



Abductive Reasoning for Educational Data

Emanuele Bardone

Senior Researcher in Educational Technology,
Director of Master's Programme in Educational Technology,
Institute of Education, University of Tartu (Estonia)



FuturICT 2.0



FLAG-ERA



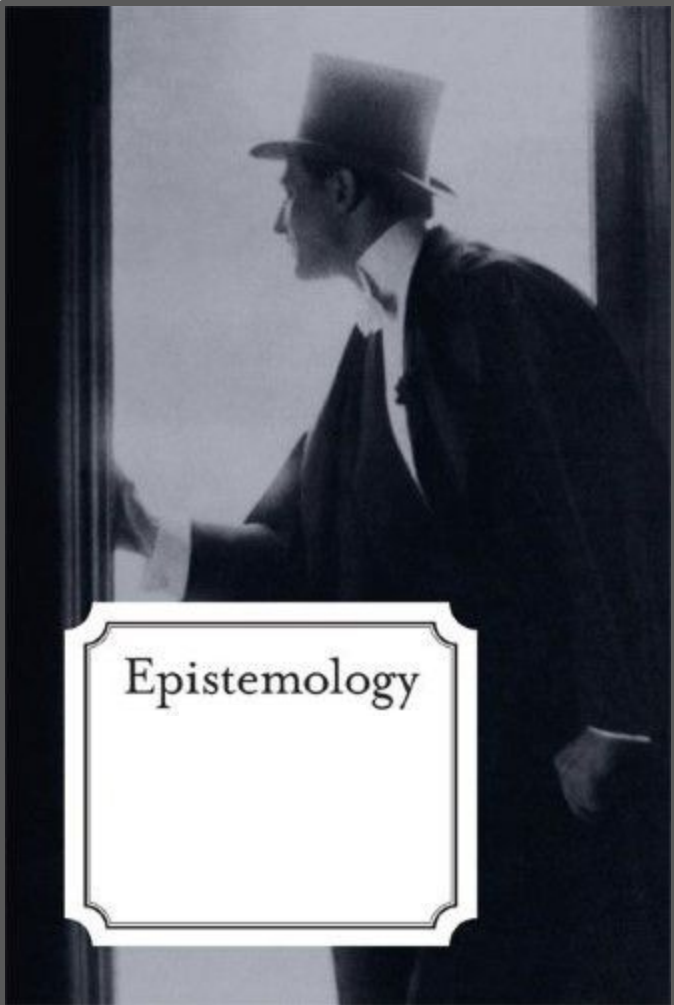


15 March 2019

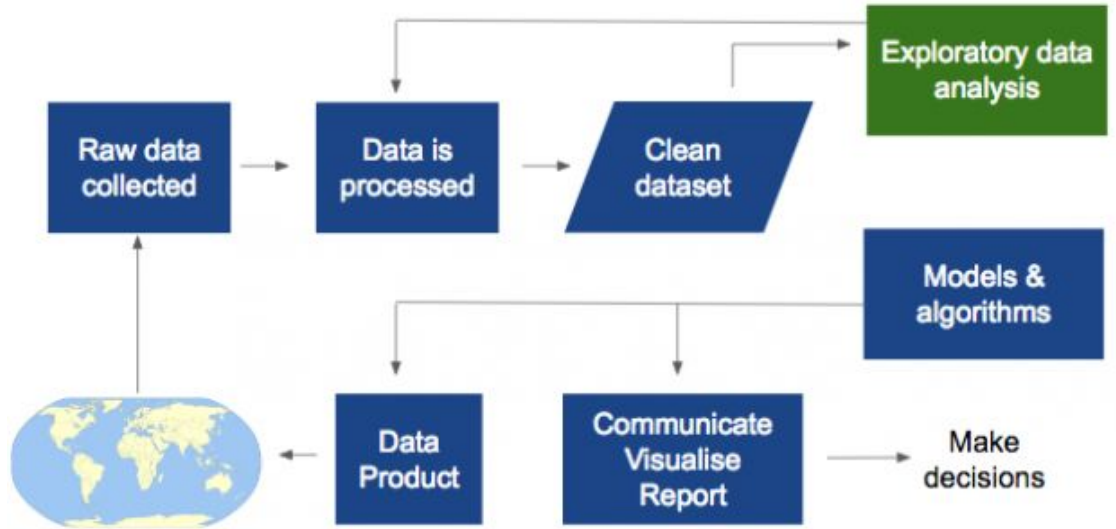


1-year online master's programme in educational technology

bardone@ut.ee



Epistemology



What people see



What I see



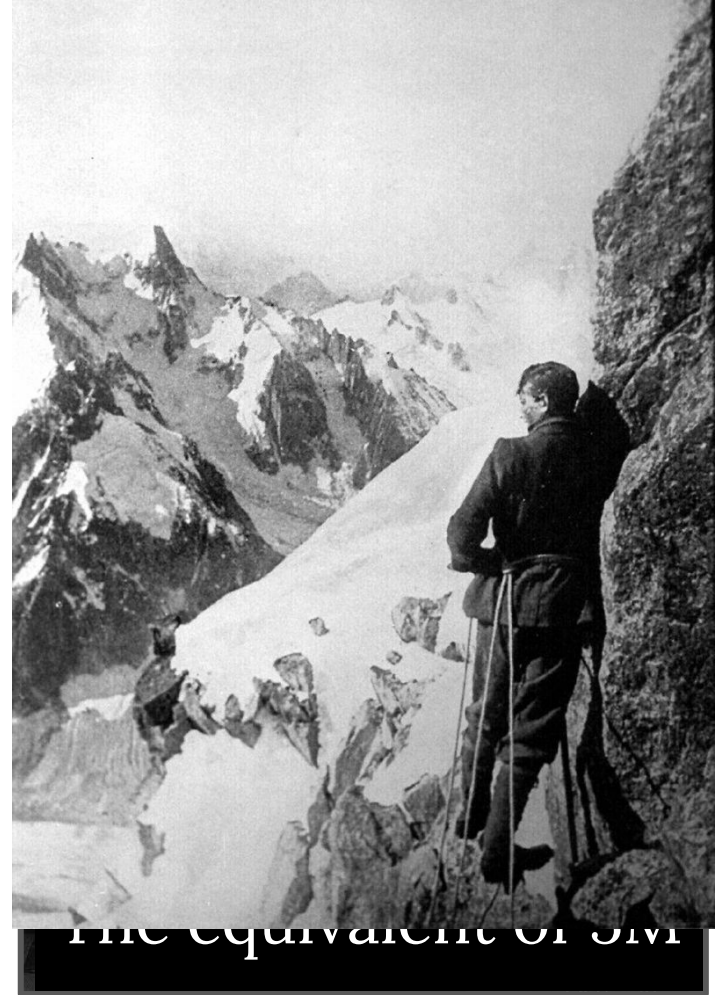


(Big) data

A bit of humor...

“Why do you want to climb Mt. Everest, Sir?” George Mallory was once asked.

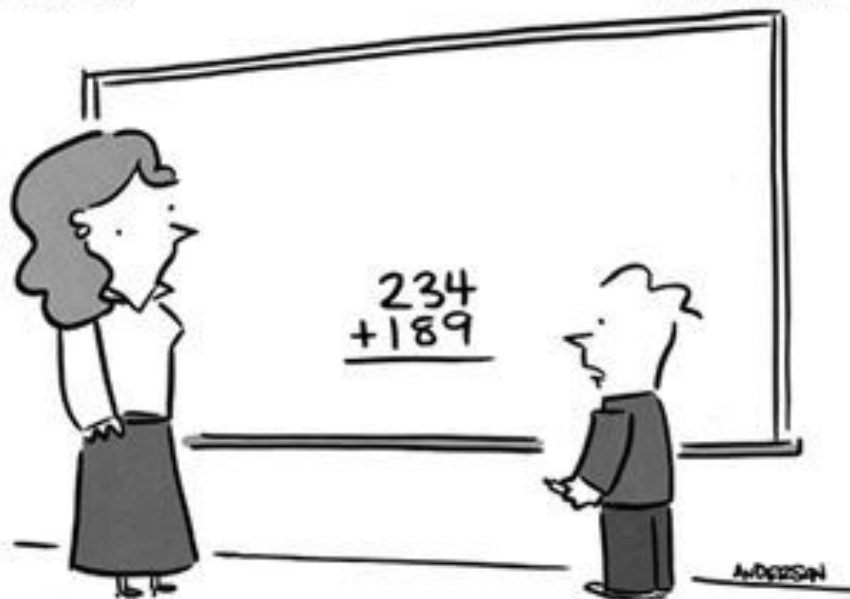
“Because it’s there” he replied.



THE EQUIVALENT OF SM

GET ALL THE
INFORMATION YOU CAN,
WE'LL THINK OF A
USE FOR IT LATER.





"Does this count as big data?"



**“Let’s shrink Big Data into Small Data ...
and hope it magically becomes Great Data.”**

GIVE ME A MOMENT TO FIND
UNBIASED DATA THAT
SUPPORTS CALLING YOU
AND YOUR IDEA STUPID.





"Before I write my name on the board, I'll need to know how you're planning to use that data."

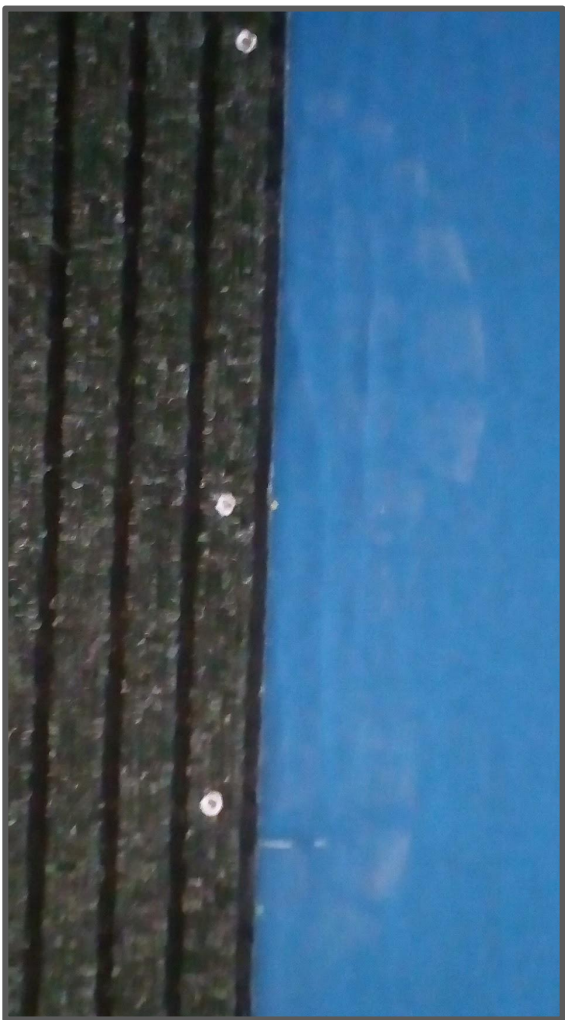


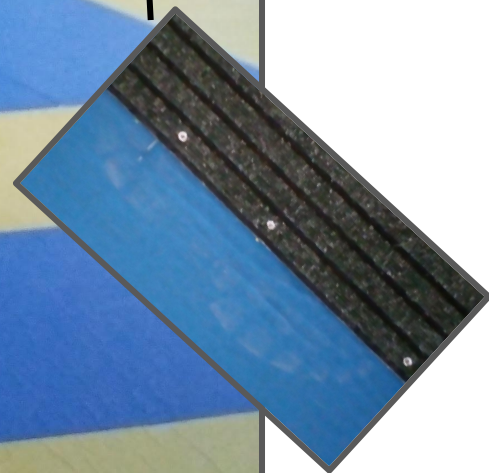
Some (*non-obvious*) questions

What are *educational* data?

What do we do with them?

Why do we need them?







What are *educational* data?

What do we do with them?

Why do we need them?

We (and our artificial
systems) draw inferences

Inferences are
essentially
manipulations





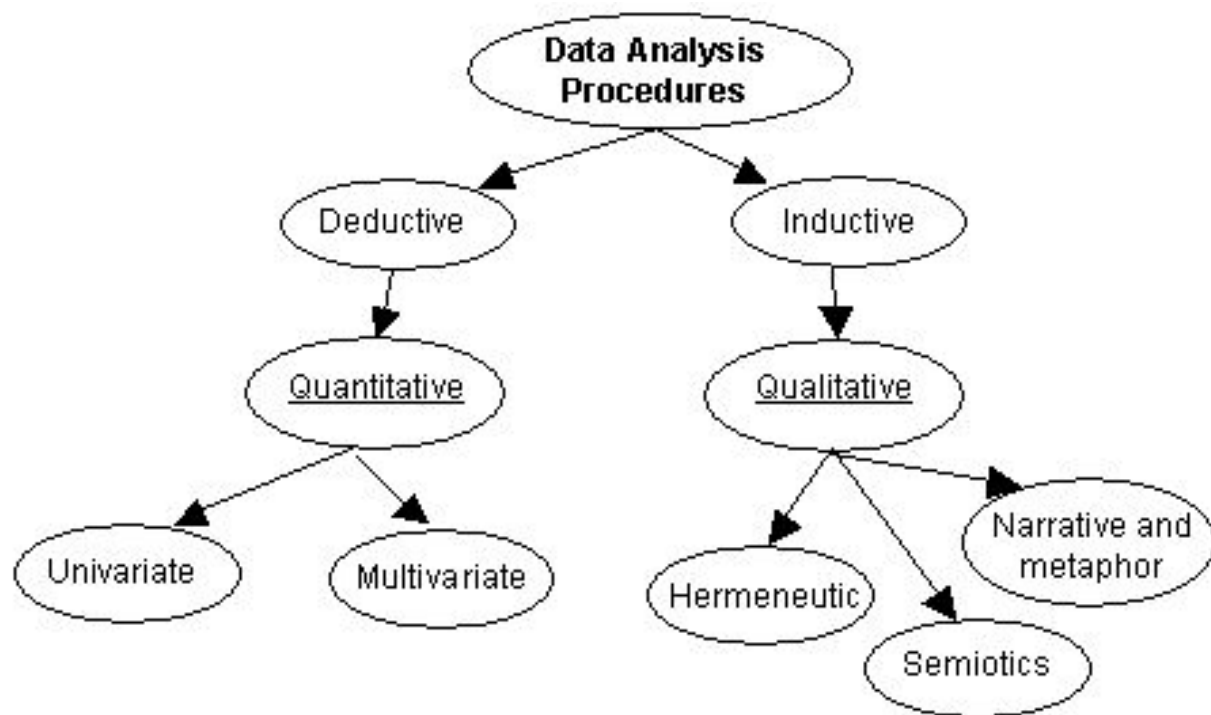
Charles S. Peirce

Types of inferences

Deduction

Induction

Abduction



Deduction

All the beans from this bag are white.

These beans are from this bag.

Thus, these beans are white.



Induction

These beans are white.

These beans are from this bag.

Thus, all the beans from this bag are
white.



Abduction

These beans are white.
All the beans from this bag are white.
Thus, these beans are from this bag.







Some (*non-obvious*) questions

What are *educational* data?

What do we do with them?

Why do we need them?