

## 2.1 Intuitive meaning of science

Knowledge

- Essence of (rational) understanding
- Insights, findings
- Certainty, sureness
- **not!** assumptions, opinions, believe, feelings
- but be careful: knowledge about beliefs, irrational knowledge

There are three types of knowledge:

1. **Educational knowledge** forms the personality and extends the own understanding
2. **Performance knowledge** is used to shape/design the world (also called “knowledge of emperors/leaders”)
3. **Salvation knowledge** legitimizes the existence of religion

## 2.2 Creation of Knowledge

Two types of creation of knowledge (also called ‘science’):

- **primary** knowledge is created through
  - random observations
  - systematic exploration and investigation
  - deductive reasoning
- **secondary** knowledge is created through
  - studying and analyzing primary knowledge

Knowledge is transferred through education:

- through institutions (universities, colleges, academies)
- continuously
- mutual exchange between science and education

Points to consider:

- is knowledge complete?

- is knowledge free of contradictions?
- practical knowledge (“to know that”) vs. theoretical knowledge (“to know why”)

Note: According to Platon, “true opinion for which reason is given”. **This is not sufficient** according to today’s science system.

### 2.3 Definition of Science

Academic Discipline  
Research Fields  
Science = Naturwissenschaften  
Wissenschaft

Coming back to “science”:

- essence of human knowledge of a whole epoch
- systematically collected, conserved, taught, and passed on by word of mouth
- all insights about an area of research -> justifications and reasonings (Begründungszusammenhang)
- process of documented exploration of an area of research

Examples for areas of research: *about:*

- \* nature
- \* human mind
- \* society
- \* technology and engineering

- epoche of science (Wissenschaftszeitalter)

Are we living in this epoche?  
- extremely large body of knowledge  
- extremely fast production of knowledge  
- Condensing is difficult  
- Manly of results (and opinion)

### 2.4 Categories of Sciences

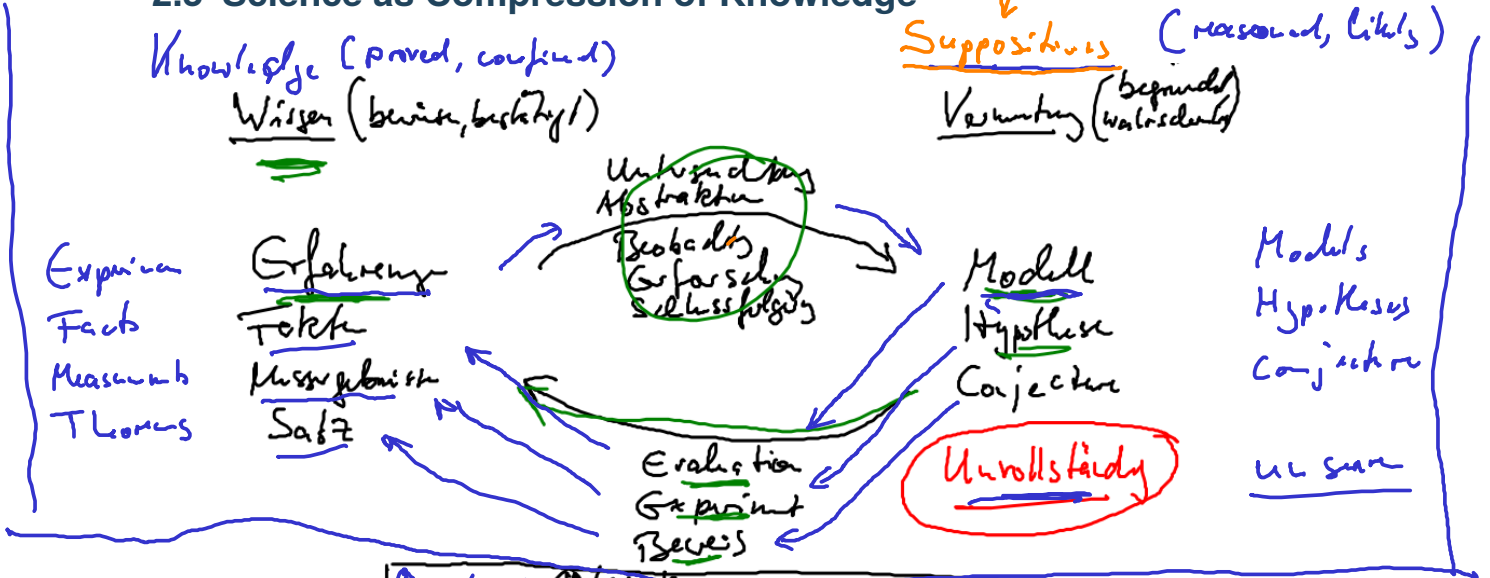
- How *zation*
- theoretical science (foundations, methodologies)
  - practical-applied science or experience-based science
  - empirical science *→*
  - rational science *→*
- *insights für - how knowledge discovered*

Scientific method: based on falsifiable hypotheses  
 Idee

2.5 Science as Compression of Knowledge

Knowledge (proved, confirmed)  
Wissen (bewiesen, bestätigt)

Suppositions (reasonable, likely)  
Vermutung (begegründet, wahrscheinlich)



Compression

Condensing  
 Abstracting

