <evidence>Communists point out how the people are deceived, and how their chosen leaders have again and again betrayed them. <reason>From this they argue that the destruction of capitalism must be sudden and catastrophic; that it must be the work of a minority; and that it cannot be effected constitutionally or without violence. <reason>It is therefore, in their view, the duty of the Communist party in a capitalist country to prepare for armed conflict, and to take all possible measure for disarming the bourgeoisie and arming that part of the proletariat which is willing to support the Communists.

Fine Argumentation with BoCoWiTo

[Russel-Bolshevism] <controller about the complex argumentation>There is an air of realism and disillusionment about **this position**, which makes it attractive to those idealists who wish to think themselves cynics. But I think there are various points in which it fails to be as realistic as it pretends.</>

<main counterargument 1>In the first place, it makes much of the treachery of Labour leaders in constitutional movements, but does not consider the possibility of the treachery of Communist leaders in a revolution. <strawman>To this the Marxian would reply that in constitutional movements men are bought, directly or indirectly, by the money of the capitalists, but that revolutionary Communism would leave the capitalists no money with which to attempt corruption.</> <concession>This has been achieved in Russia, and could be achieved elsewhere.</> <pivot>But selling oneself to the capitalists is not the only possible form of treachery. It is also possible, having acquired power, to use it for one's own ends instead of for the people.</> <claim>This is what I believe to be likely to happen in Russia: the establishment of a bureaucratic aristocracy, concentrating authority in its own hands, and creating a régime just as oppressive and cruel as that of capitalism.</claim>

<evidence>Marxians never sufficiently recognize that love of power is quite as strong a motive, and quite as great a source of injustice, as love of money; yet this must be obvious to any unbiased student of politics.</evidence>

<evidence>It is also obvious that the method of violent revolution leading to a minority dictatorship is one peculiarly calculated to create habits of despotism which would survive the crisis by which they were generated.</>
<reason>Communist politicians are likely to become just like the politicians of other parties: a few will be honest, but the great majority will merely cultivate the art of telling a plausible tale with a view to tricking the people into entrusting them with power.</reason>

<induced claim>The only possible way by which politicians as a class can be improved is the political and psychological education of the people, so that they may learn to detect a humbug.</claim> <reason>In England men have reached the point of suspecting a good speaker, but if a man speaks badly they think he must be honest.</reason> Unfortunately, virtue is not so widely diffused as this theory would imply.

<counterargument 2>In the second place, <strawman>it is assumed by the Communist argument that, although capitalist propaganda can prevent the majority from becoming Communists, yet capitalist laws and police forces cannot prevent the Communists, while still a minority, from acquiring a supremacy of military power.

<highlighing a contradiction>*It is thought that secret propaganda can undermine the army and navy, although it is admittedly impossible to get the majority to vote at elections for the programme of the Bolsheviks.*

<evidence>This view is based upon Russian experience, where the army and navy had suffered defeat and had been brutally ill used by incompetent Tsarist authorities.

<strawman firing - pivot>The argument has no application to more efficient and successful States.

<evidence>Among the Germans, even in defeat, it was the civilian population that began the revolution.

…<counterargument 3>There is a further **assumption** in the Bolshevik argument which seems to me quite unwarrantable. <strawman claim>It is assumed that the capitalist governments will have learned nothing from the experience of Russia. Before the Russian Revolution, governments had not studied Bolshevik theory. And defeat in war created a revolutionary mood throughout Central and Eastern Europe. <pivot>But now the holders of power are on their guard. <pivot reason> There seems no reason whatever to suppose that they will supinely permit a preponderance of armed force to pass into the hands of those who wish to overthrow them, while, according to the Bolshevik theory, they are still sufficiently popular to be supported by a majority at the polls.

<evidence by rhetorical question>Is it not as clear as noonday that in a democratic country it is more difficult for the proletariat to destroy the Government by arms than to defeat it in a general election? Seeing the immense advantages of a Government in dealing with rebels, it seems clear that rebellion could have little hope of success unless a very large majority supported it. <concession>Of course, if the army and navy were specially revolutionary, they might effect an unpopular revolution; </> but this situation, though something like it occurred in Russia, is hardly to be expected in the Western nations.

<induced claim>This whole Bolshevik theory of revolution by a minority is one which might just conceivably have succeeded as a secret plot, but becomes impossible as soon as it is openly avowed and advocated.

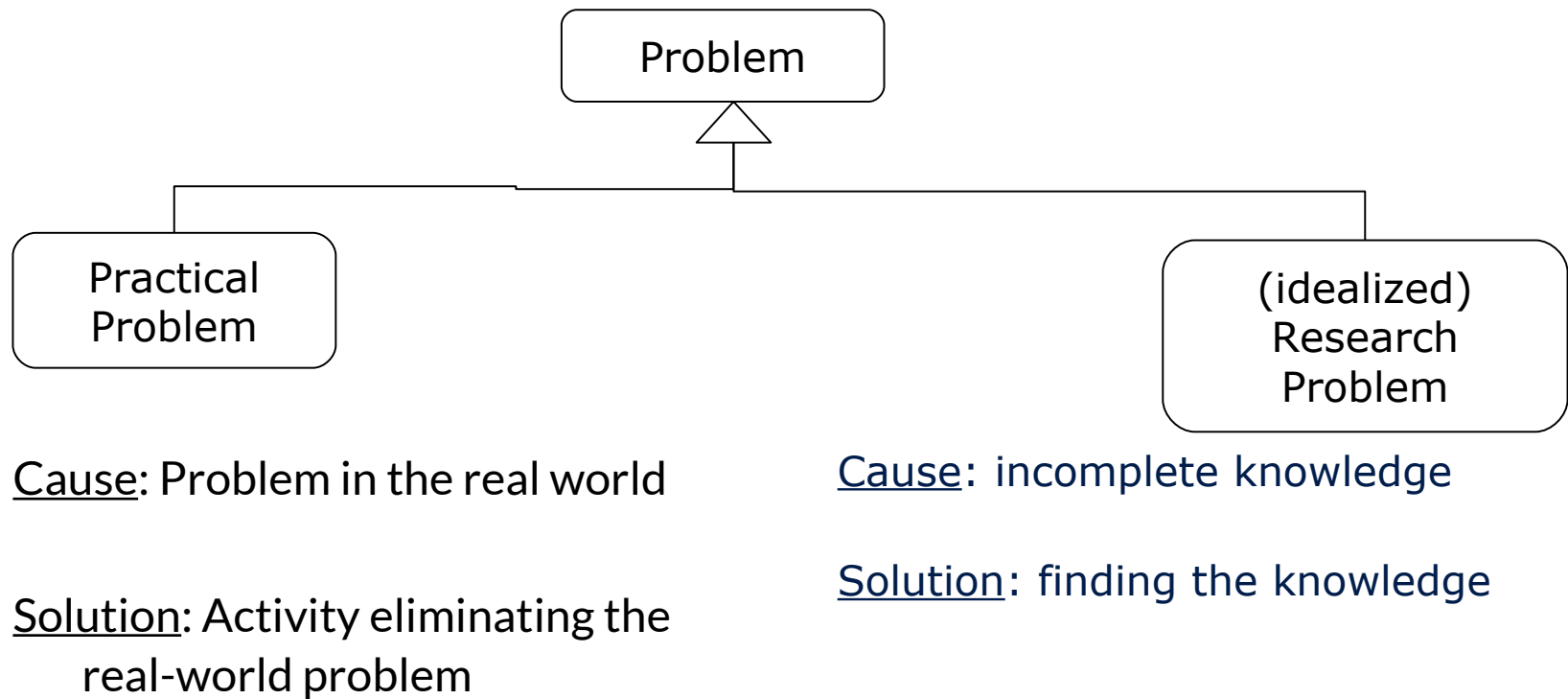# 54.3 The Elements of the BoCoWiTo Model of Research and Scientific Discussion
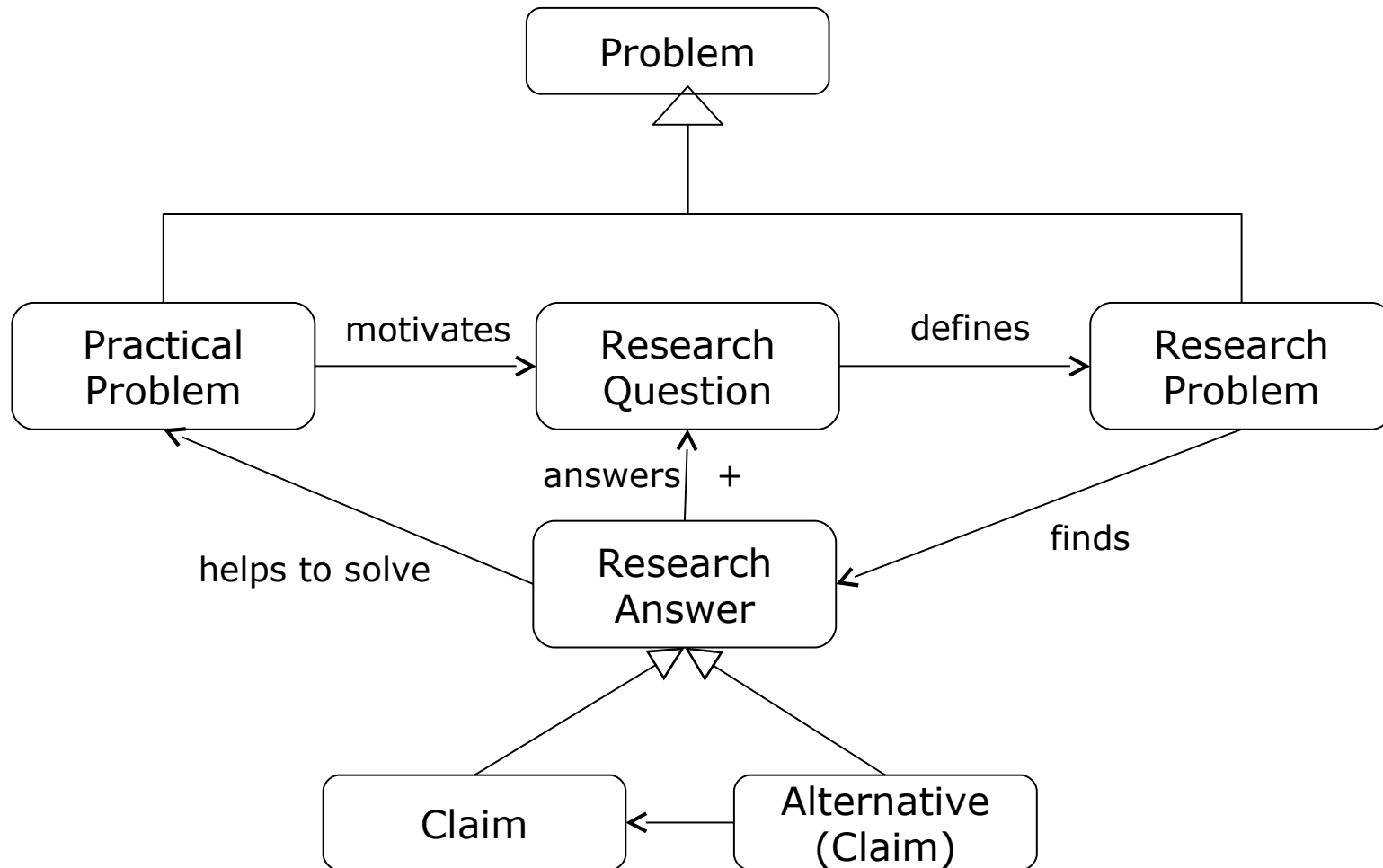
54.3.1 Research Question

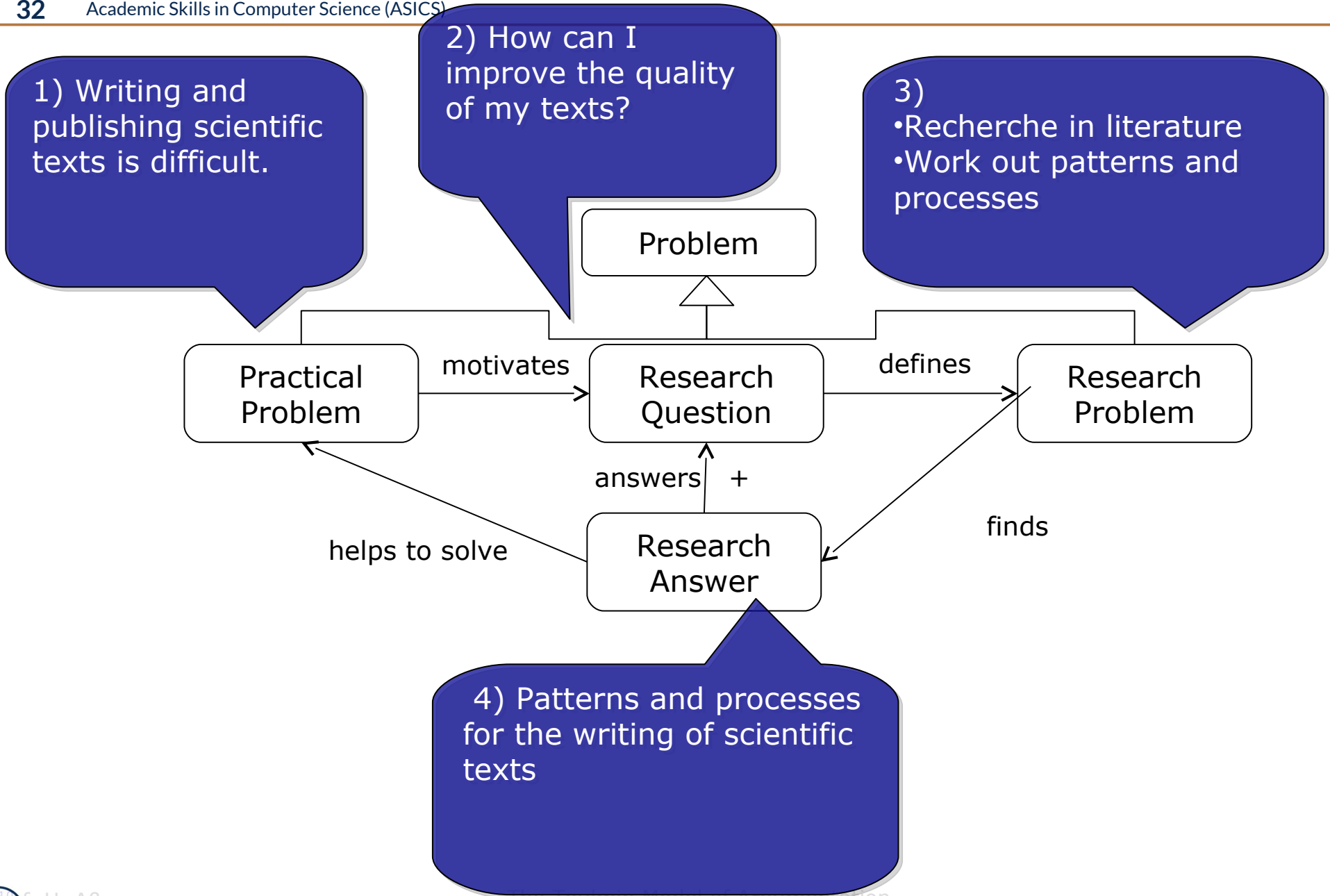▶   Claims or AlternativeClaims answer ResearchQuestions

The Toulmin Model of Argumentation   29
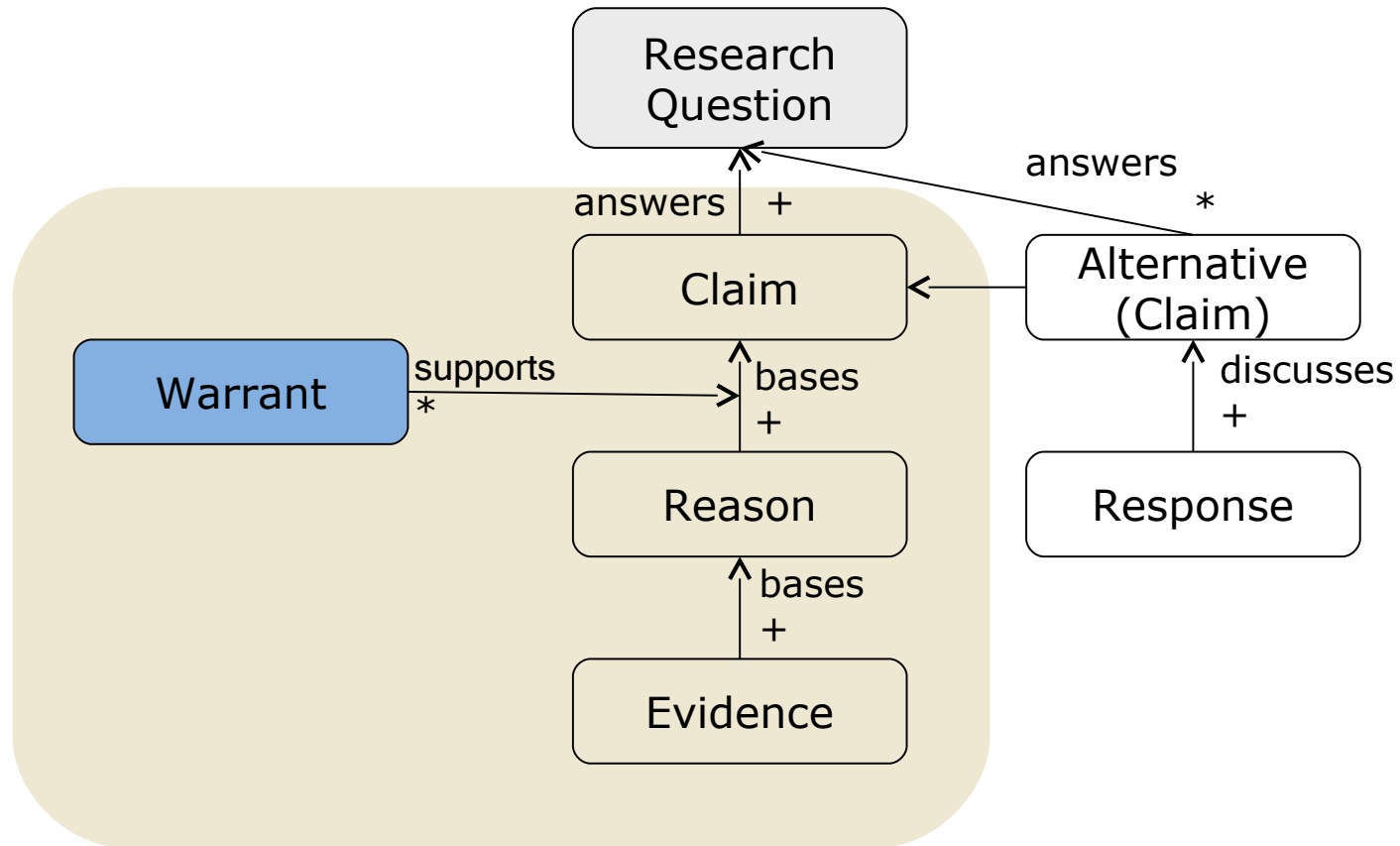
Definition of the Research Problem

```
                        ┌─────────────┐
                        │   Problem   │
                        └──────△──────┘
              ┌────────────────┴────────────────┐
   ┌──────────────────┐              ┌──────────────────┐
   │    Practical     │              │   (idealized)    │
   │     Problem      │              │     Research     │
   │                  │              │     Problem      │
   └──────────────────┘              └──────────────────┘
```

<u>Cause</u>: Problem in the real world

<u>Solution</u>: Activity eliminating the
   real-world problem
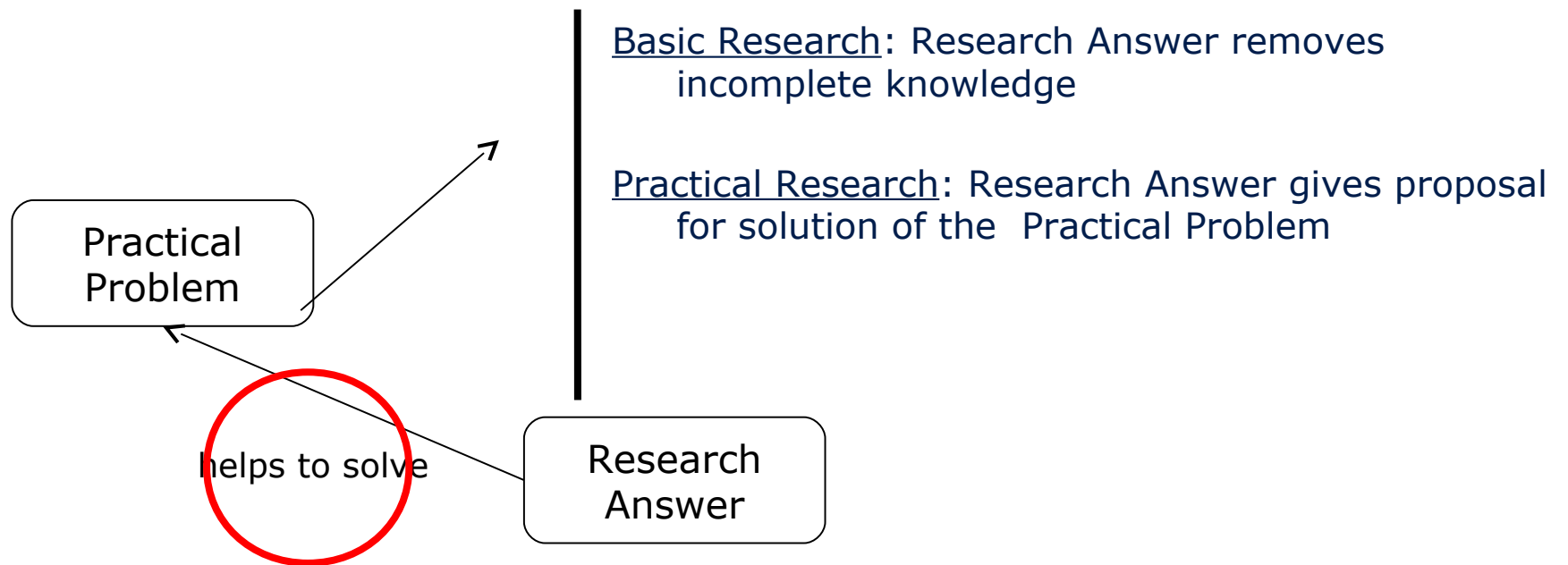
<u>Cause</u>: incomplete knowledge

<u>Solution</u>: finding the knowledge

Definition of the Research Question

Definition of the Research Question

Basic Research vs. Practical Research

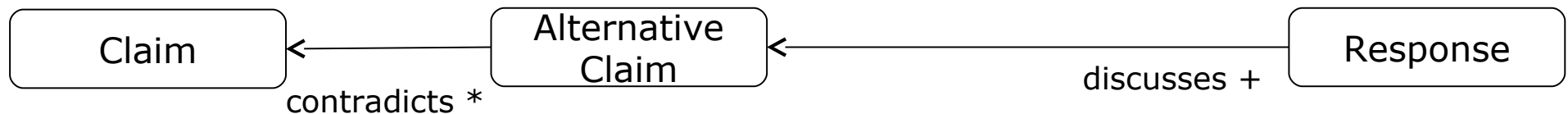Basic Research: Research Answer removes
    incomplete knowledge

Practical Research: Research Answer gives proposal
    for solution of the Practical Problem
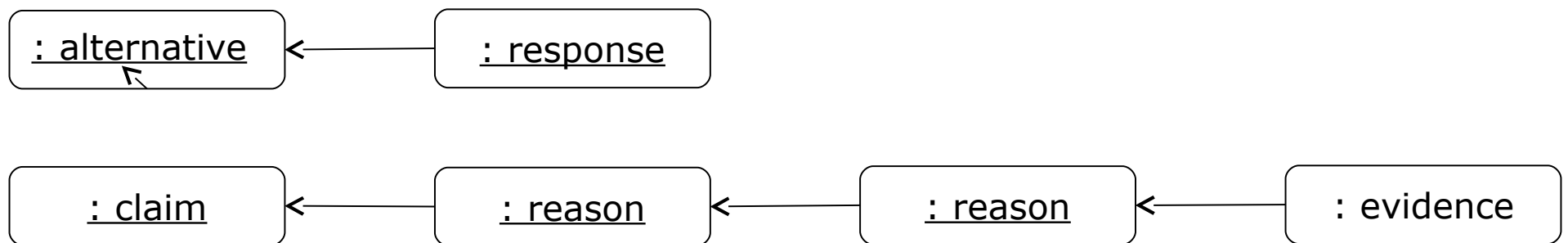
Practical
Problem

Research
Answer

helps to solve
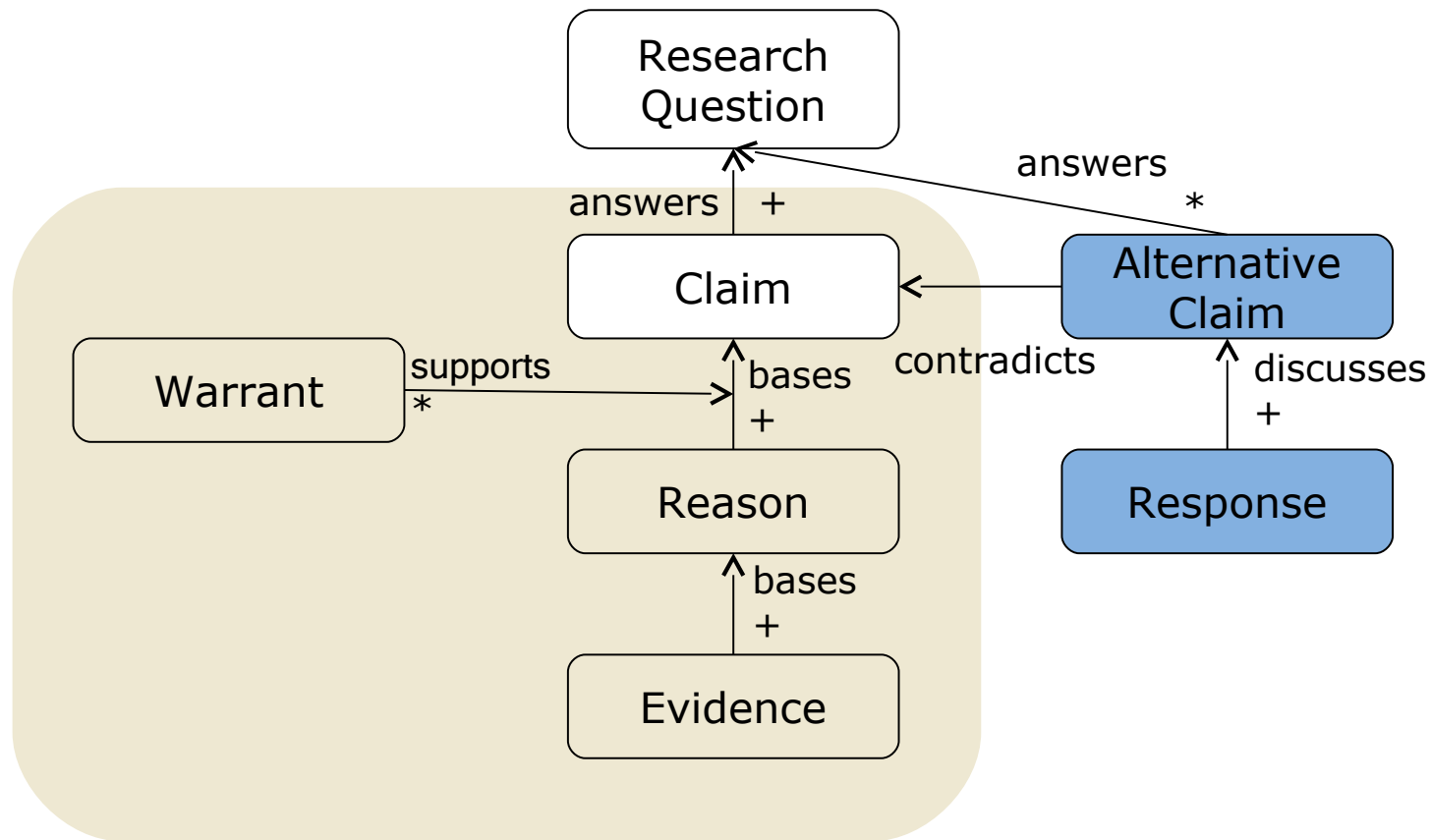
Discussion of Alternatives

- Alternatives discuss contradictions to claims
- Questioning the problem
  - or Research Answer
- Counterpositions
- Counterexamples
- Alternative Reasons
- Alternative Evidences

- Response discuss the alternative and backs up or refute the claim
- positive or negative
- always related to a reason of the claim or the claim itself

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```
┌──────────┐       ┌────────────┐        ┌────────────┐
│  Claim   │◄──────│ Alternative│◄───────│  Response  │
└──────────┘       │   Claim    │        └────────────┘
     contradicts * └────────────┘    discusses +
```

▶ **Branching of alternatives** for research answers is possible

```
: alternative  ←——  : response

: claim  ←——  : reason  ←——  : reason  ←——  : evidence
```

Storyboarding

▶ **Branching and bushing of alternatives** is possible

2) Claims should be short and comprehensible.

3) Brevity and Simplicity are not always signs of quality.

answers

: alternative   ← : response

*

1) The definition of Claims should be precise and detailed.

: claim   ← : reason   : reason   ← : evidence

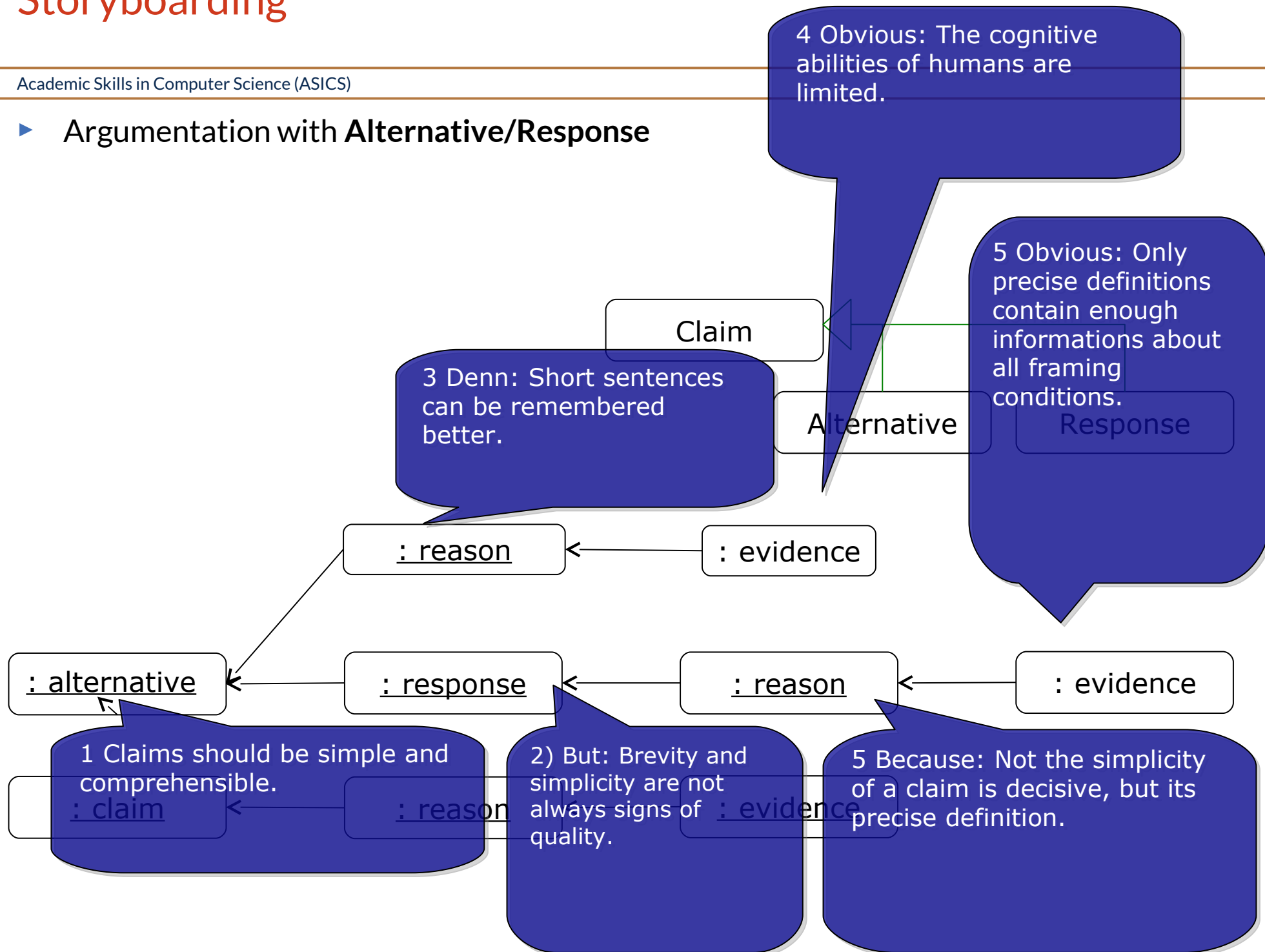© Prof. U. Aßmann
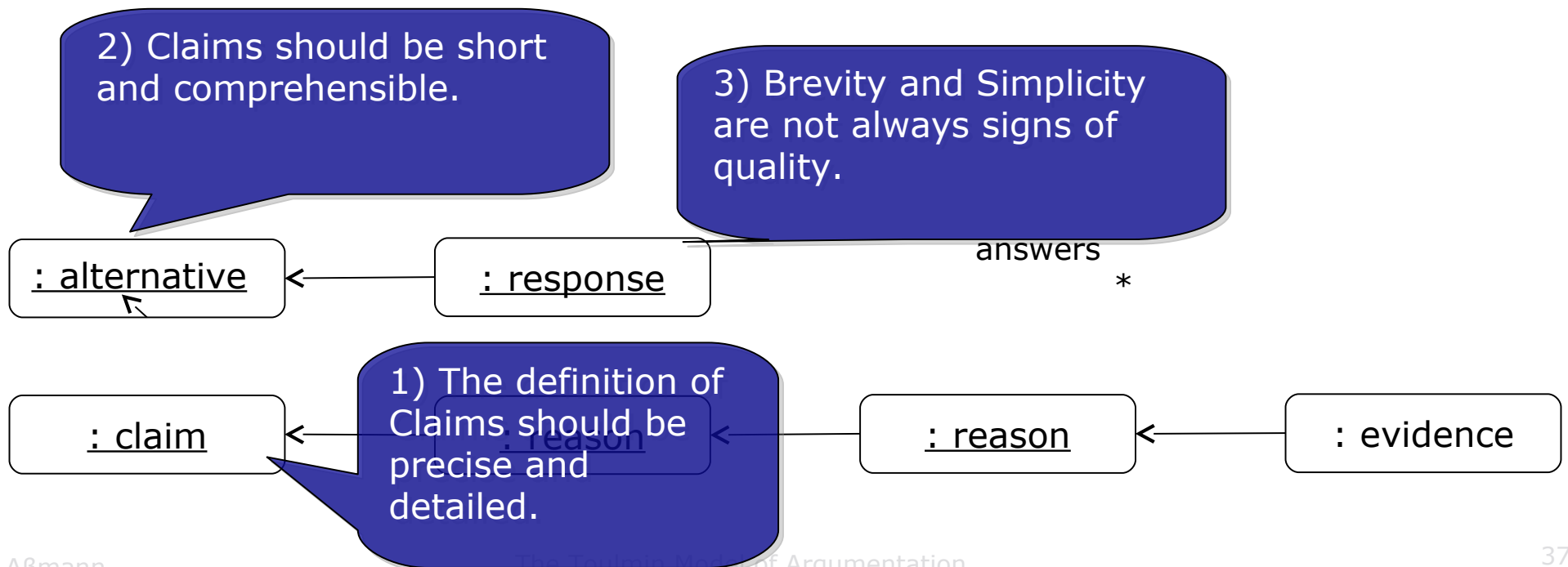
Storyboarding

► Argumentation with **AlternativeClaim/Response**

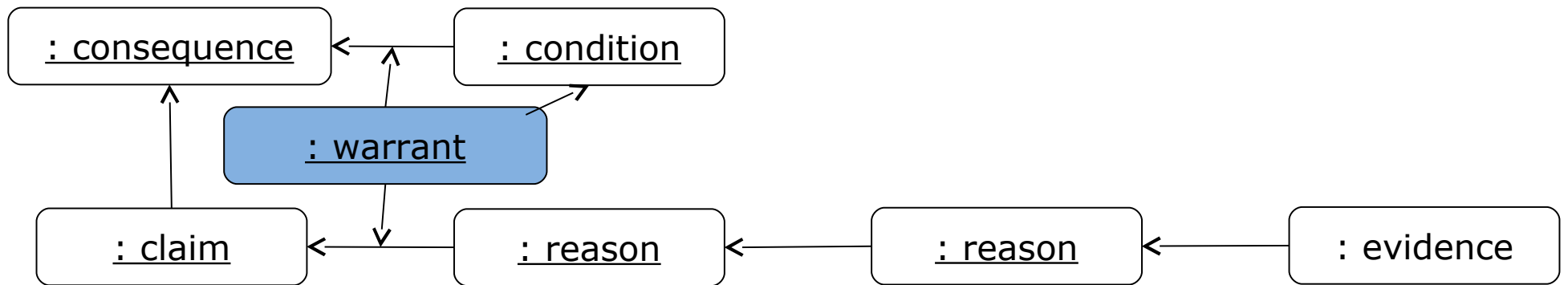► For pivoting, dialectic development
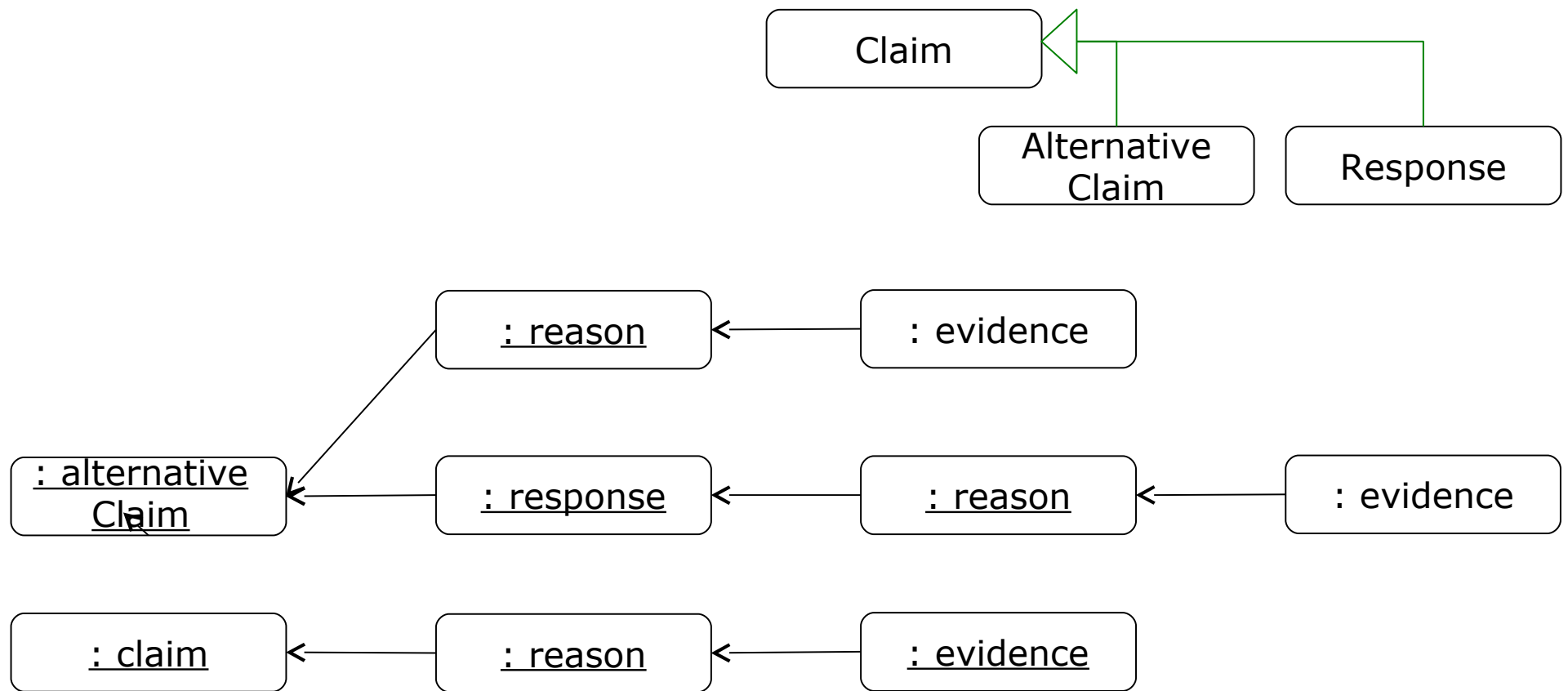
Storyboarding

▶ Argumentation with **Alternative/Response**

Storyboarding with Warrants

Storyboarding with Warrants
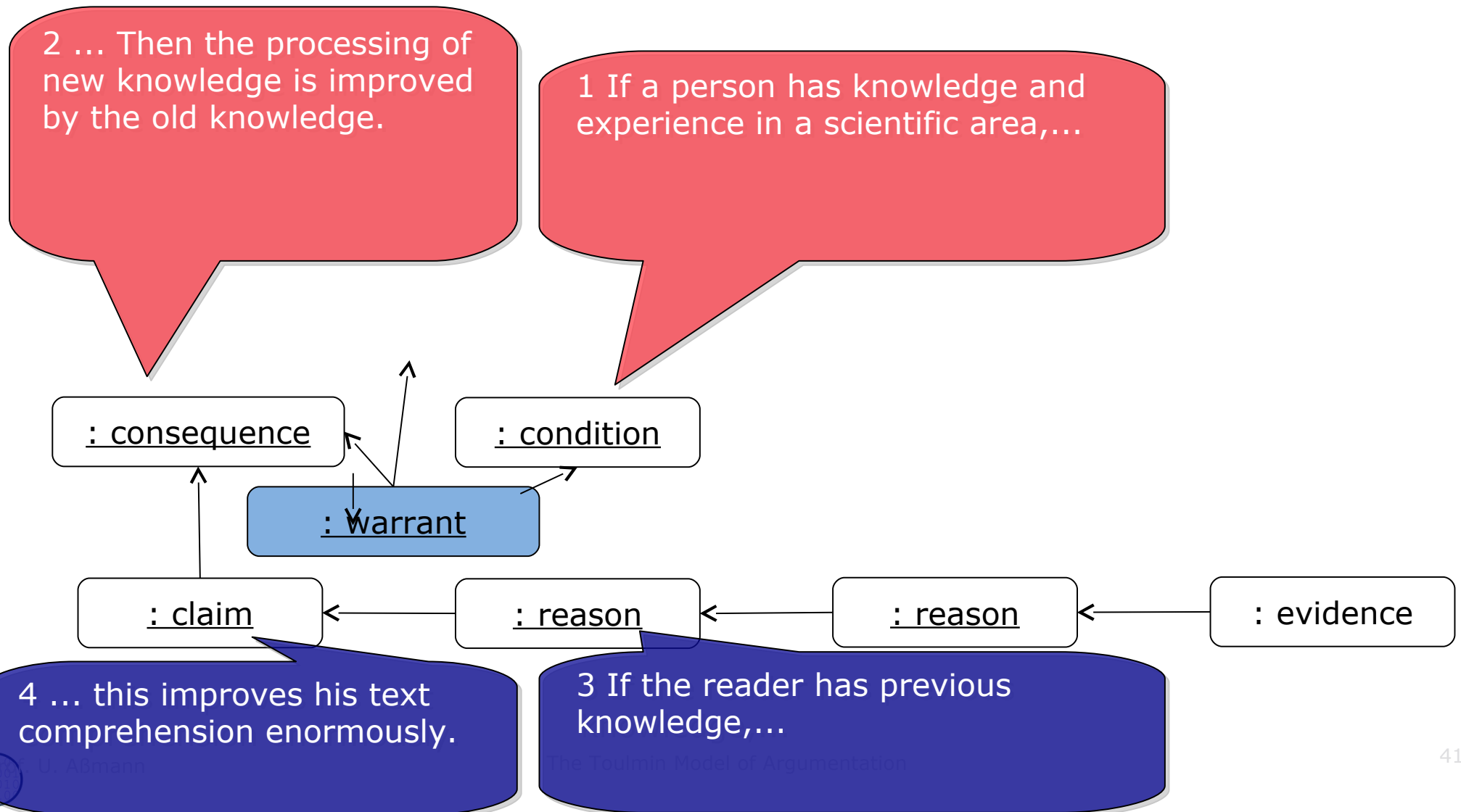
Storyboarding Results in Argument Maps and Argument Meshes

- ▶ Clusters
- ▶ Mind maps
- ▶ Hierarchical lists
- ▶ Storyboards
- ▶ Argument Meshes
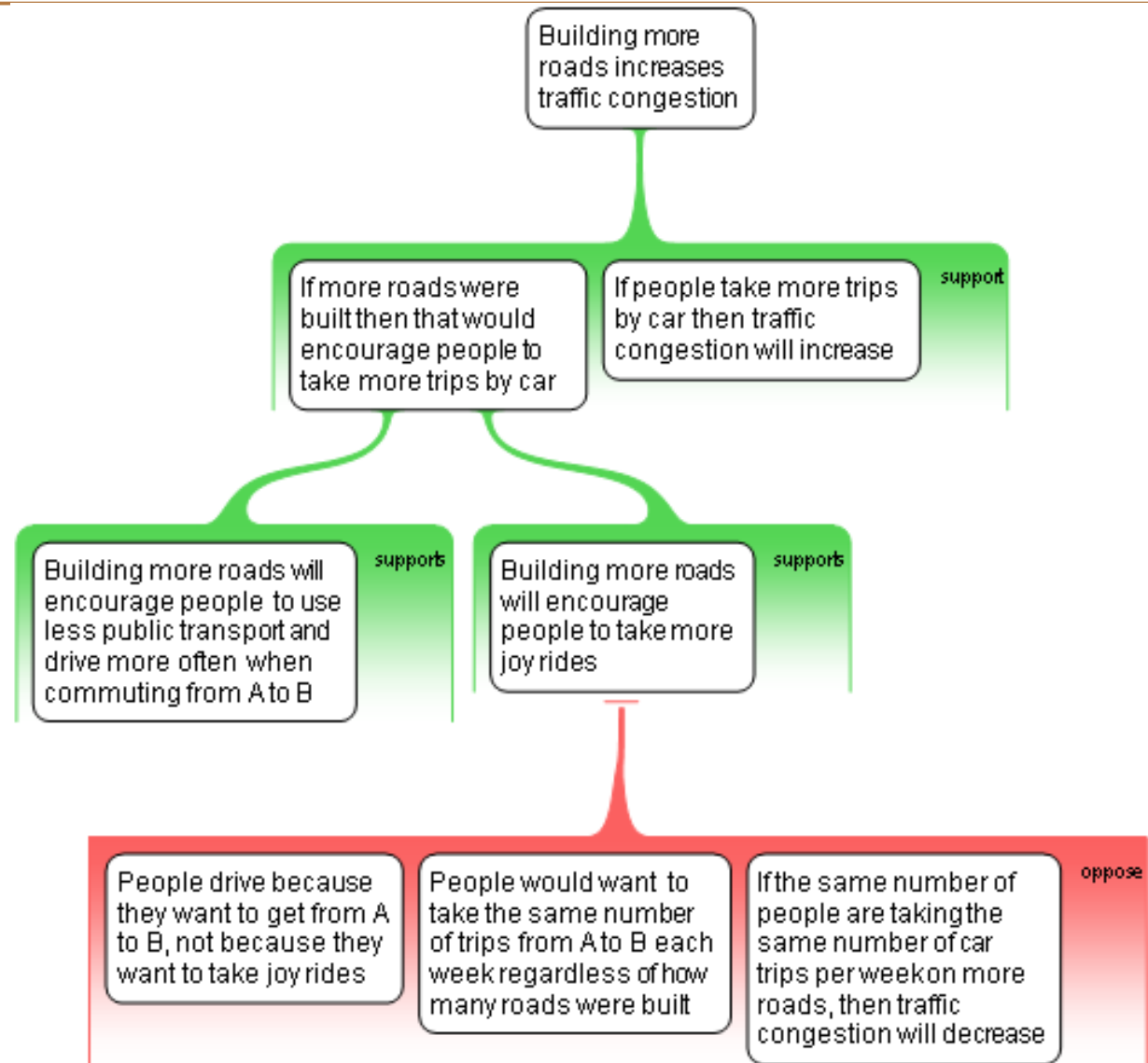
http://en.wikipedia.org/wiki/Argument_map

http://upload.wikimedia.org/wikipedia/commons/6/62/Traffic_congestion_straw_man.png

The BoCoWiTo Metamodel of Scientific Argumentation
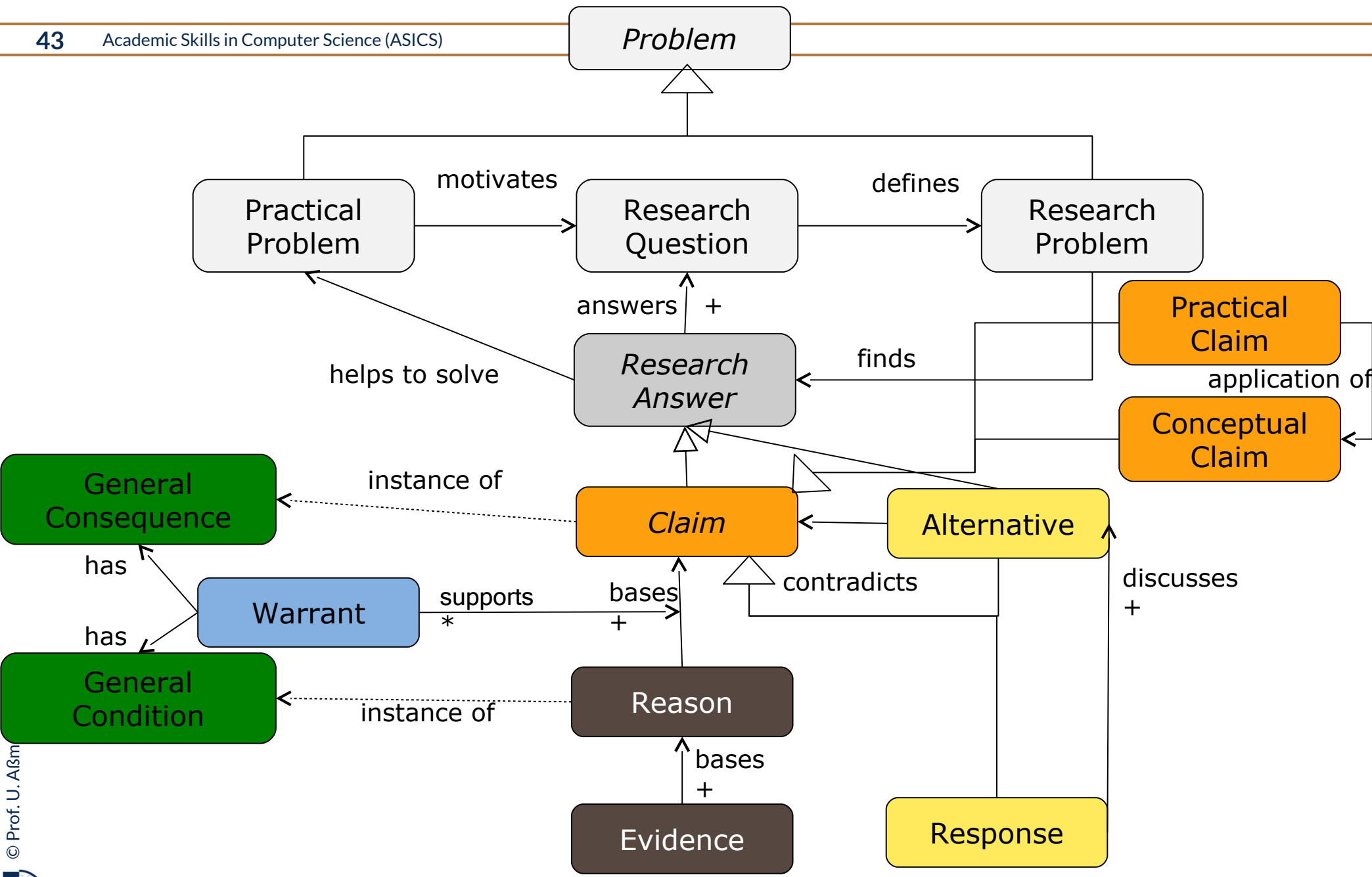
54.4. Putting Storyboards to Text in 3-Level-Clusters (Bushes)

▶ A Bush is an argument map with 3 levels. It can be textified by left-to-right depth-first traversal.
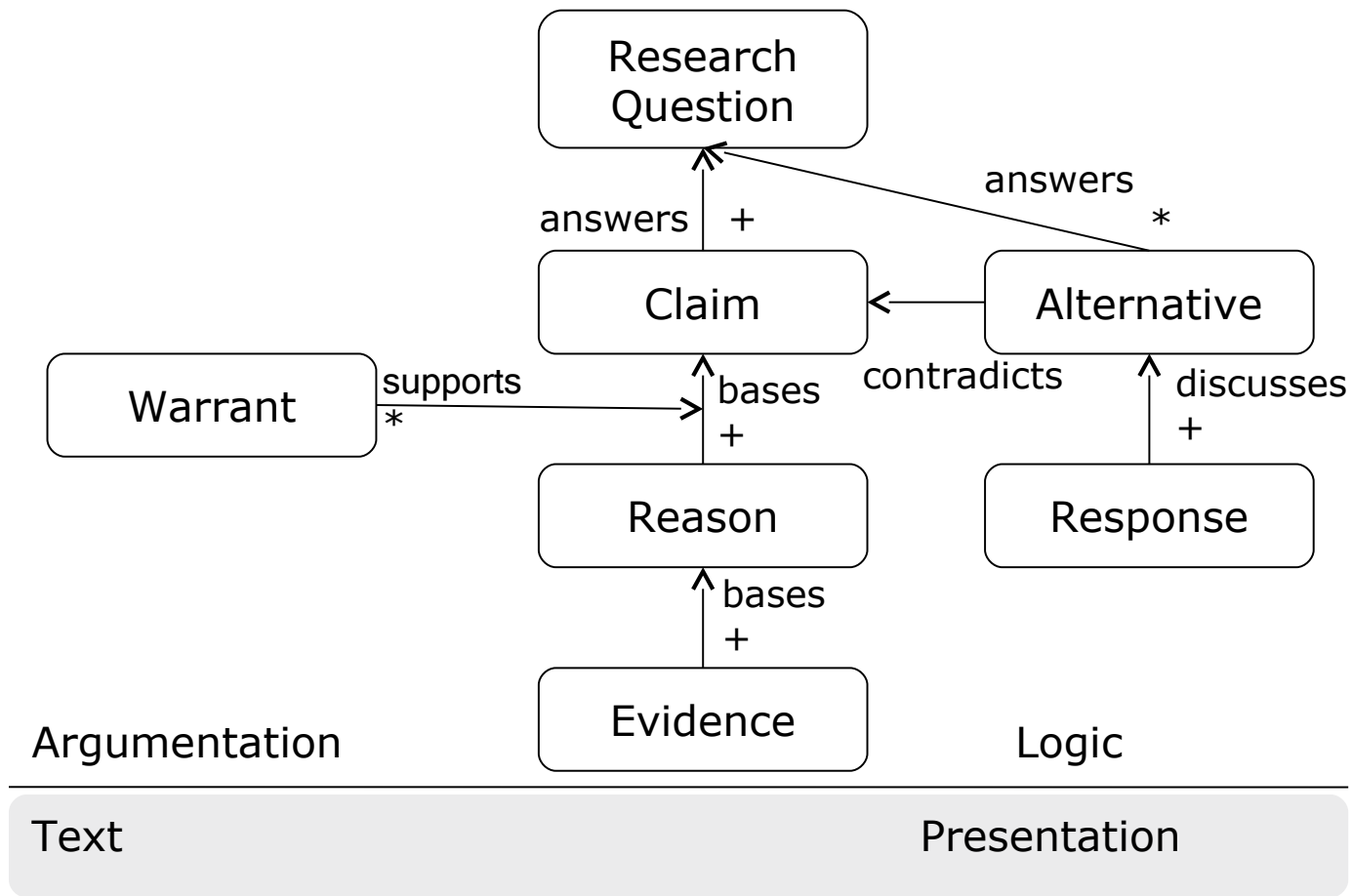
Textification: From Argumentation to the Scientific Text

The argumentation describes the logic structure of a text, but not yet its syntactic, linear form (representation)

To produce the text, the storyboard has to be **ordered** and **serialized**

- ▶ Introduction
  - Context
  - Research Problem
  - Research Answer (Solution)
- ▶ Body (see development schemes)
  - Basics
  - Reasons and Evidence
  - Alternatives
  - Claims
- ▶ Conclusion
  - Main Claims
  - Significance, Relevance und Application
  - Significance of future work

Argumentation	LOGICS
Text	REPRESENTATION

Bush Technique (Tree of Depth 3)

▶ Bushs can be linearized to text

  ▪ as whalebones and spines (parallel sentence chains)

  ▪ as paragraphs

  ▪ as chain of paragraphs (sections)

	Bush (3-level tree structure)
1.	Thesis
2.	Level 1, First argument
2.1.	Level 2, first subargument
2.2.	Level 2, second subargument
2.3.	Level 2, third subargument
3.	Level 1, second argument
3.1	Level 2, first subargument
4	Level 1, third subargument
5.	Conclusion, message

54.4.1 Claim-Reason-Evidence-Bush (CRE-Bush)

▶ This Bush groups reasons und evidences according to BoCoWiTo

▶ Level 1 is for reasons, Level 2 for evidences (facts)

	Bush: Hierarchical Structure Depth 3
1.	Claim, Thesis
2.	Level 1, first Argument (reason)
2.1.	Level 2, first evidence
2.2.	Level 2, second evidence
2.3.	Level 2, third evidence
3.	Level 1, second Argument (reason)
3.1	Level 2, first evidence
4	Level 1, third Argument (reason)
4.1	Level 2, first evidence
5.	Message

Other Types of Bushes: Taxonomy (classification)

▶ Some threading relations can be used for Bush construction, too

- Inheritance (classification)

	Classification (specialisation hierarchy)
1.	Concept
2.	Level 1, first class
2.1.	Level 2, first subclass
2.2.	Level 2, second subclass
2.3.	Level 2, third subclass
3.	Level 1, second class
3.1.	Level 2, first subclass
4.	Level 1, third class
5.	Message

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Other Types of Bushes:
Part Hierarchies

▶   Part-of can also be hierarchical

	Part Hierarchy
1.	Begriff nennen
2.	Level 1, first part
2.1.	Level 2, first subpart
2.2.	Level 2, second subpart
2.3.	Level 2, third subpart
3.	Level 1, second part
3.1.	Level 2, first subpart
4.	Level 1, third part
5.	Message

CRE-Bush with Deductive und Inductive Outline

▶ Structure:

- Deductive und inductive outline differ in their arrangement

Deductive

Introduction

Claim 1
Argument 1
Argument 2
Argument 3

Claim 2
Argument 1
Argument 2
Argument 3

Synthesis from Thesis 1 und 2

Message

Inductive:

Introduction

Argument 1
Argument 2
Argument 3
Thesis 1

Argument 1
Argument 2
Argument 3
Thesis 2

Synthesis from Thesis1 und 2
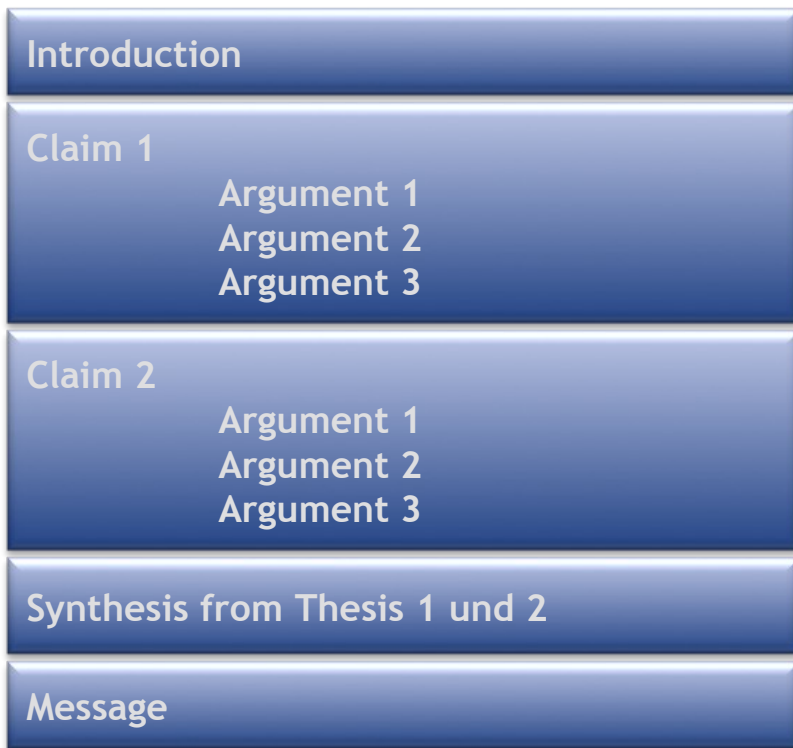
Message
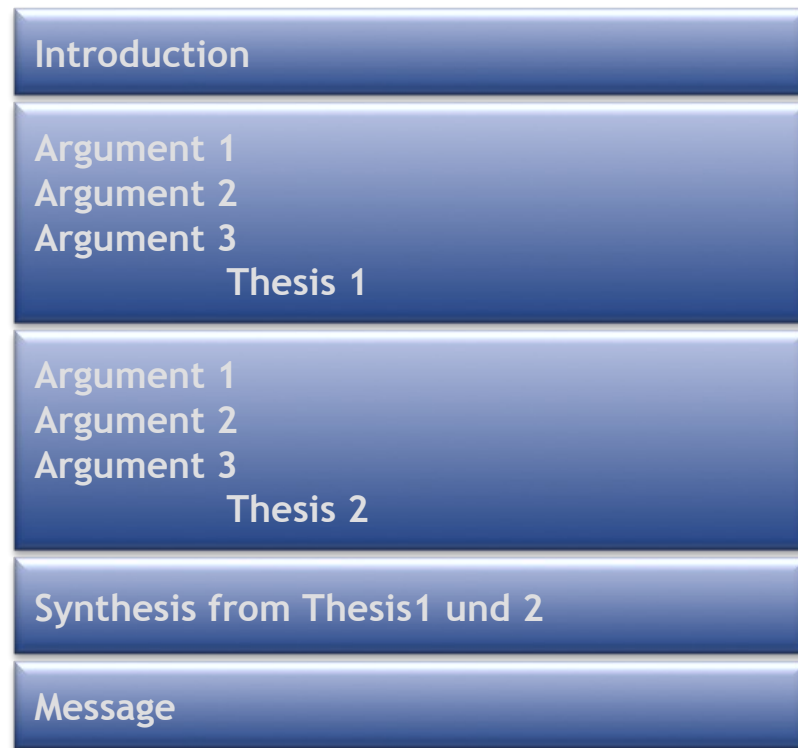
Ex.: Bush with Deductive und Inductive Outline

▶   Topic: Chances and risks of the Euro

Deductive

Introduction

Chances of the Euro are:
        Export
        Employment
        Dynamics of economy

Risiks are:
        Loss of monitary souverenity
        Cost of switch
        increasing inflation

Synthesis of Chances and Risks and consequences for the future

Message

- Puts focus on theses
- Use when consequences are very interesting

Inductive:

Introduction

Effect on Export Effect on Employment Effect on Competition   Chances of the Euro

Los of monitary souverenty Cost of switch Increasing inflation   Economic Risiks

Synthesis of Thesis1 und 2 and Discussion of the consequences for the economy

Message

- Focus is on interpretation of arguments
- Use if few material is available

Effect-Cause-Bush as Specialization of Deductive and Inductive Bushs

Effect2Cause Bush

Introduction

| Effect 1 |
| Cause 1 |
| Cause 2 |
| Cause 3 |

| Wirking 2 |
| Cause 1 |
| Cause 2 |
| Cause 3 |

| Synthesis |

| Message |

Cause2Effect Bush

Introduction

| Cause 1 |
| Effect 1 |
| Effect 2 |
| Effect 3 |

| Cause 2 |
| Effect 1 |
| Effect 2 |
| Effect 3 |

| Synthesis |

| Message |
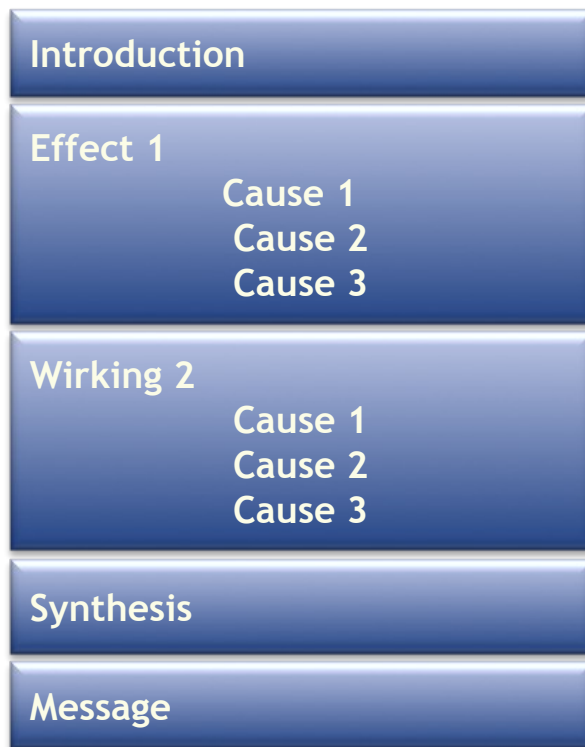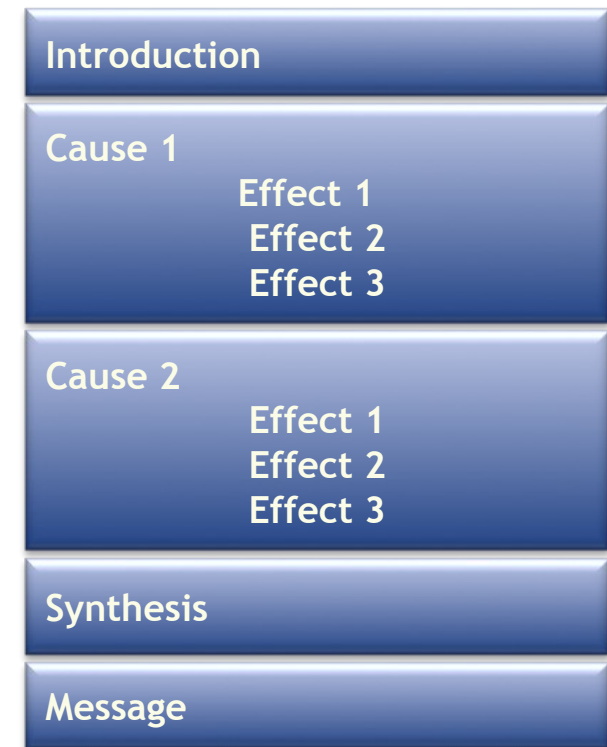
54.4.2 Claim-Reason-Evidence-Bushs with Threadings

CRE-Bushs and CRE-Meshs
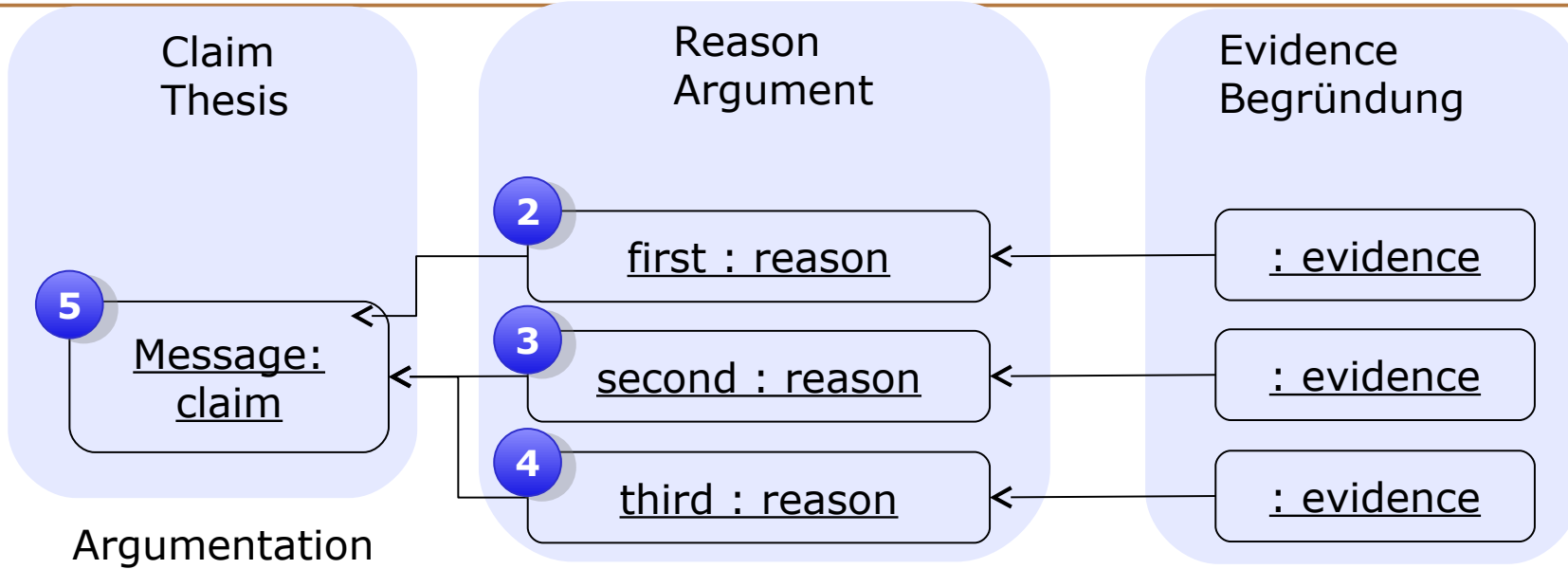
Bush with BoCoWiT-Toulmin's Claim, Reason und Evidence

Claim-Reason-Evidence-Bushs

▶ A CRE-Bush puts Reason on the second level, and Evidence on the third, basic level of the Bush.

▶ On the second level, all chaining relations can be used

▶ Then, a **CRE-Mesh** results

Simple Bush, Unordered Set of Reasons (Rhombus-Bush)

Claim Thesis

Reason Argument

Evidence Begründung

2 first : reason ⟵ : evidence

5 Message: claim

3 second : reason ⟵ : evidence

4 third : reason ⟵ : evidence

Argumentation

Text

Flattened Bush	
1.	**Thesis**
2.	**First, … because…**
3.	**Second, …, because..**
4.	**Because,… third,**
5.	**Message**

Quelle: Albert Thiele - Die Kunst zu überzeugen

Specializing Chain with Warrant
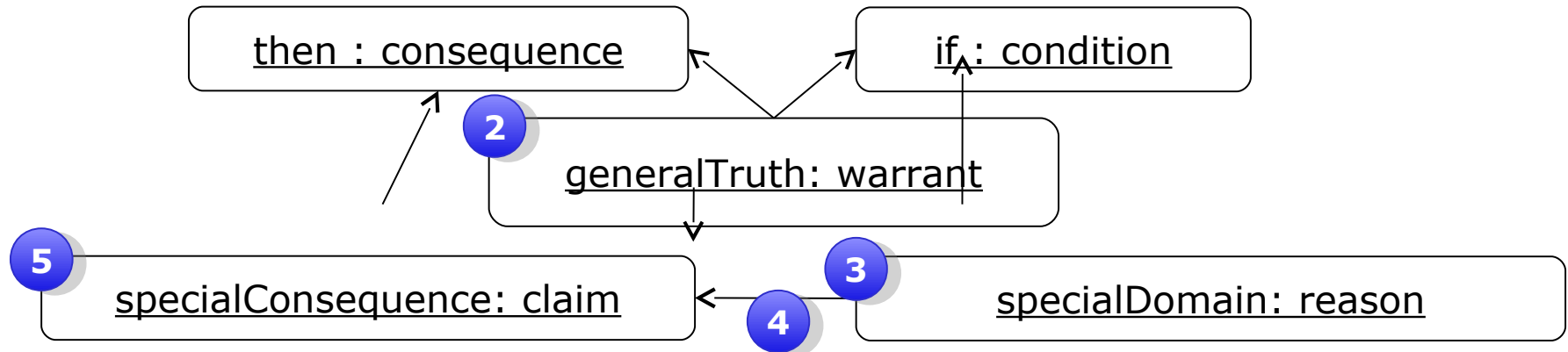
Argumentation

Text
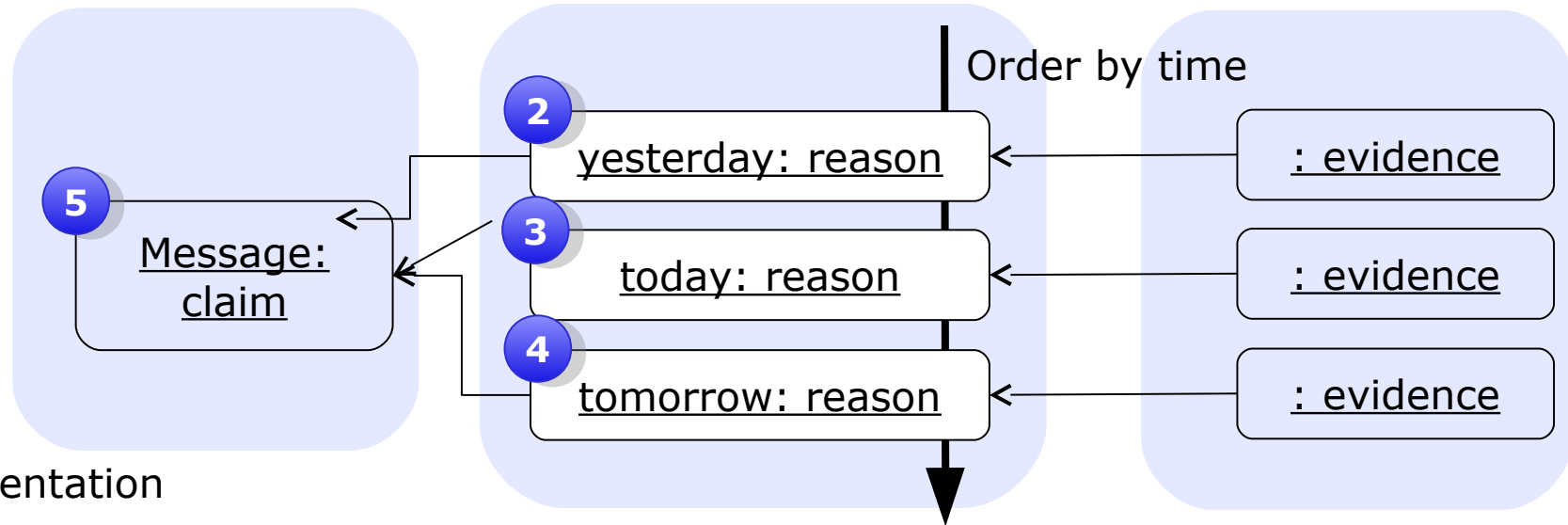
Specializing Chain

1. **Introduction**

2. **Generally speaking… if … then…**

3. **For this domain is relevant … (specialization)**

4. **In this special case, it holds …**

5. **Message**

Bush with Chain of Reasons (Mesh with Chronological Order)

Order by time

(2) yesterday: reason ← : evidence

(5) Message: claim

(3) today: reason ← : evidence

(4) tomorrow: reason ← : evidence

Argumentation

Text

Flattened chronologic mesh
1.   **Thesis**
2.   **In former days, …, since ….**
3.   **Because, …, today…**
4.   **Due to…., tomorrow …**
5.   **Message**

Quelle: Albert Thiele - Die Kunst zu überzeugen

Bush with Chain of Reasons (Mesh) (Threaded by Novelty)
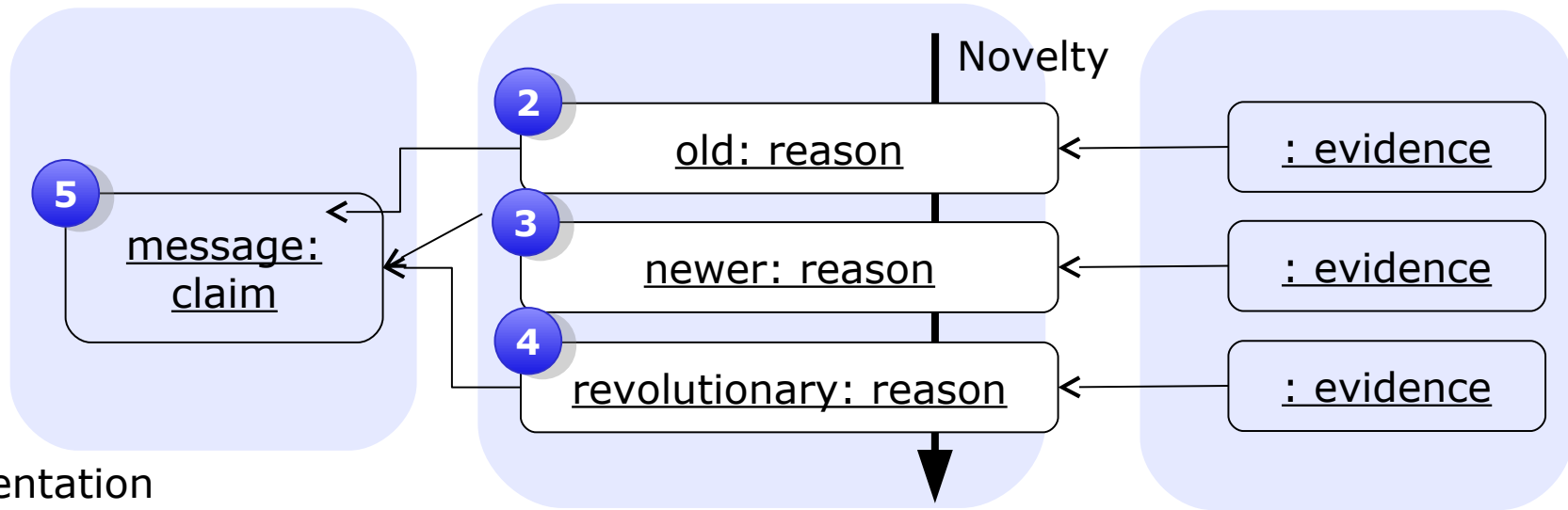
Argumentation

Text

Flattened Mesh with Novelty	
1.	Thesis
2.	Because, … it is well known that …
3.	Recently, it has been recognized, .. because …
4.	Due to … this paper shows that …
5.	Mesh

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Quelle: Booth, Colomb, Williams - The Craft of Research

Bush with Chain of Reasons (Mesh) (Threaded by Complexity)
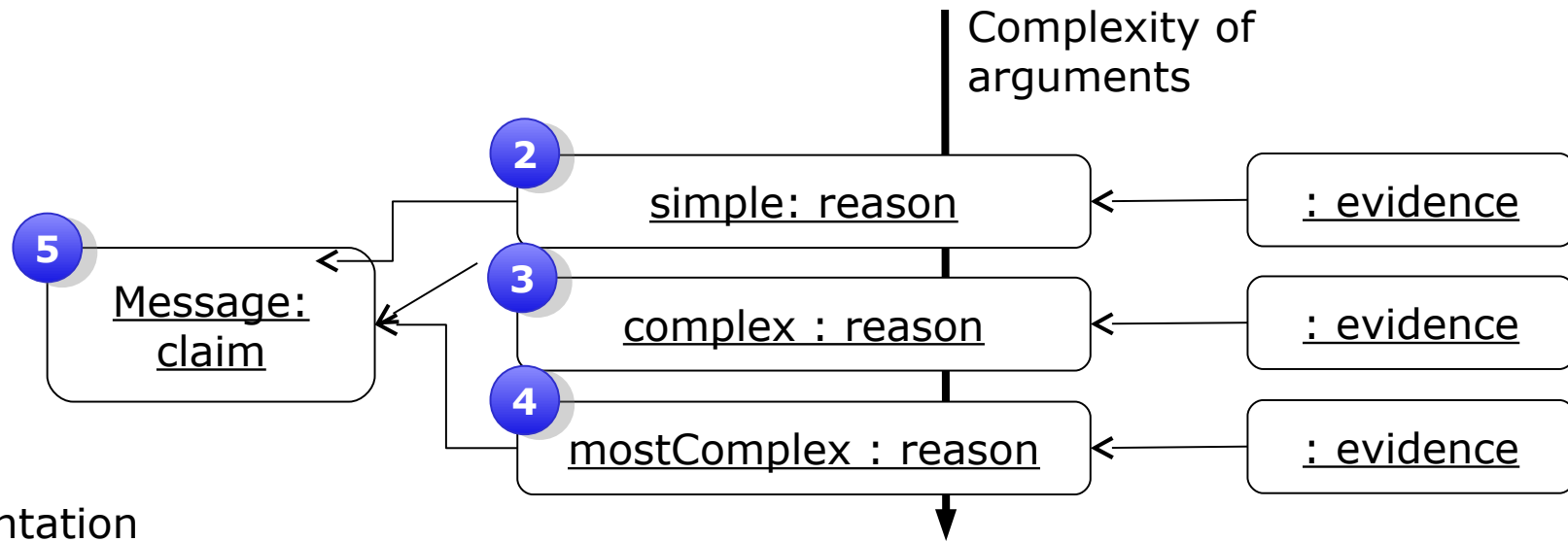
Flattened Mesh with Complexity	
1.	Introduction
2.	Simple argument and evidence
3.	Complex argument and evidence
4.	Most complex argument and evidence
5.	Message

Chain of Reasons (Threaded by Quality)

Quality of arguments

4 best : reason ← : evidence

5 Message: claim ← **3** second best: reason ← : evidence

2 third best: reason ← : evidence
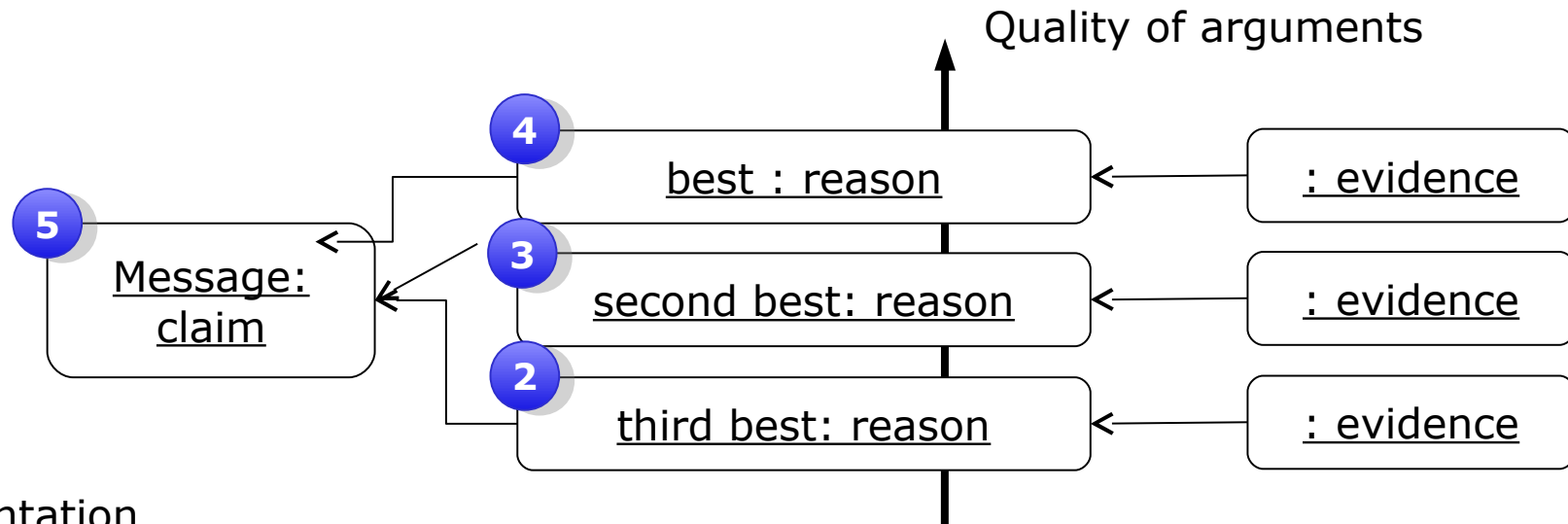
Argumentation

Text

Flattened Mesh with Strength
1. **Introduction**
2. **Third best argument and evidence**
3. **Second best argument and evidence**
4. **Best argument and evidence**
5. **Message**

Quelle: Albert Thiele – Die Kunst zu überzeugen

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Chain of Reasons (Controversiality)

Controversity of arguments

2 accepted: reason ← : evidence

5 Message: claim

3 known: reason ← : evidence

4 controversial: reason ← : evidence
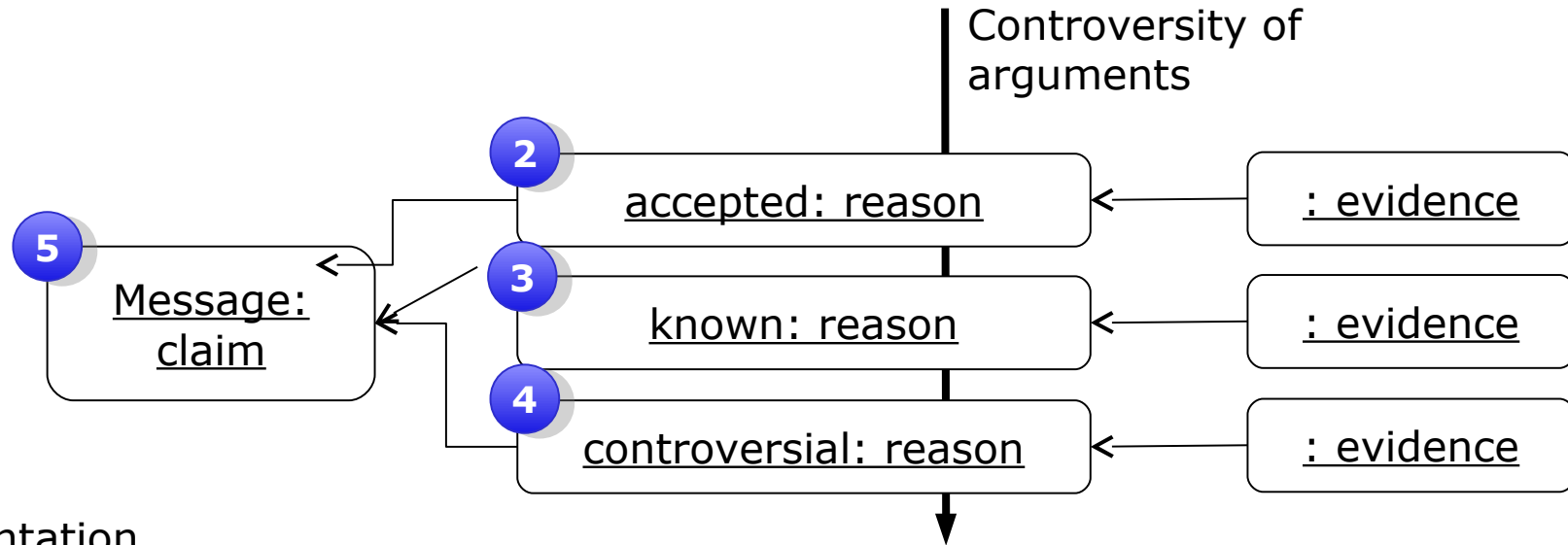
Argumentation

Text

Chain (Controversity)
1.   Introduction
2.   As accepted by the community …
3.   We know from …
4.   However, it is pretty controversial …
5.   Message

Quelle: Booth, Colomb, Williams - The Craft of Reserach

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Entwicklungsschemata

54.4 Other Types of Arguments (Types of Warrants, Reasons and Evidences)

[Bünting]

Different Sorts of Arguments

Claim (Behauptung): I will do my Bachelor thesis not before the holidays.

Justification: Because in this period, I must do two talks.

Objection: But you must complete the certificate within the period, otherwise you get problems with the Bafög money.

Response: The semester will last until end of September, that leaves me enough time to do the thesis.

Objection: But we wanted to have holidays in September...

Response: Until then, I will be done – I will submit end of August.

Objection: But if the dozent will go on a holiday also im September?

Response: Then I will ask him to date the certificate to September.

Objection: Will he do that?

Response: Ja. Petra says, he has done this also with Gaby.

Objection: But if you do not present the certificate with the date of September to the Bafög office, they will not have mercy with you.

Response: They are not without mercy; they have laws.

Objection: Well, well, it is your Bafög support and not mine.

Argumentation by Evidence (Fact, Tatsache)

▶ Evidence is generated by hard facts (proofs, experiments, empirical studies, statistics, numbers, dates)

... because everybody has held two talks...

... do the exam in this period, *because last year they got problems...*

Argumentation by Common Goals

▶   Appeal to common goals

▶   Goals for insights or actions

*But **we wanted to have** holidays in Summer.*

I will submit the thesis in July.

Classical Forms of Arguments from Rhetorics

http://de.wikipedia.org/wiki/Typen_von_Argumenten

Evidences:

▶ **Argumentum ad oculos** ("nach dem Augenschein")

▶ **Argumentum a posteriori** (experience)

Reasons:

▶ **Argumentum e contrario** (justification from contrary)

▶ **Argumentum a priori** (**deductive proof**, deductive argument, logic deduction, transitivity of implications, cause-effect argument)

▶ **Argumentum forteriori** (justification from a already proven argument, e.g., **experiment**)

▶ **Argumentum ad hominem** (argumentation against a person, polemic, unfair)

Warrants:

▶ **Argumentum e consentu gentium** (laws, norms, standards)

▶ **Argumentum ad traditionem** (customs, traditions)

▶ **Argumentum a tuto** (in any case, the position does not harm, and can be accepted)

Training Unit

► [Bünting, Stickel-Wolf/Wolf] Give arguments for the claim „Smoking damages your health", using

► Argumentum e contrario

► Argumentum forteriori

► Argumentum a priori

► Argumentum a posteriori

► Argumentum ad hominem

► Argumentum ad oculos (nach dem Augenschein)

► Argumentum e consentu gentium (Gesetze, Norm, Naturgesetze)

► Argumentum ad traditionem

► Argumentum a tuto

Argumentum a Posteriori (Experience)

- ▶ Citing experiences (subjective evidence)
- ▶ Singular events, personal events

... but he treated Gaby in this way.

If you do not present your certificate of the course before September, the Bafög-Office will not pay you anymore, because they lack mercy.

Arguing with Own Experience: Why Dalton has Excessive Experience in Swimming

▶ [Dalton]

Since I started the Dalton Swimming School twelve years ago, at 23 West 44th Street, New York City, I have always shown my method of teaching swimming scientifically, which is exactly the reverse of the methods of other instructors; that is, teaching pupils how to swim on their backs first, before teaching them the breast stroke, which I contend is the hardest stroke of all, when done correctly.

Another innovation of mine is the use of the Dalton nose-clip, a clip that pinches the nostrils tightly together, keeping the water out of the nose and forcing the pupil to breathe through the mouth, which is the correct way of breathing while swimming.

The more air one gets into the lungs the lighter one is in the water, making swimming easier.

That is the reason so many would-be swimmers, simply because they try to breathe through the nose, get winded very quickly.

The main thing about breathing in all the strokes is to keep the mouth open all the time.

With the mouth open, air can come in and out of its own accord and the pupil does not have to worry about the breathing.

Arguing by Examples as Evidences; Repeated Point

[Schmucker]

There is grave reason to doubt whether, prior to the arrival in Pennsylvania of Henry Melchior Muehlenberg, any of the German Lutheran congregations in Pennsylvania had a well-developed, clearly defined, written constitution. I have carefully examined all the written records of nearly all the congregations which were in existence at that time, and have failed to find evidence of any such constitution. The first known written constitution of the church at Philadelphia was introduced in 1746 by Brunnholtz and Muehlenberg, and it was brief and rudimentary. The congregation at the Swamp, New Hanover, was the earliest German congregation in America, begun in 1703 by Justus Falckner, but whatever the form of organization which it may have received from him, or his immediate successor, no record of it is known to exist, and the first written constitution now known is in the hand-writing Muehlenberg. The Tulpehocken congregations were established by Palatinates from the Hudson and Mohawk, who came to Pennsylvania in 1723 and 1729. They were familiar with the congregational organizations in New York under Kocherthal and Falckner, which were formed under the counsel of Court Preacher Boehm, probably after the similitude of the Savoy Church in London, and under the influence of the long established Dutch Lutheran constitution in New York, based on that at Amsterdam. But no written constitution is now known in Tulpehocken earlier than that introduced by Muehlenberg. In all the old congregations the case is the same, so far as any known evidence proves.

Arguing by Examples as Evidences; Repeated Point

[Schmucker]

The Swedish congregation at Philadelphia, as well as those at Morlatton and Merion to a less extent, undoubtedly exercised a marked influence on the German Lutheran congregations. It was well organized long before establishment of the first German Lutheran congregation in America. The pastor of the Wicaco Church from 1677 to 1693, Fabritius, was a German, and cared for such German Lutherans as settled near the city. Rudman, who succeeded him, showed his interest in the Germans by bringing Falckner into the ministry, and his successor, Sandel, united with him in this act. Rudman preached in Dutch, and may have also understood German. The first regular ministrant to the German congregation at Philadelphia was the Swede, John Eneberg, and it is probable that it was organized by him. Pastor Dylander held service for the Germans regularly in the Wicaco Church, and Muehlenberg's services were held there mainly until the erection of St. Michael's. The Swedish ministers met with the Germans in the earlier meetings of the ministerium. The relations between Provost Wrangel and Muehlenberg were of the most intimate nature; they labored together as brothers in the superintendence of the congregations under their care, and finally when Muehlenberg was working out the enduring constitution of the German Church, Wrangel wrought out that of the Swedish Church. The German Church constitution was prepared with the co-operation of Wrangel, and he attended the meeting of the congregation at which it was accepted, and made an address. From the earliest times to the completion of the final constitution, the influence of the Swedish organization was strongly felt.

Argumentum e consentu gentium
Argumentation by Law (Gesetzl. Regelungen), Values, Standards, Rules, Compliance

▶ Cite norms, standards, laws, rules, common sense, court decisions

▶ Quite different from domain to domain

▶ Ex.:

- DIN/ISO/IEC norms

- Standards, such as Common Criteria

- Mathematical laws

- Natural laws

... for I must give two talks ... *according to the rules of the study program.* (Studienordnung)

.. according to the Sarbanes-Oxley-Act (SOX), managers in the US are personally liable for the business reports of their companies.

Argumentation by Authorities

▶ Cite important authorities: People, Books, …

▶ Examples:

Petra says, …

The pope writes in his encyklica "Humanae vitae",…

Already Einstein wrote in his letter to President Roosevelt, ….

▶ Architecture, Art: School like „Das Bauhaus" or "The French Impressionists"

▶ Software Engineering: "Gang of Four", "Parnas", "Dijkstra"

Argumentation by Authorities (Older Organizations), Q+A Paragraph

[Schmucker] The question very naturally arises and claims consideration, Whence came this usage of the Pennsylvania German Lutheran congregations? This arrangement is almost entirely unknown in the Lutheran Church in Germany, where the church is united with the State, and has little right of self-government. That the same mode of organization should have been adopted at the outset by them all is not only in itself strange, but shows that this arrangement must have been brought to their notice from some quarter, and having been tested commended itself to them. We believe that this provision of Elders and Vorsteher or Deacons, was accepted by them from the Swedish Lutheran Churches on the Delaware, the early Dutch Reformed and German Reformed Churches in Pennsylvania, and the Dutch Lutheran Churches in New York and New Jersey, and ultimately from the German Lutheran Church in London, and the Dutch Lutheran Church in Amsterdam. And as Thesis earlier organizations exerted an influence not merely upon the first shaping of the German Lutheran congregations, but continuously upon the whole formation of their congregational constitutions, until they assumed their final complete condition, it is the more proper that they should receive careful consideration.

Arguing by Examples as Evidences; Repeated Point

[Schopenhauer] The Essays Of Arthur Schopenhauer. Arthur Schopenhauer [EBook #10739]

Therefore, in opposition to the above-mentioned form of the Kantian principle, I should be inclined to lay down the following rule: When you come into contact with a man, no matter whom, do not attempt an objective appreciation of him according to his worth and dignity. Do not consider his bad will, or his narrow understanding and perverse ideas; as the former may easily lead you to hate and the latter to despise him; <point repeat> but fix your attention only upon his sufferings, his needs, his anxieties, his pains. <consequence>Then you will always feel your kinship with him; you will sympathise with him; and instead of hatred or contempt you will experience the commiseration that alone is the peace to which the Gospel calls us. The way to keep down hatred and contempt is certainly not to look for a man's alleged "dignity," but, on the contrary, to regard him as an object of pity.

54.5 Strategies for Counterarguing, Presenting Alternatives

Counterstrategies to Justify Alternative Claims with Refuting Responses

▶ Attack the evidence of the other claim

- refute them

- dispute them

- find contradictory facts

▶ Attack the warrants (usually difficult)

▶ Attack the goals

- Set new goals against the others

- Concede to the other goals, but change and adapt them "well, that is partially true, but we need…"

▶ Attack the subjective experiences of others

- Find counterexamples of experiences

- Find rebuttals (exceptions)

Counterstrategies

▶ Question values, norms, standards, rules

- do not acknowledge values or rules
- show new limitations of rules

▶ Question authorities

- Do not accept the Autorities used in the argumentation
- Define an own authority/school

▶ Other

- Change cause and effect: "not because, but since"
- Change the order of arguments and develop a new one

The End

▶ Courtesy Dr. Christian Wende, Dr. Birgit Demuth, Matthias Schmidt

Wie argumentiere ich in einer schriftlichen Arbeit?

- ▶ [Stickel-Wolf/Wolf]
- ▶ Rechtzeitige und präzise Definition von Begriffen
- ▶ Relevanz der Aussagen
- ▶ Gedankliche Geradlinigkeit
- ▶ Konsistenz der Aussagen
- ▶ Redundanzfreiheit
- ▶ Begründung von Aussagen
- ▶ Hoher Gehalt von Aussagen
- ▶ Dialogische Darlegungsform
- ▶ Abgabe von Prognosen
- ▶ Ausweis fremden Gedankenguts
- ▶ Hinterfragung von Aussagen
- ▶ Sachlichkeit
- ▶ Sorgfältige Unterscheidung von „Sein" und „Sollen"
- ▶ Zielgruppenbezogenheit der Aussagen