

# UTT9101 Initiation to Scientific Writing

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I

Who's who?

# Organisation and Schedule

**Lecture 1:** Introduction (Amirouche Moktefi)

**Lecture 2:** Publishing (Marko Vendelin)

**Lecture 3:** Visualisation (Jeffrey Tuhtan)

**Lecture 4:** Authorship ethics (Maarja Kruusmaa)

**Lecture 5:** Popular Science (Krõõt Nõges)

# Practicalities

**Language of the course:** English

**Credits:** 3 ECTS

**Contact:** Preferred means of contact is by email: [amirouche.moktefi@taltech.ee](mailto:amirouche.moktefi@taltech.ee)  
Responses provided usually within 2-3 workdays.

**Course's e-support:** Course materials can be accessed via Moodle.

For a detailed description of the course, see the extended Syllabus on Moodle.

## **Assessment:**

Each lecture has a homework which is evaluated (Pass/Fail) by the lecturer.

The deadline for all homeworks is: 13.11.2024.

Only students who passed all the homeworks are eligible for the exam.

The exam takes place in class on 27.11.2024, at 10.00-11.30.

To pass the course, a student needs to pass the exam.

II



Your article/dissertation

# **What is** **a Scientific Text?**



x Scientific

*Text*

x

x



Knowledge



III

# The Scientific method

We have a **problem**.

# The Scientific method

We have a problem. We conjecture the hypothesis **H**.

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We **test** the hypothesis **H** by performing an **experiment**:

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We test the hypothesis **H** by performing an experiment:

From the hypothesis **H**, we infer an **observational** consequence **O**:

If **H**, then **O**



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If **H**, then **O**

If the consequence **O** is *observed*,

If the consequence **O** is *not observed*,

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We test the hypothesis **H** by performing an experiment:

From the hypothesis **H**, we infer an observational consequence **O**:

If **H**, then **O**

If the consequence **O** is observed, the hypothesis is **confirmed**

If the consequence **O** is not observed, the hypothesis is **disconfirmed**

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We have a problem. We conjecture the hypothesis **H**.

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**If H, then O**

If the consequence **O** is observed, the hypothesis is **confirmed**

*(Probably)* **H**.

If the consequence **O** is not observed, the hypothesis is **disconfirmed**

*(Certainly?)* **not-H**.

# From Research to Writing



# The Scientific Paper

We have a problem. We conjecture the hypothesis **H**.

Introduction

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Method

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Results



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*(Probably)* **H**.

If the consequence **O** is not observed, the hypothesis is **disconfirmed**

*(Certainly?)* not-**H**.

Discussion

# The Scientific Paper

We have a problem. We conjecture the hypothesis **H**.

Introduction

We test the hypothesis **H** by performing an experiment:

From the hypothesis **H**, we infer an observational consequence **O**:

Method

If **H**, then **O**

If the consequence **O** is observed, the hypothesis is **confirmed**

*(Probably)* **H**.

Results

If the consequence **O** is not observed, the hypothesis is **disconfirmed**

*(Certainly?)* not-**H**.

Discussion

Introduction

Method

Results

and

Discussion

Introduction

Method

Results

and

Discussion

Note: There are variations!

Introduction: What is the problem?

Method: How do you address it?

Results: What did you find?

and

Discussion: What does it mean?

Note: There are variations!

# Introduction

## Method

## Results

## and

## Discussion

Background/Motivation of the research

State of the art

Research gap

Research question(s)

Statement of novelty

Statement of significance

Structure of the dissertation

Definitions

Note: There are variations!

Introduction

Method

Results

and

Discussion

Description of the method

Justification of the method

Data collection

Data analysis

Limitations?

Transparency to allow replication

Note: There are variations!

Introduction

Method

Results

and

Discussion

Note: There are variations!

Description of the Sample/Data?

Main Finding (without discussion)

Secondary findings

Use of tables and figures

Quotations

(Almost) no use of references

‘Table/Figure show...’

‘Interviewee X stated that...’



Introduction

Method

Results

and

Discussion

Summary of the (main) findings

Commentary

Connection to past research

Connection to conceptual framework

‘Findings suggest/indicate...’

Note: There are variations!

Introduction

Method

Results

and

Discussion

## Abstract:

- Complete after the dissertation.
- Use mini-IMRaD.

Note: There are variations!

Introduction

Method

Results

and

Discussion

### Abstract:

- Complete after the dissertation.
- Use mini-IMRaD.

Literature review

Conceptual framework

Case study

Before or after  
the method?

Note: There are variations!

Introduction

Method

Results

and

Discussion

Note: There are variations!

### Abstract:

- Complete after the dissertation.
- Use mini-IMRaD.

Literature review

Conceptual framework

Case study

Before or after  
the method?

### Conclusion

- Summary + answers to the RQ(s)
- Limitations? Implication? Future research?
- Policy recommendations?

IV

'Argument!' helping students understand what essay writing is about

Ursula Wingate\*

# DEVELOPING AN ARGUMENT

- I-

Selecting and using  
relevant  
information from  
sources

- II-

Establishing your  
own position

- III-

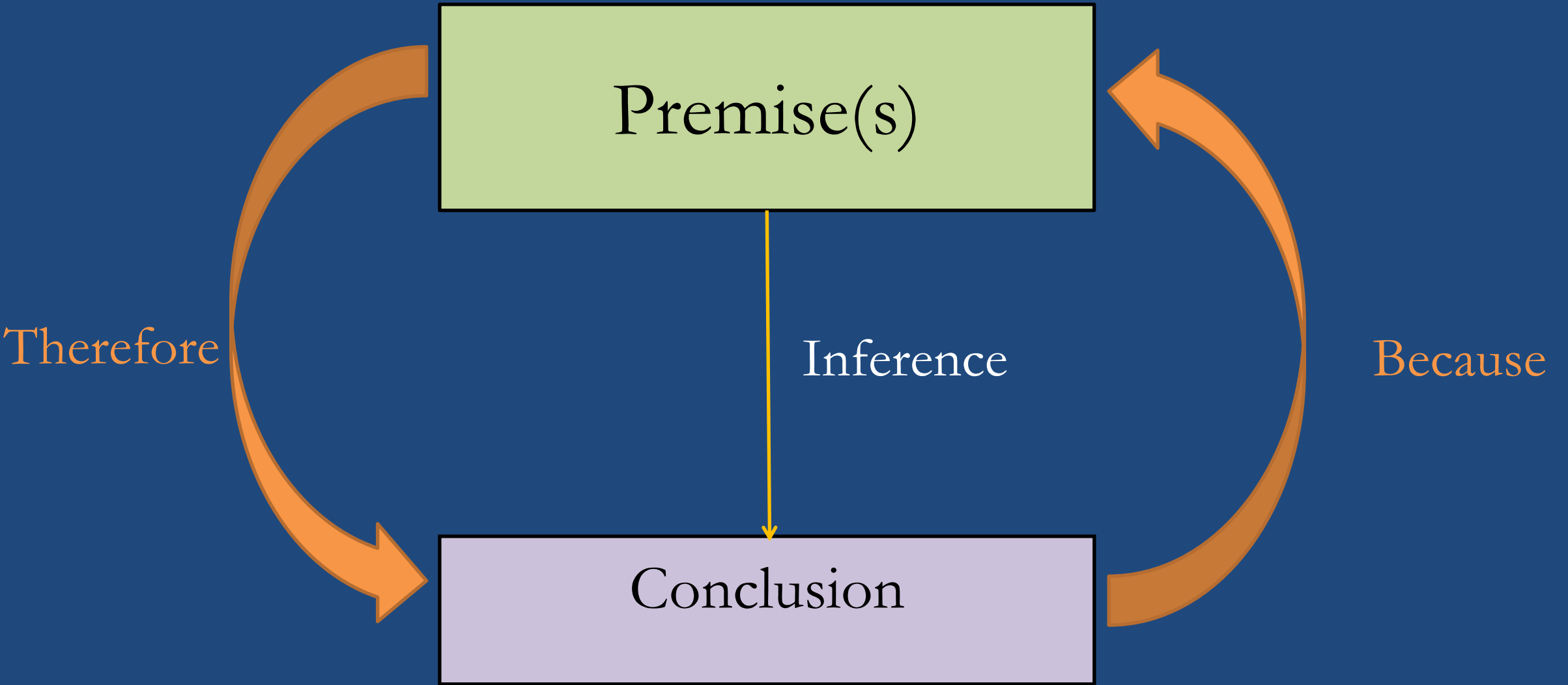
Presenting your  
position in a  
coherent manner

Premise(s)

Inference

Conclusion





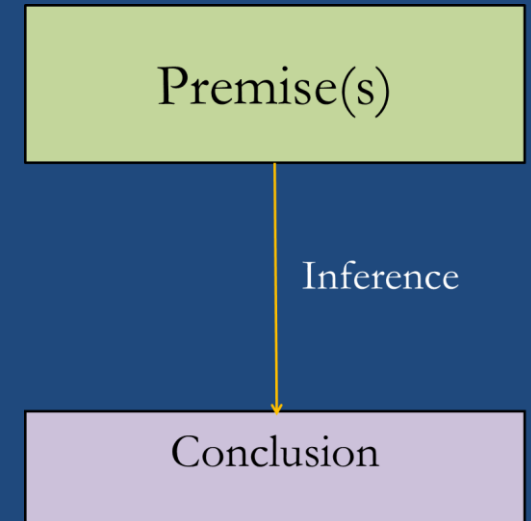


# Evaluating Arguments

Evaluating an argument requires answering two main questions:

1- Are the premises true?

2- Is the inference correct?



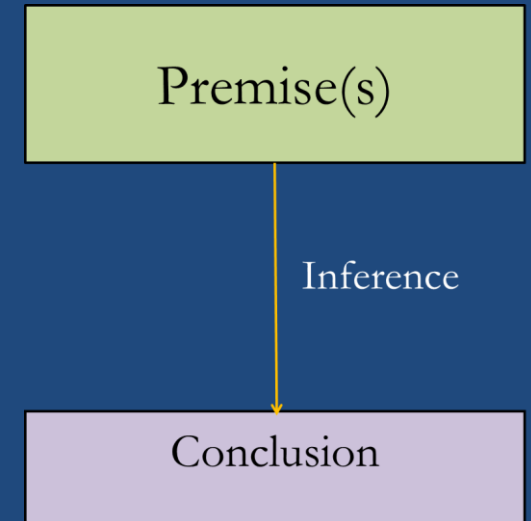
# Validity and Soundness

## Validity:

- If the premises are all true, then the conclusion is necessarily true.
- The validity of an argument does not guarantee the truth of its conclusion.

## Soundness:

- An argument is Sound if it is valid and has true premises.
- The soundness of an argument guarantees the truth of its conclusion.



(1) We can expect small changes to occur in the length of our calendar year for an indefinite time to come. (2) This is true for two reasons. (3) First, the rotation of the earth exhibits certain irregularities. (4) And why is this so? (5) The rotation of any body is affected by its distribution of mass, and (6) the earth's mass distribution is continually subject to change. For example, (7) earthquakes alter the location of the tectonic plates. Also, (8) the liquid core of the earth sloshes as the earth turns, and (9) rainfall redistributes water from the oceans. The second reason is that (10) the motion of the tides causes a continual slowing down of earth's rotation.

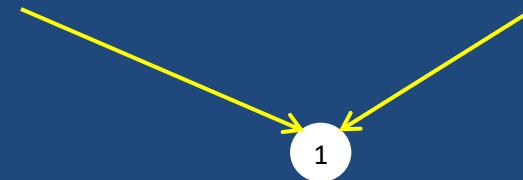
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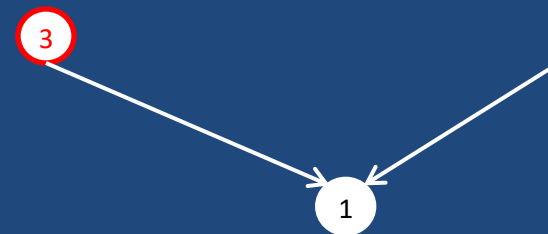
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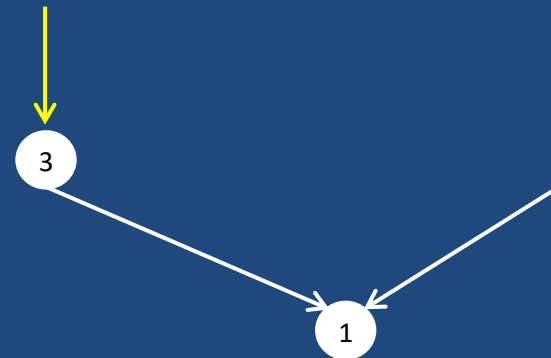
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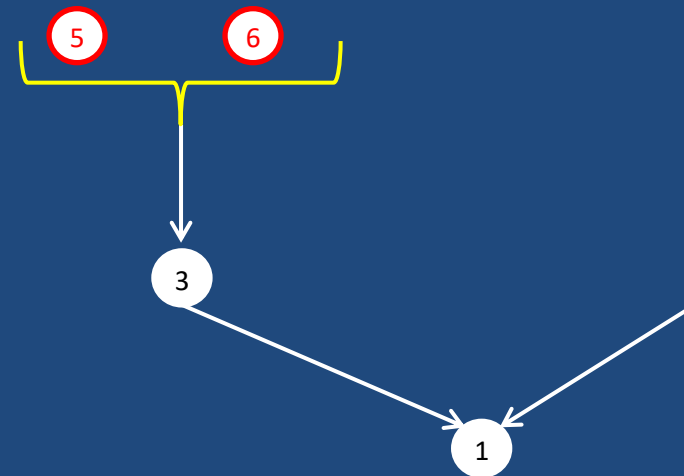
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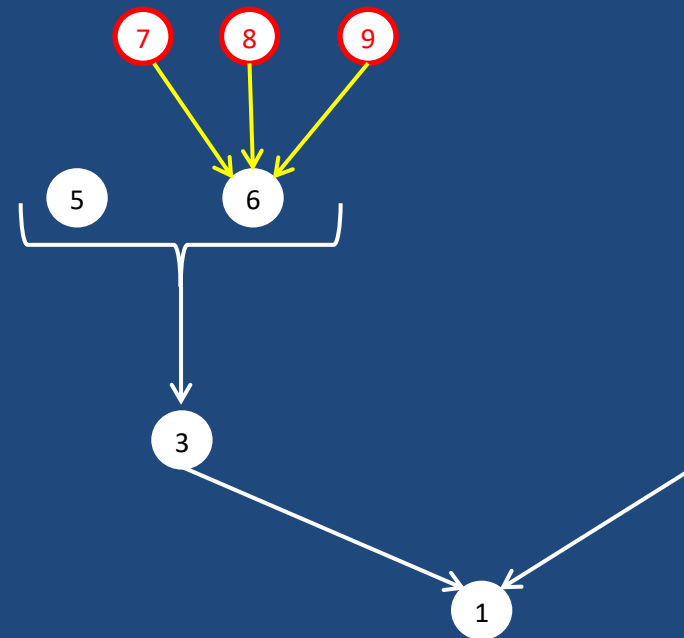
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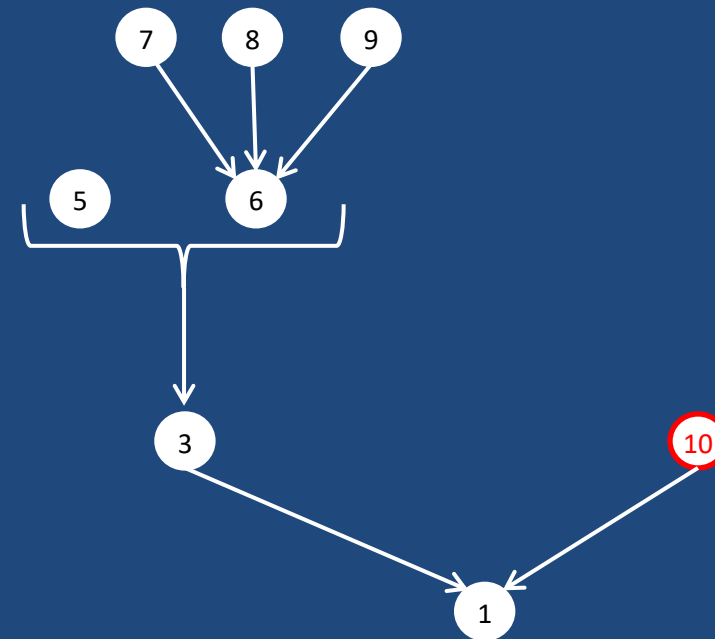


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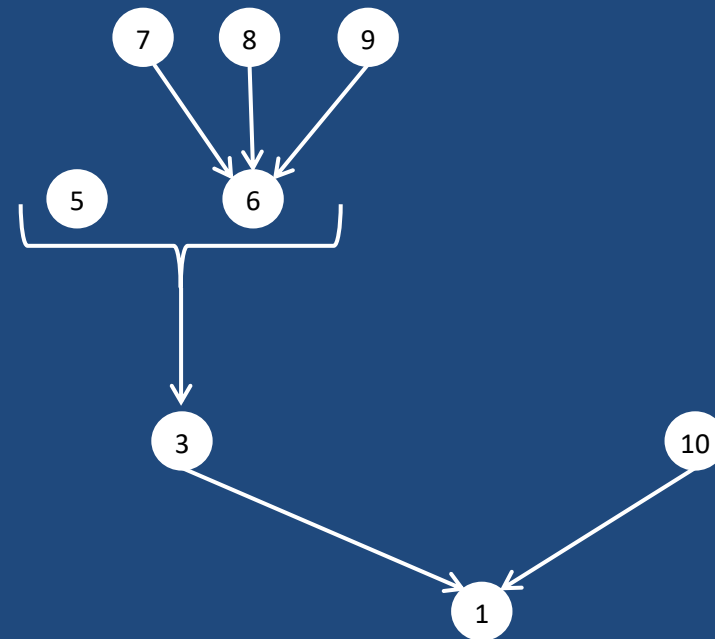
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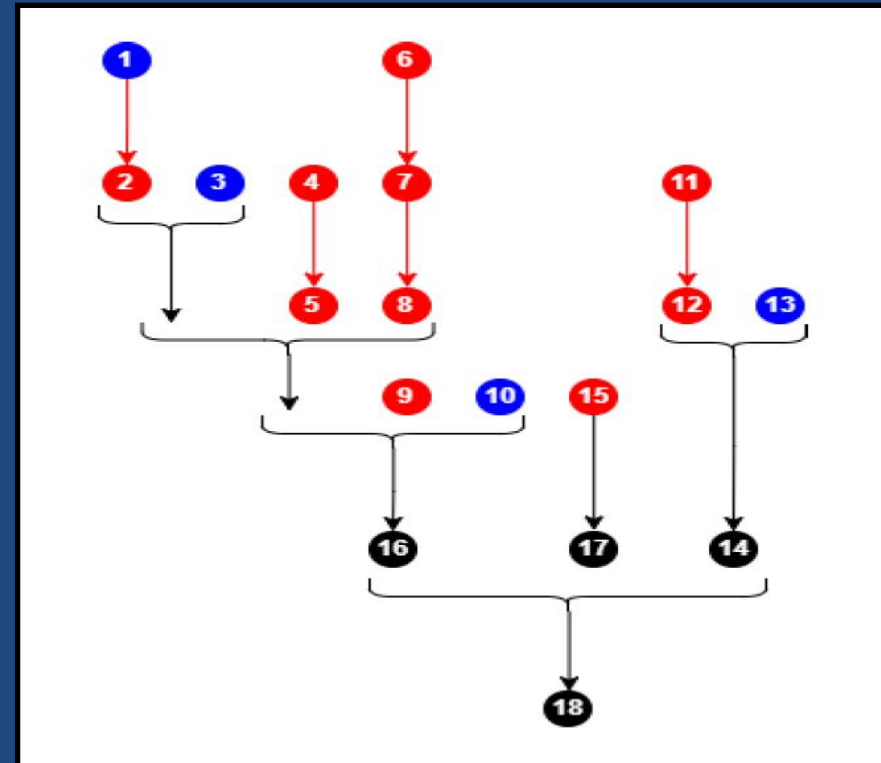
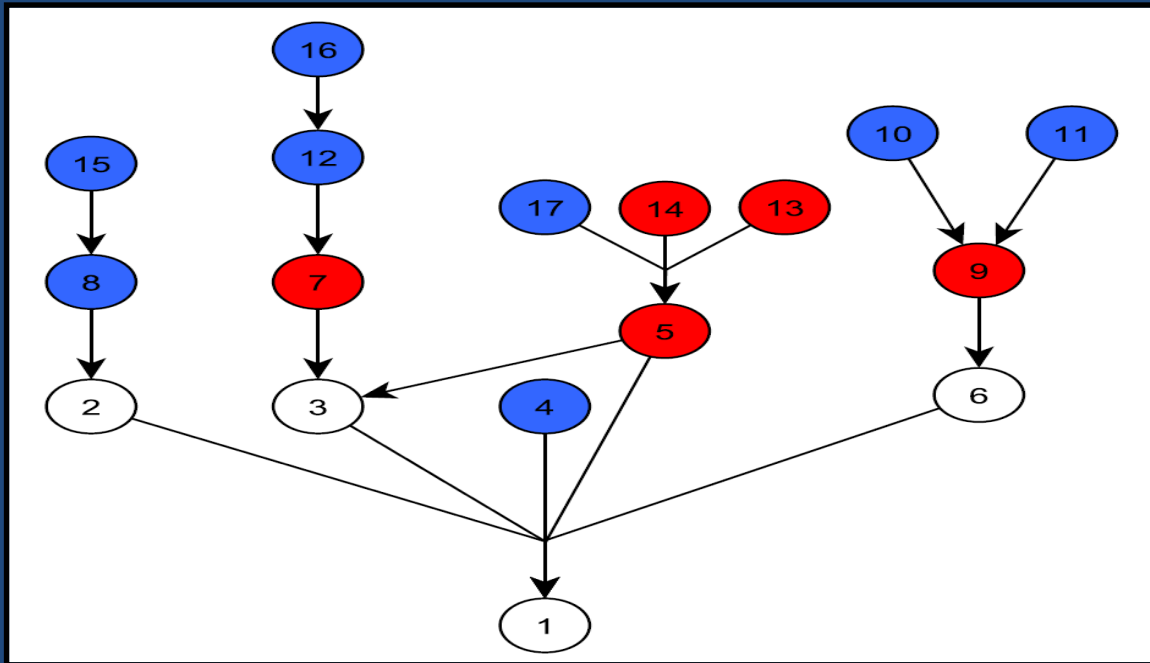
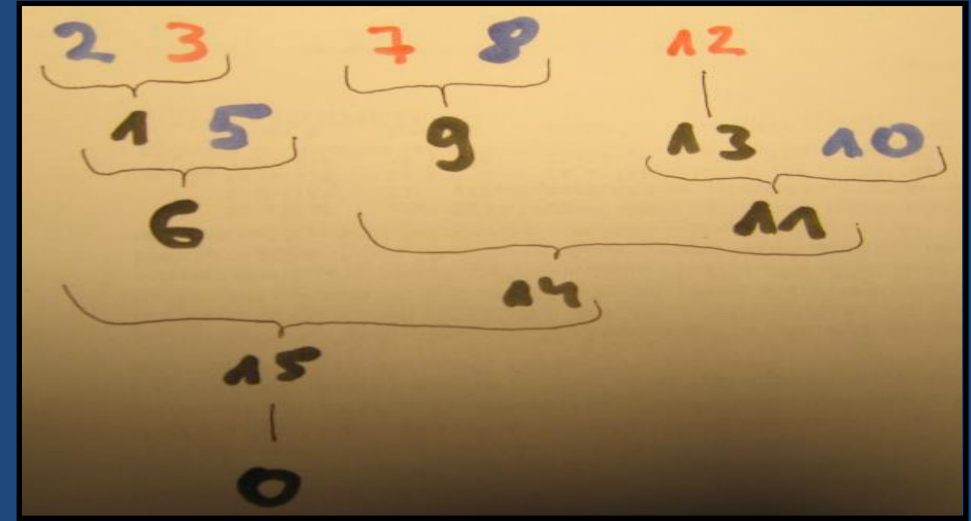
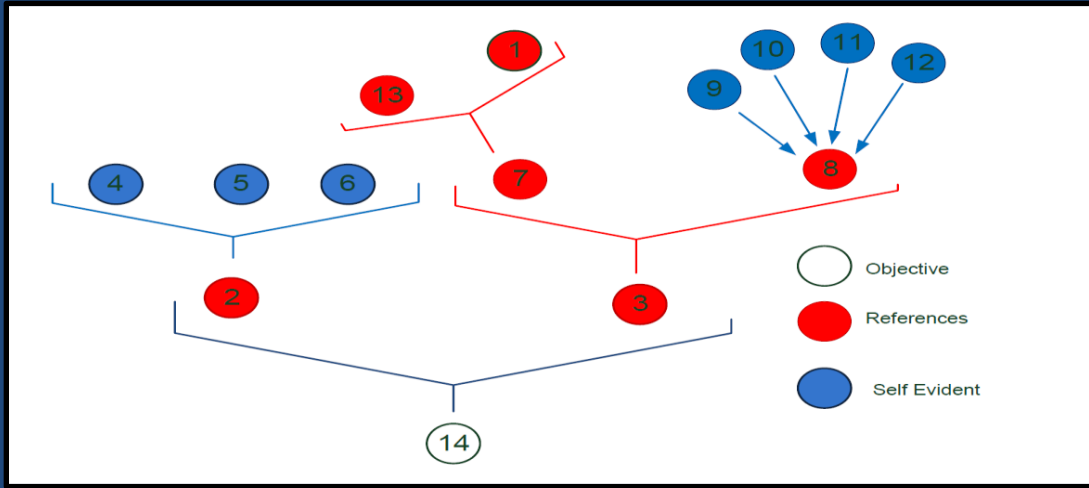


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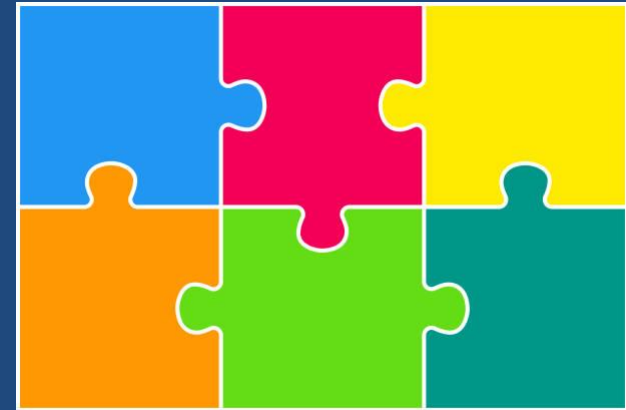
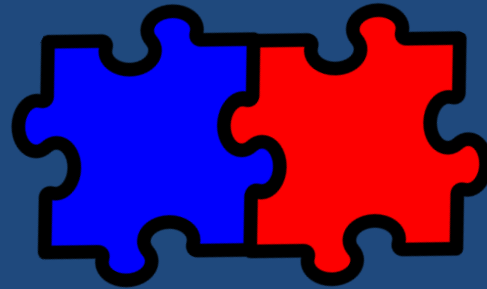
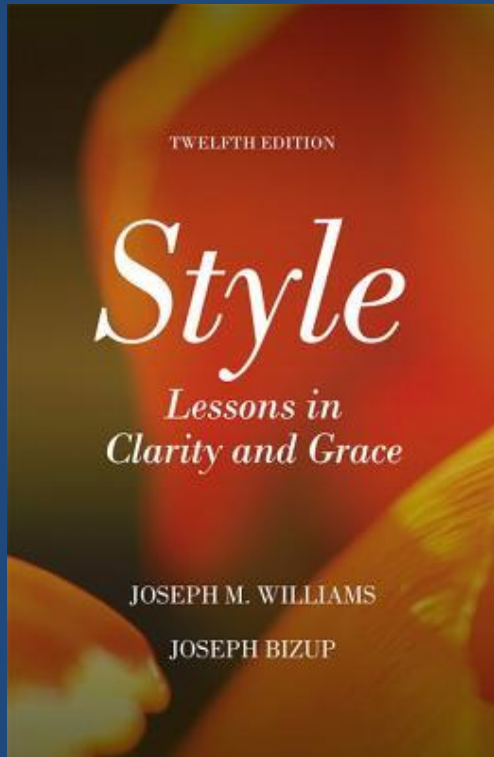
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V

# Style



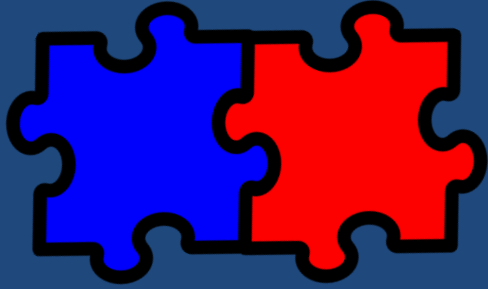
# Style

## Sentences



- Short subject, go fast to the verb
  - ‘... is shown in table X’
  - ‘Table x shows that...’
- Express main actions as verbs
  - ‘There is disagreement among scholars about ...’
  - ‘Scholars disagree about...’

# Style

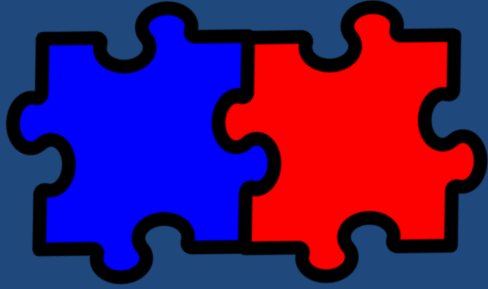


## Cohesion (local flow)

- Go from old information to new information
  - ‘Digital divide produces inequality. Public participation is affected by this inequality’.
  - ‘Digital divide produces inequality. This (inequality) affects public participation’.

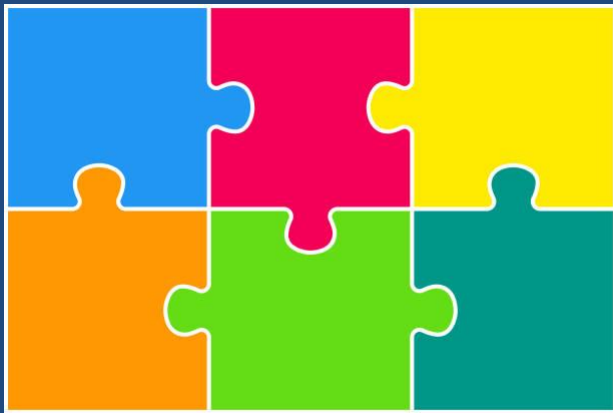


# Style



## Cohesion (local flow)

- Go from old information to new information
  - ‘Digital divide produces inequality. Public participation is affected by this inequality’.
  - ‘Digital divide produces inequality. This (inequality) affects public participation’.



## Coherence (global flow)

- Connect ideas to make the big picture
  - ‘Digital divide produces inequality. Inequality is undesirable in sports. Doing sport improves people’s health. My health is a primary concern of mine’.

# UTT9101 Initiation to Scientific Writing

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