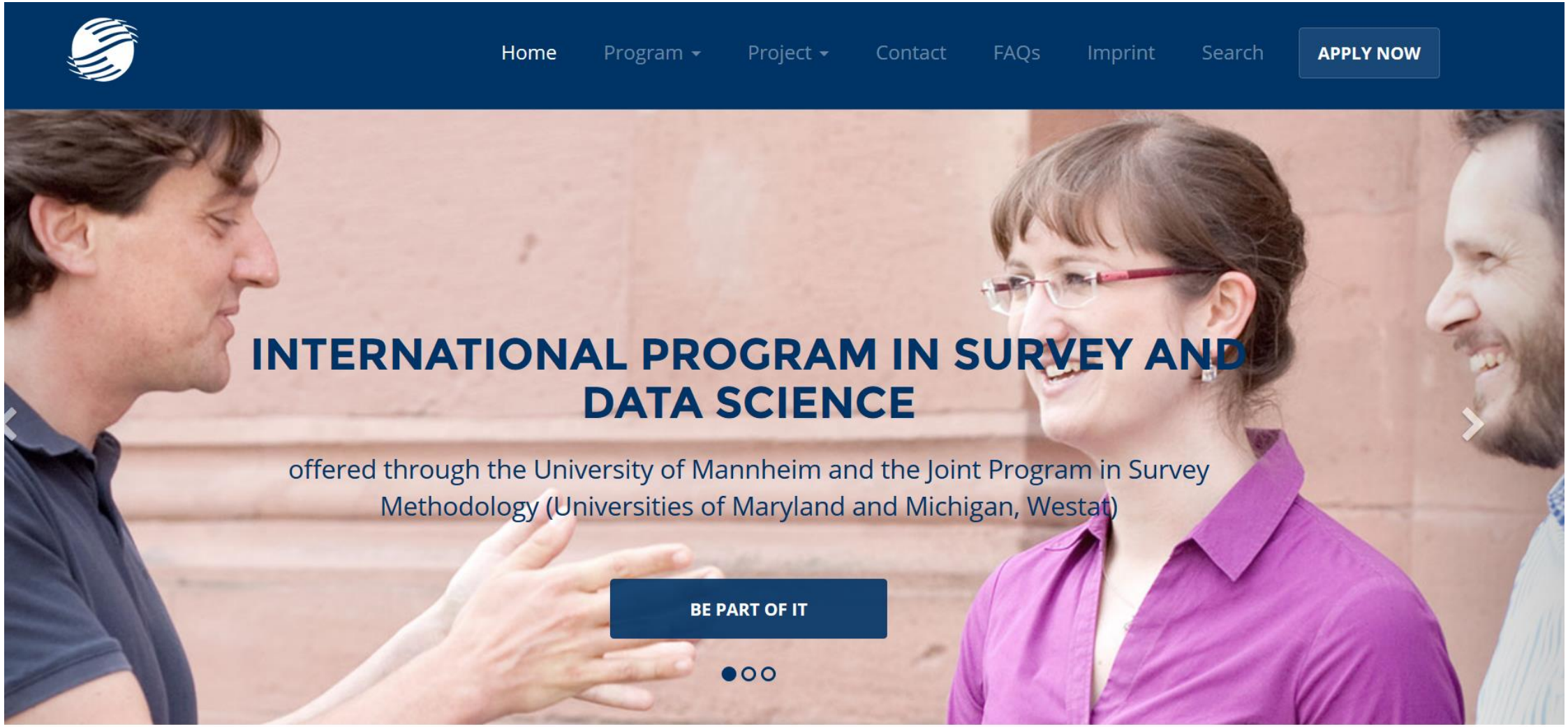
International Program in Survey and Data Science

Frauke Kreuter

JPSM – Uni Mannheim – IAB

ASI 29.6.2017

survey-data-science.net



We are pleased to announce the launch of the International Program in Survey and Data Science (IPSDS). Fundamental changes in the nature of data, their availability, the way in which they are collected, integrated, and disseminated are a big challenge for all those working with designed data from surveys as well as organic data. IPSDS was developed in response to the increasing demand from researchers and practitioners for the appropriate methods and right tools to face these changes. We offer a multidisciplinary curriculum, world-class faculty, and a web-based learning environment that allows you to take courses from anywhere in the world.

Koordination und Finanzierung

JPSM
THE JOINT PROGRAM IN SURVEY METHODOLOGY

IN OMNIBUS VERITAS
UNIVERSITÄT MANNHEIM

SPONSORED BY THE
Federal Ministry of Education and Research

AUFSTIEG DURCH BILDUNG
OFFENE HOCHSCHULEN

Neuer Studiengang -

Warum?

AAPOR

AMERICAN ASSOCIATION FOR PUBLIC OPINION RESEARCH

AAPOR Report on Big Data

AAPOR Big Data Task Force

February 12, 2015

Prepared for AAPOR Council by the Task Force, with Task Force members including:

Lilli Japec, Co-Chair, Statistics Sweden
Frauke Kreuter, Co-Chair, JPSM at the U. of Maryland, U. of Mannheim & IAB
Marcus Berg, Stockholm University
Paul Biemer, RTI International
Paul Decker, Mathematica Policy Research
Cliff Lampe, School of Information at the University of Michigan
Julia Lane, American Institutes for Research
Cathy O'Neil, Johnson Research Labs
Abe Usher, HumanGeo Group

Acknowledgement: We are grateful for comments, feedback and editorial help from Eran Ben-Porath, Jason McMillan, and the AAPOR council members.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

REPORT

INNOVATIONS IN FEDERAL STATISTICS

Combining Data Sources While Protecting Privacy

Chapman & Hall/CRC
Statistics in the Social and Behavioral Sciences Series

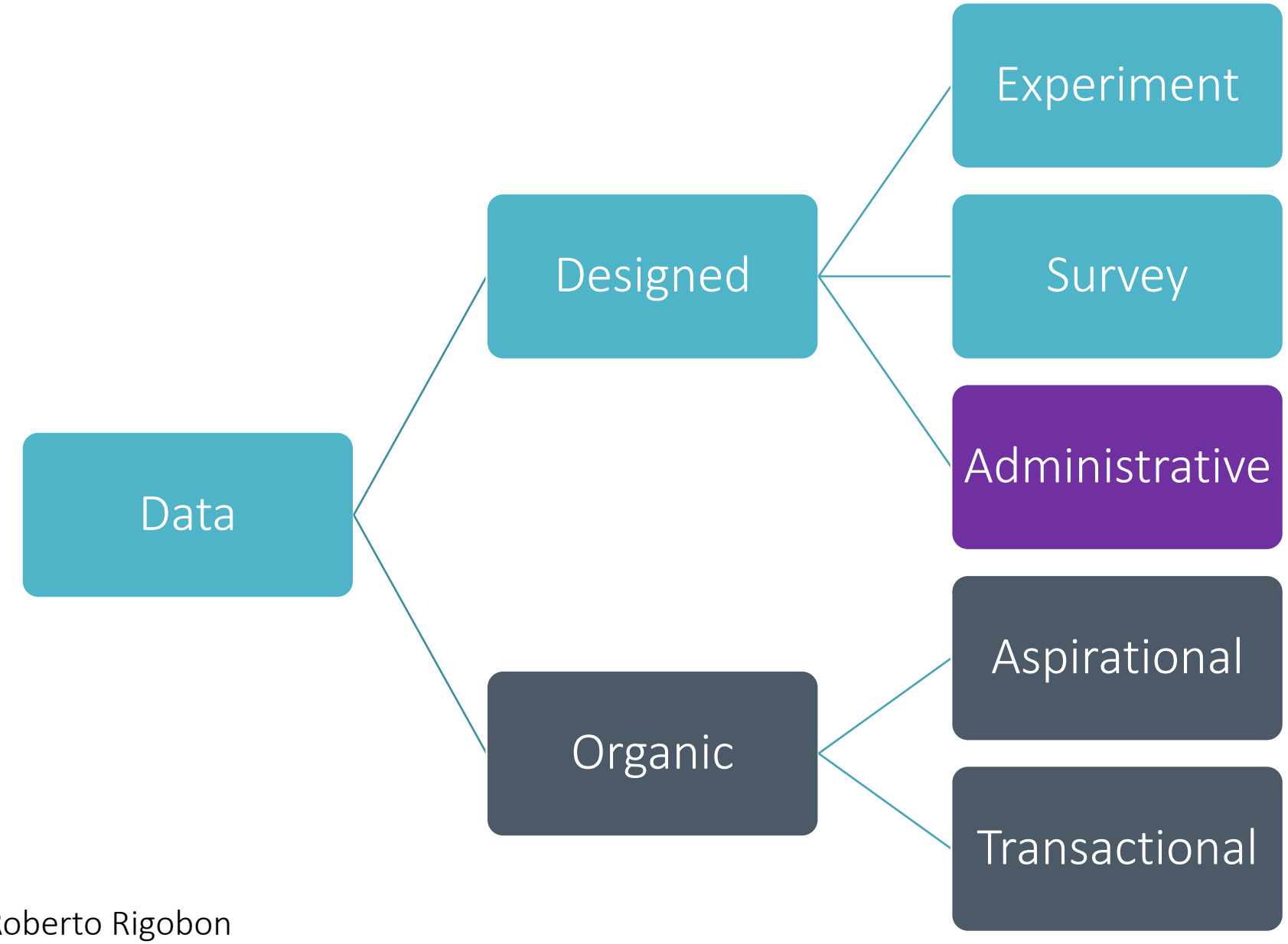
BIG DATA AND SOCIAL SCIENCE

A Practical Guide to Methods and Tools

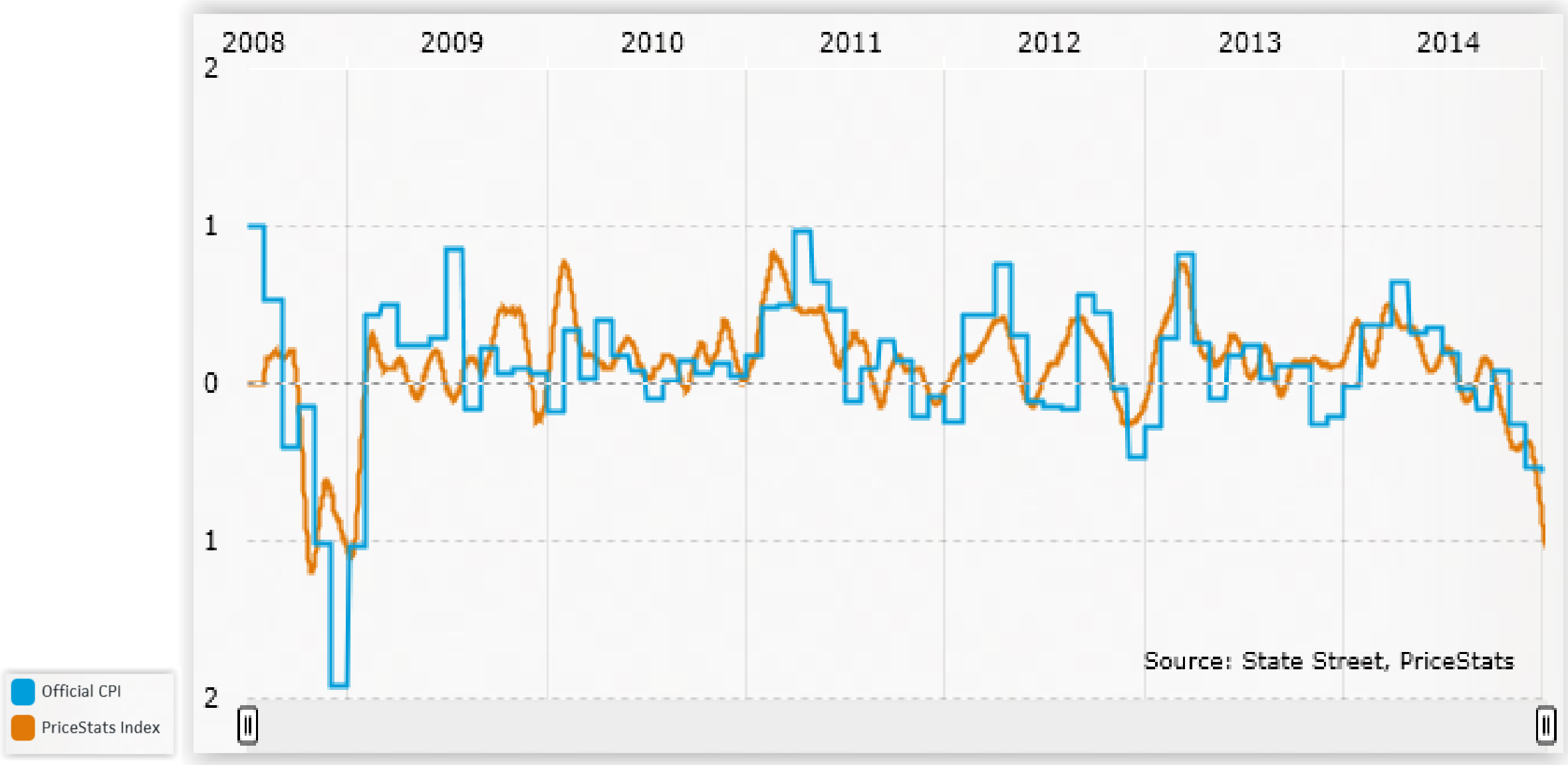
Edited by

Ian Foster, Rayid Ghani, Ron S. Jarmin, Frauke Kreuter, and Julia Lane

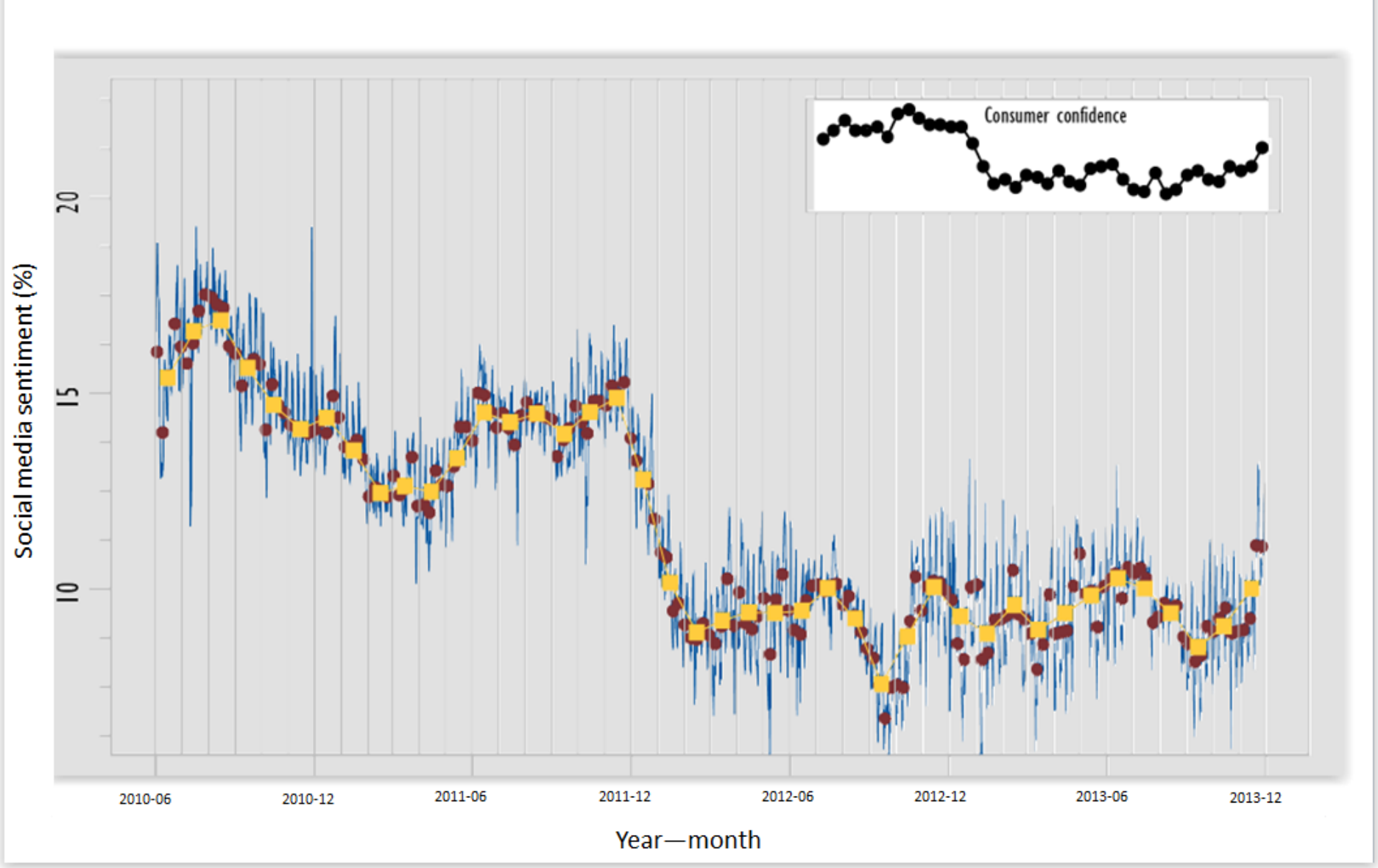
CRC Press
Taylor & Francis Group
A CHAPMAN & HALL BOOK



Source: Roberto Rigobon



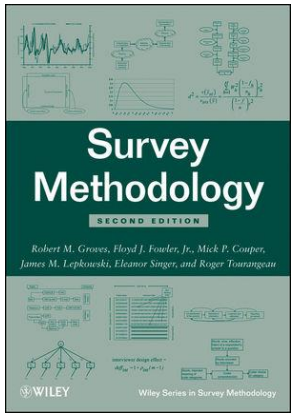
US Aggregated Inflation Series, Monthly Rate, PriceStats Index vs. Official CPI.
Accessed January 18, 2015 from the PriceStats website.

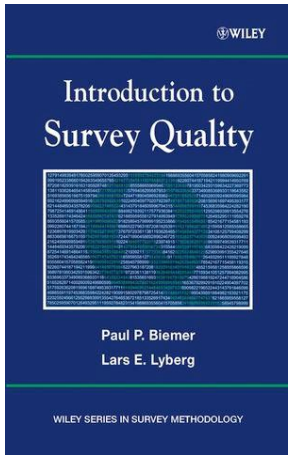


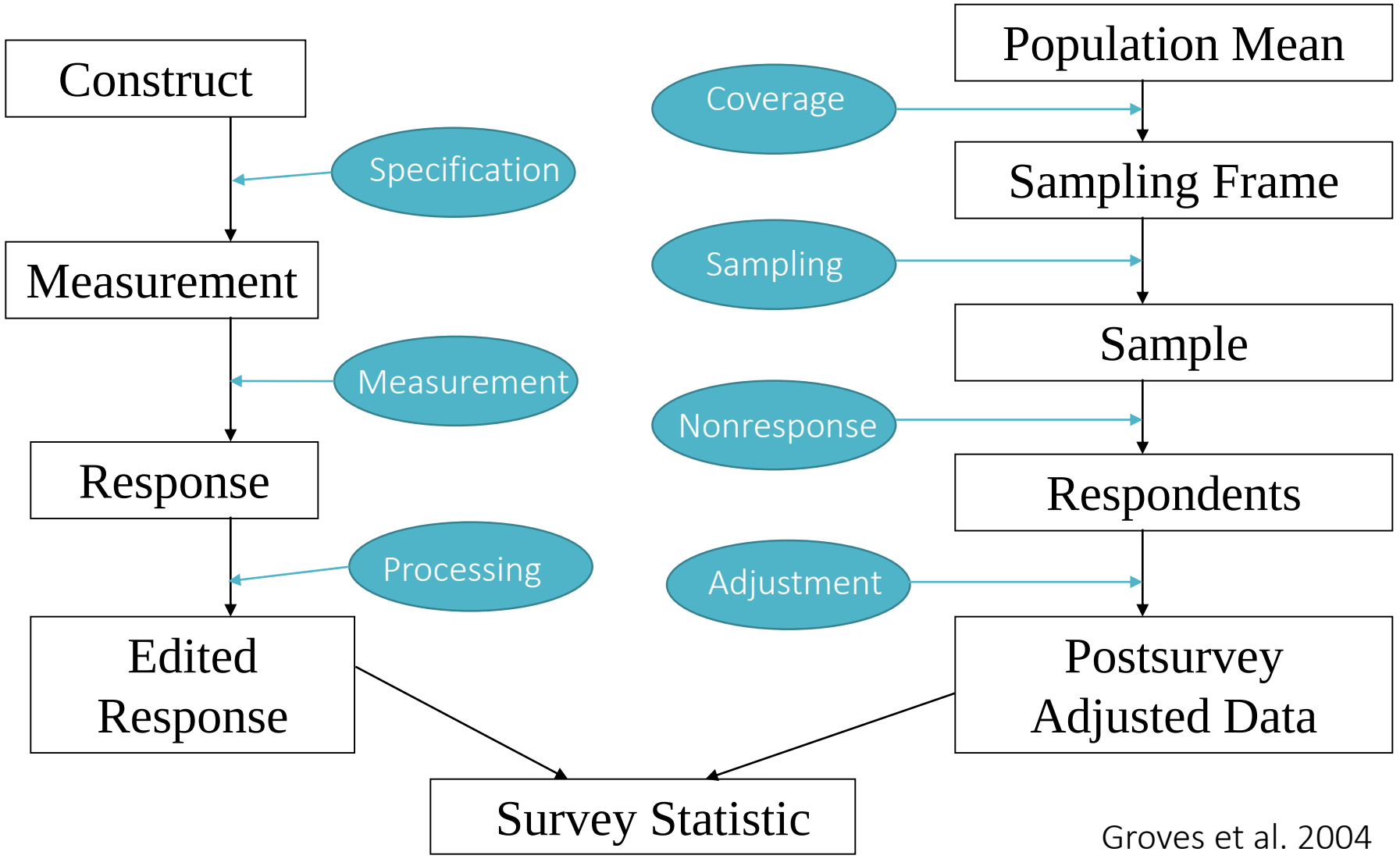
Social media sentiment (daily, weekly and monthly) in the Netherlands, June 2010 - November 2013. Consumer confidence for the same period is shown in the insert (Daas and Puts 2014).

Die Zweifel

Daten generierender Prozess

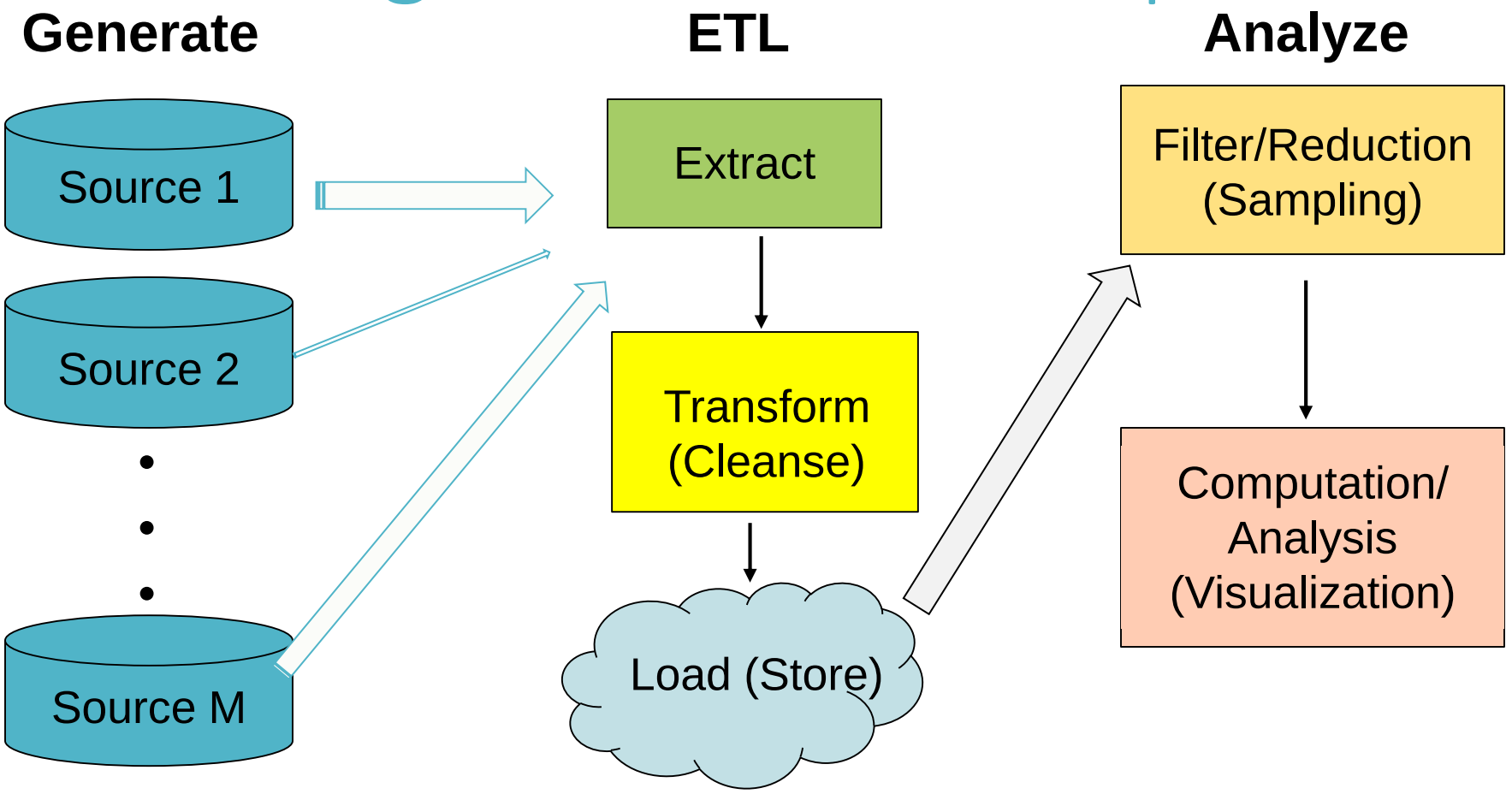




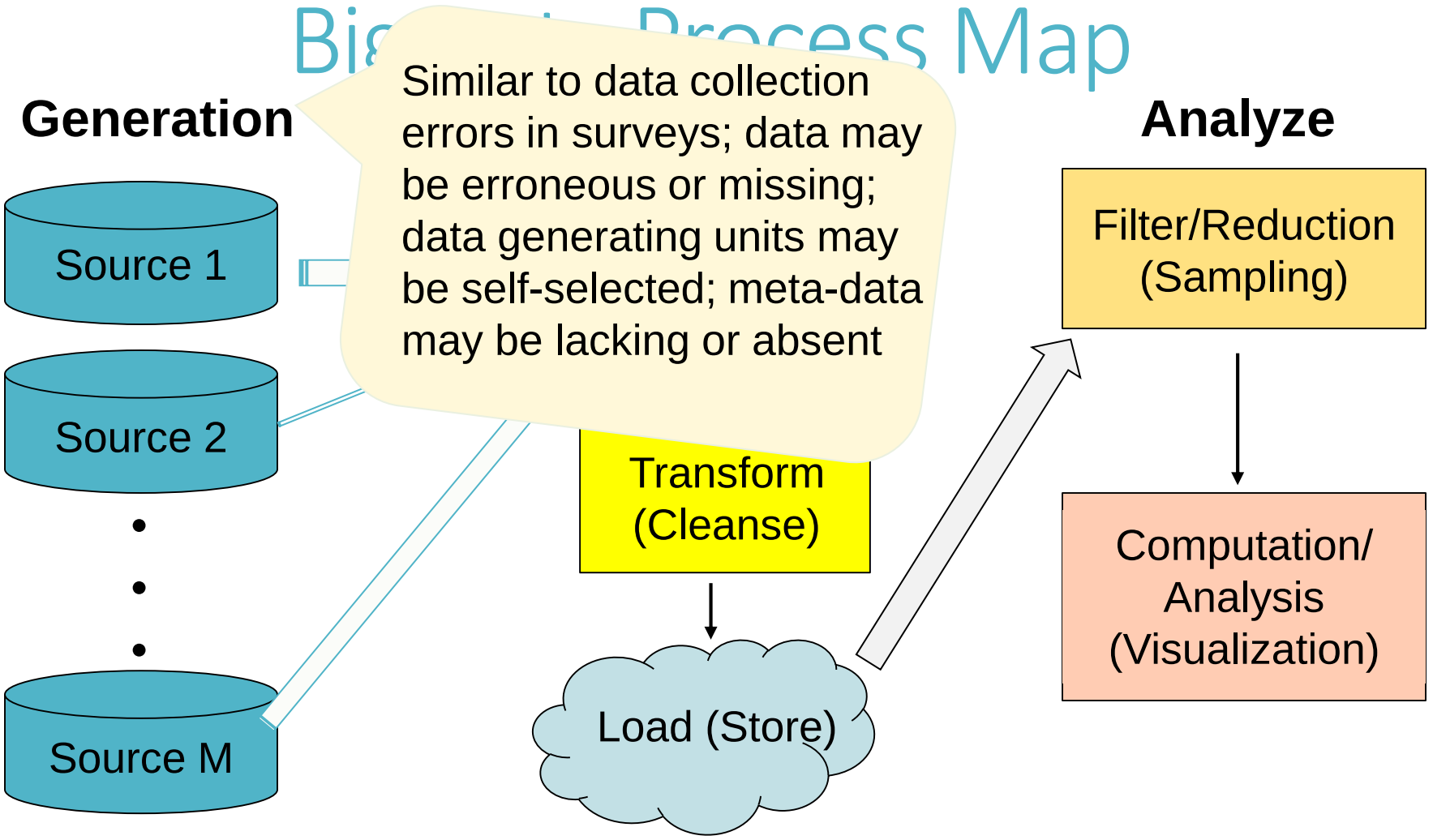


Groves et al. 2004

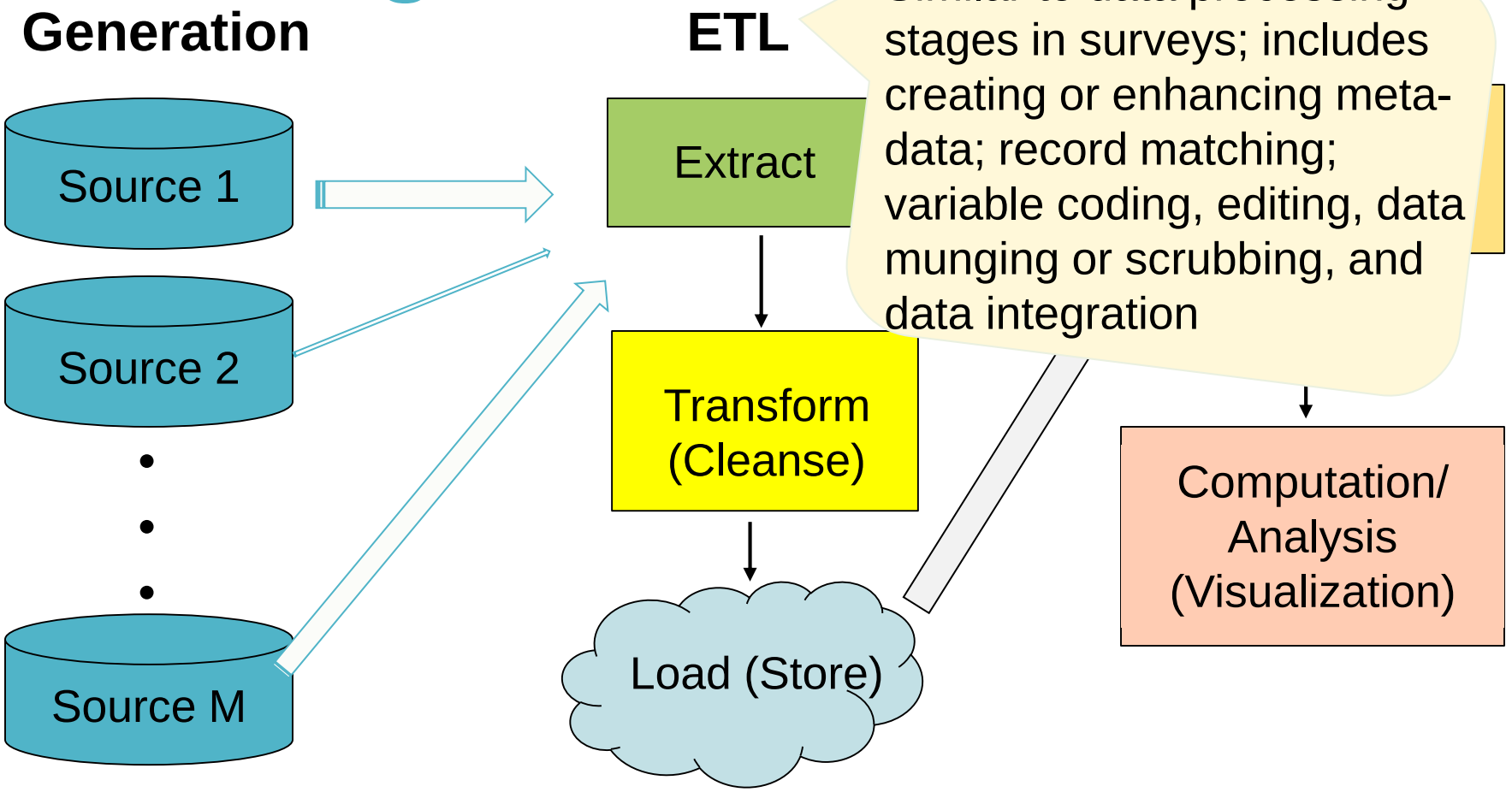
Big Data Process Map



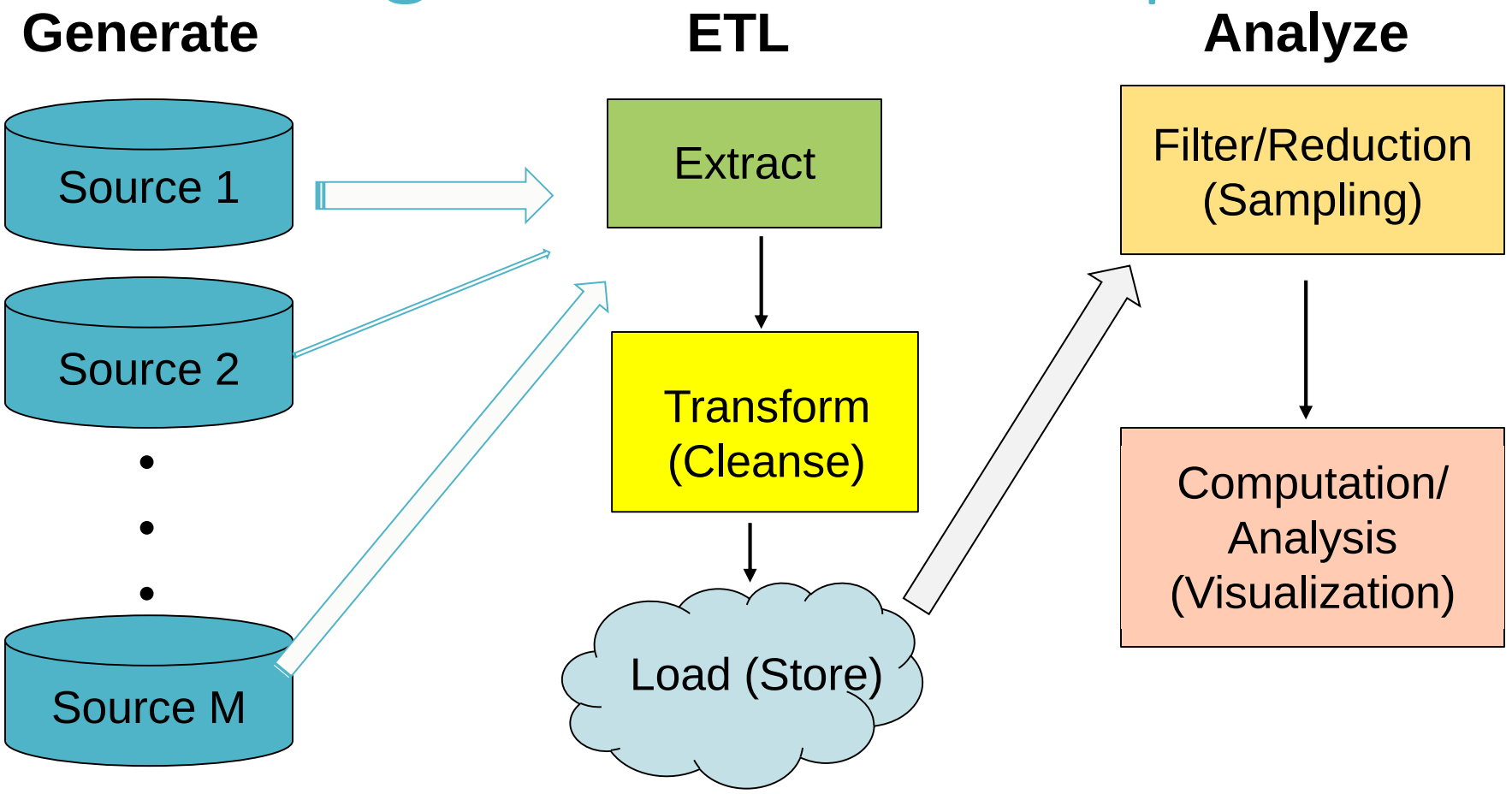
Big Data Process Map



Big Data Proce



Big Data Process Map



Lerninhalte

Modules

Learn how to communicate results and distribute and store your data

Learn a variety of analysis methods suited for different data types

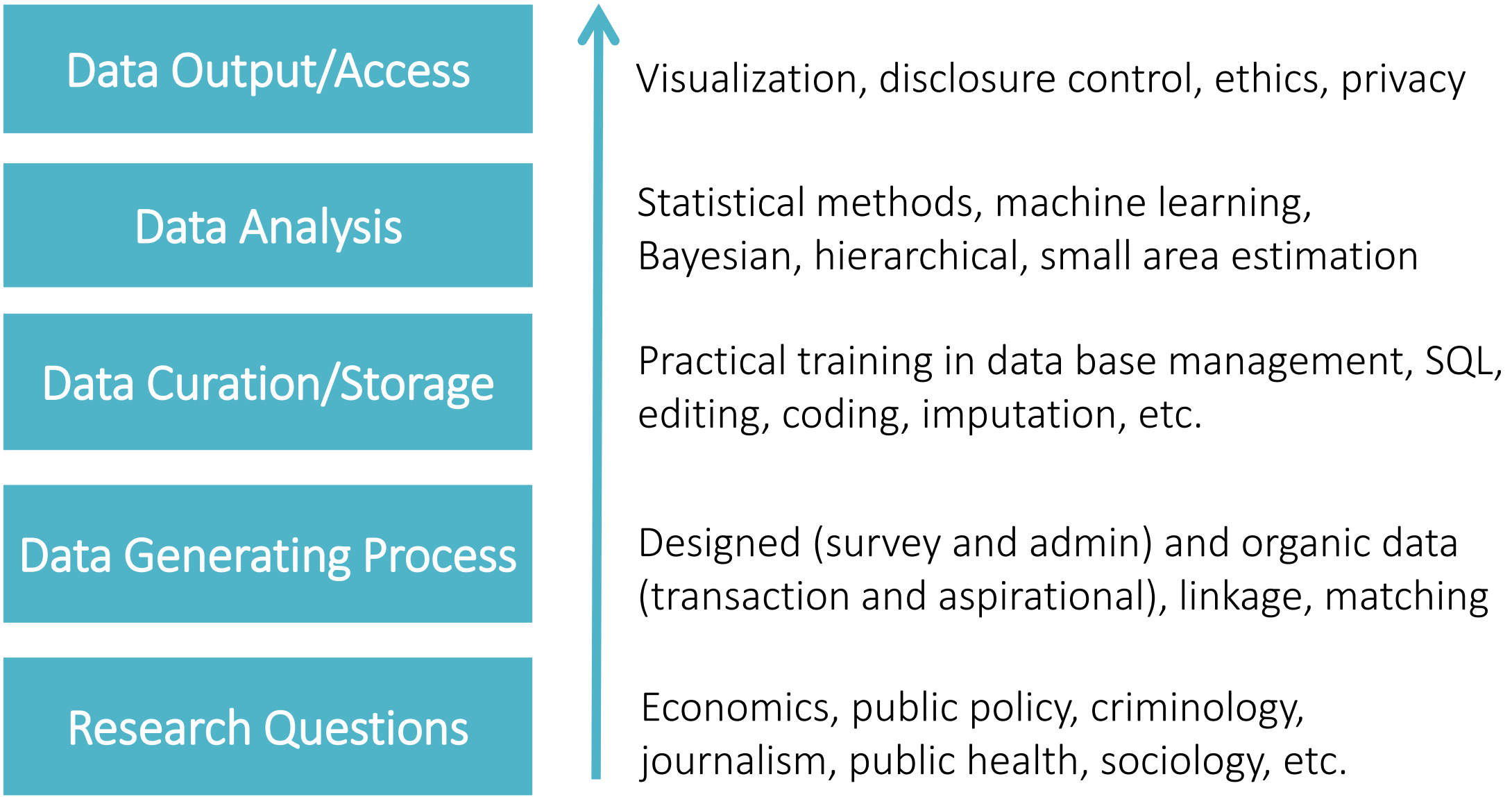
Learn how to curate and manage data

Understand how to collect data yourself, and how data are generated through administrative and processes.

Learn how to formulate your research goal and which data are best suited to achieve this goal.

Source: Usher in Japec et al 2015

Content key words



IPSDS – im Detail

Partner

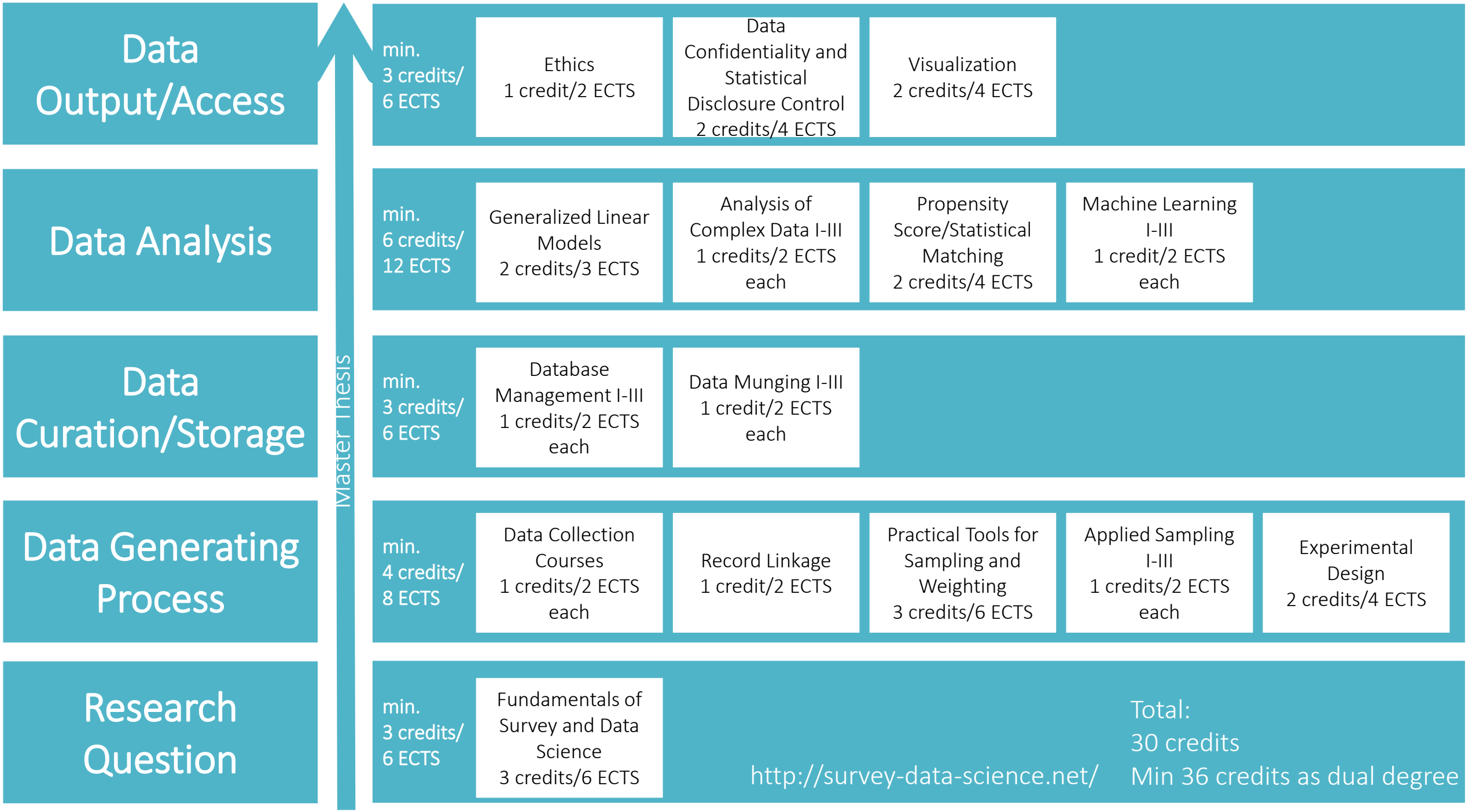
Uni Partner

- University of Maryland
- University of Mannheim

- Catholic University of Santiago de Chile
- Australian National Unversity
- Beijing University
- Ashoka University (expressed interest)
- U. of Capetown (planned)

Andere Partner

- SRO - Michigan
- PEW
- German Record Linkage Center
- GESIS
- Bureau of Labour Statistics
- U.S. Census Bureau
- Statistics Netherlands


Data Output/Access
min. 3 credits/ 6 ECTS
Ethics 1 credit/2 ECTS
Data Confidentiality and Statistical Disclosure Control 2 credits/4 ECTS
Visualization 2 credits/4 ECTS
Data Analysis
min. 6 credits/ 12 ECTS
Generalized Linear Models 2 credits/3 ECTS
Analysis of Complex Data I-III 1 credits/2 ECTS each
Propensity Score/Statistical Matching 2 credits/4 ECTS
Machine Learning I-III 1 credit/2 ECTS each
Data Curation/Storage
min. 3 credits/ 6 ECTS
Database Management I-III 1 credits/2 ECTS each
Data Munging I-III 1 credit/2 ECTS each
Data Generating Process
min. 4 credits/ 8 ECTS
Data Collection Courses 1 credits/2 ECTS each
Record Linkage 1 credit/2 ECTS
Practical Tools for Sampling and Weighting 3 credits/6 ECTS
Applied Sampling I-III 1 credits/2 ECTS each
Experimental Design 2 credits/4 ECTS
Research Question
min. 3 credits/ 6 ECTS
Fundamentals of Survey and Data Science 3 credits/6 ECTS
Master Thesis
http://survey-data-science.net/
Total:
30 credits
Min 36 credits as dual degree

Format

Jede Woche Videos (pre-recorded)

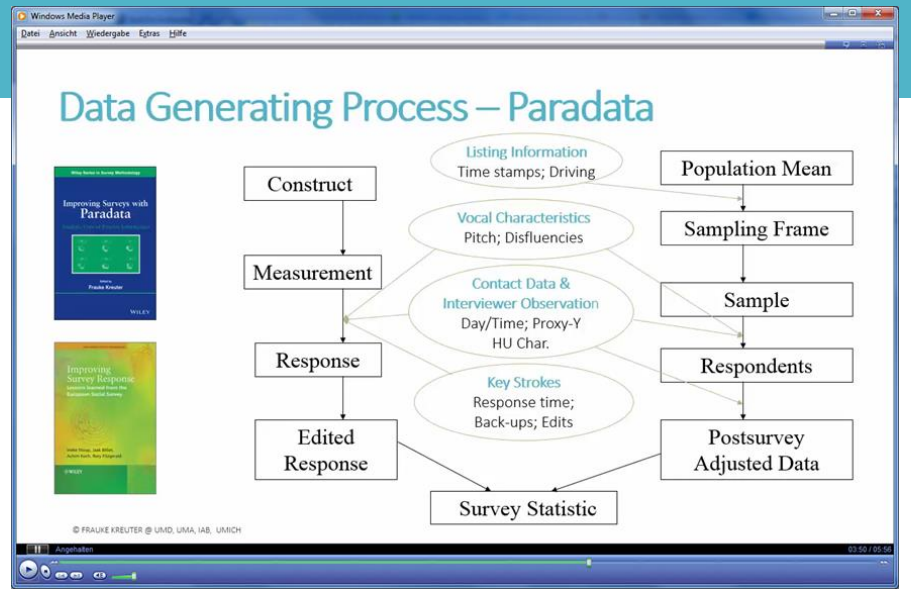
Etwa 1.5-2h pro Woche

In 5-10 minütigen Portionen

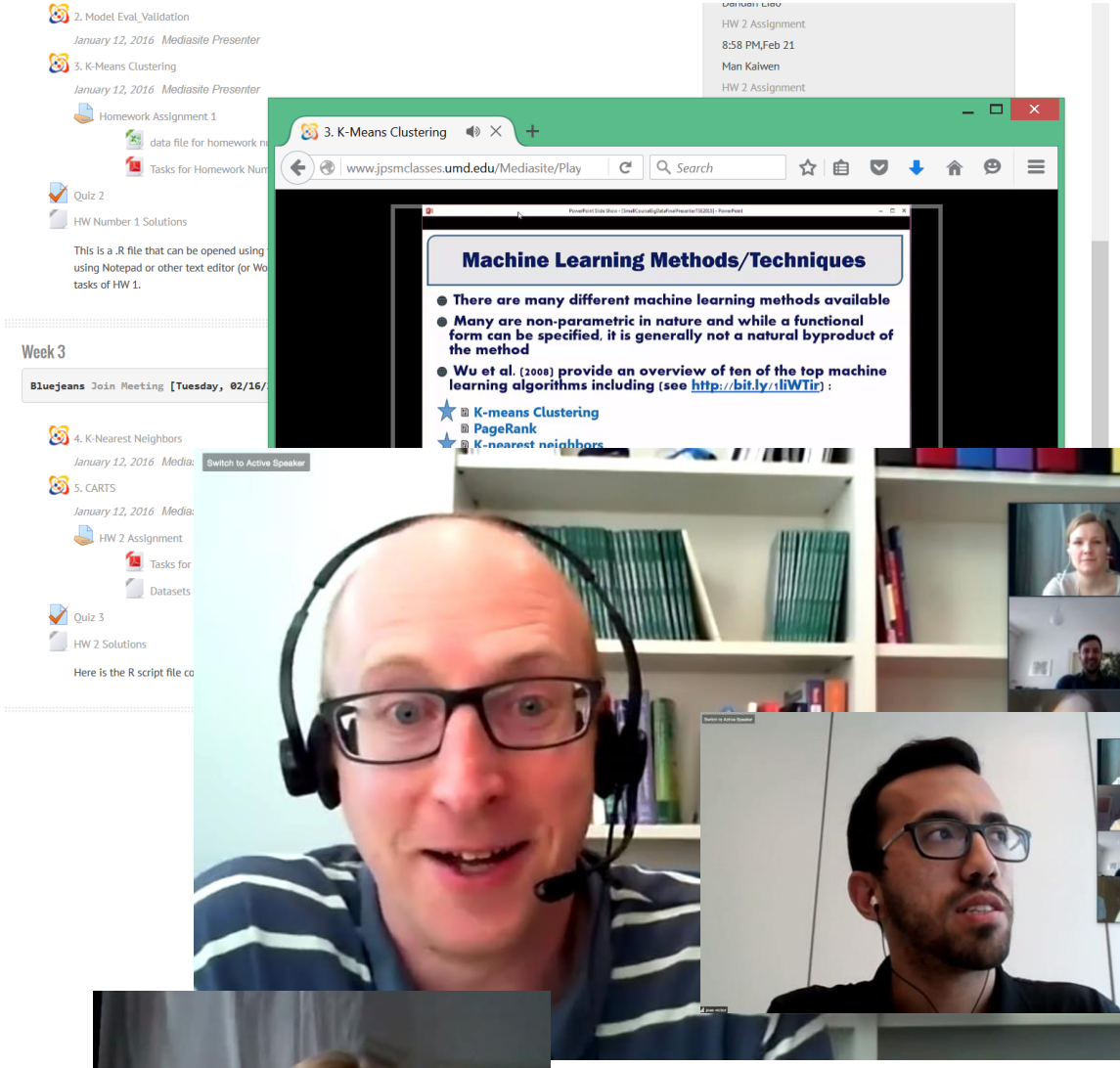
Eigene Zeiteinteilung

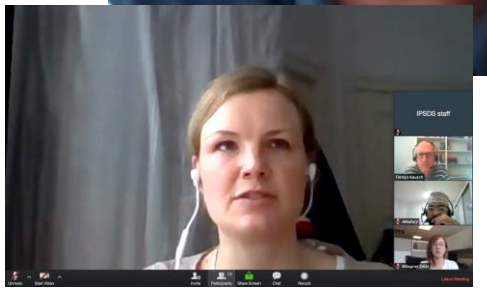
Wöchentliche Tests und Aufgaben

Wöchentliche Diskussionsrunde



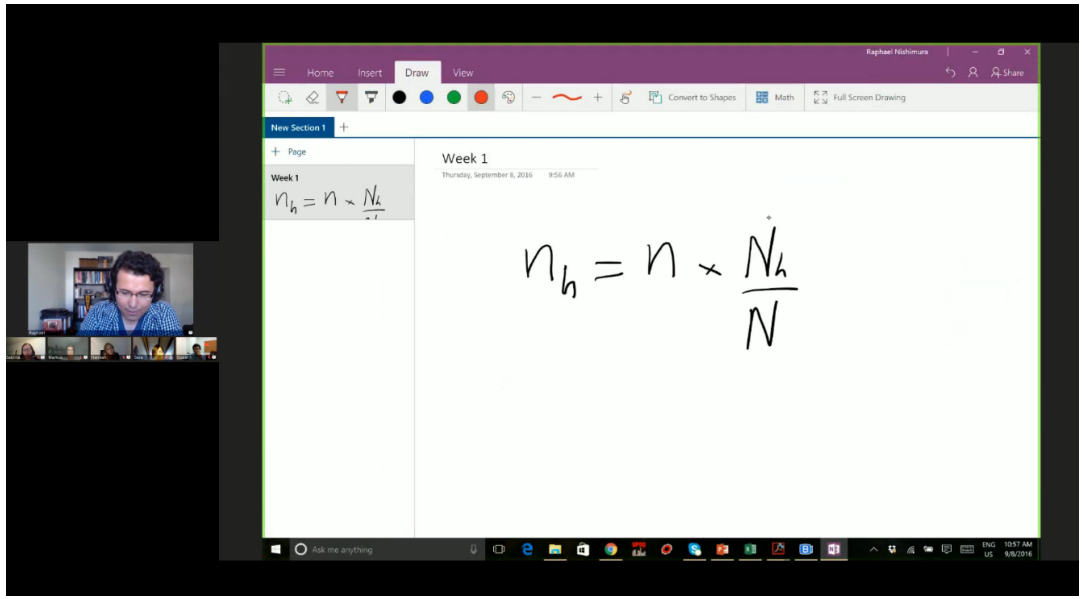
IPSDS Struktur





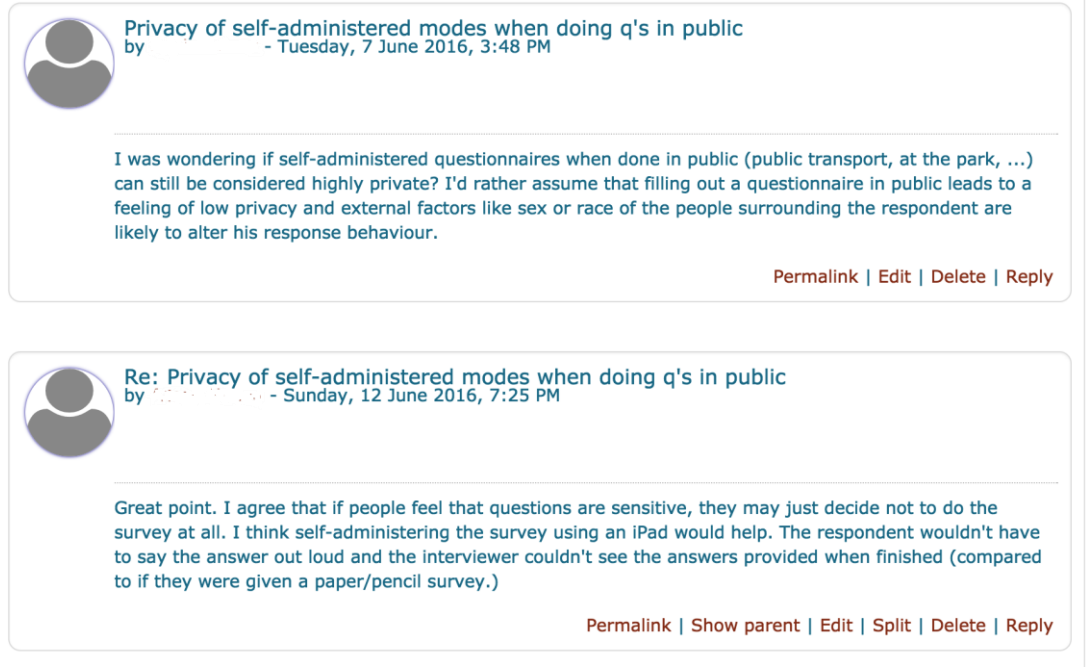
BMBF - Studie 1: Art der Interaktion

Synchrone Interaktion



- verhindert soziale Isolation
- Fragen werden sofort beantwortet

Asynchrone Interaktion



- Flexibilität
- Mehr Zeit zum Nachdenken/Reflexion
  (Hrastinski & Keller, 2007, p. 66)

BMBF- Studie 2: Video-Lehrinhalte

Video-Vorlesungen

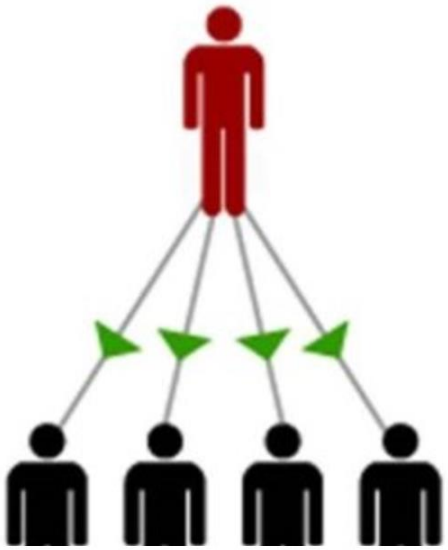
+ Experten-Interviews

- Experten-Interviews betonen Nutzen der Lehrinhalte

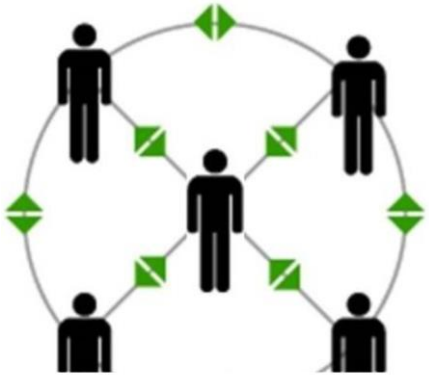
  (Renninger & List, 2012)
- Kurs: **12 Wochen** ab Feb. 2016
- Within-subject Design: 16 ProbandInnen
- Experten-Interviews in Wochen: **3, 4, 5, 8**

BMBF - Studie 3: Flexibilität der Abgabefristen für Hausaufgaben

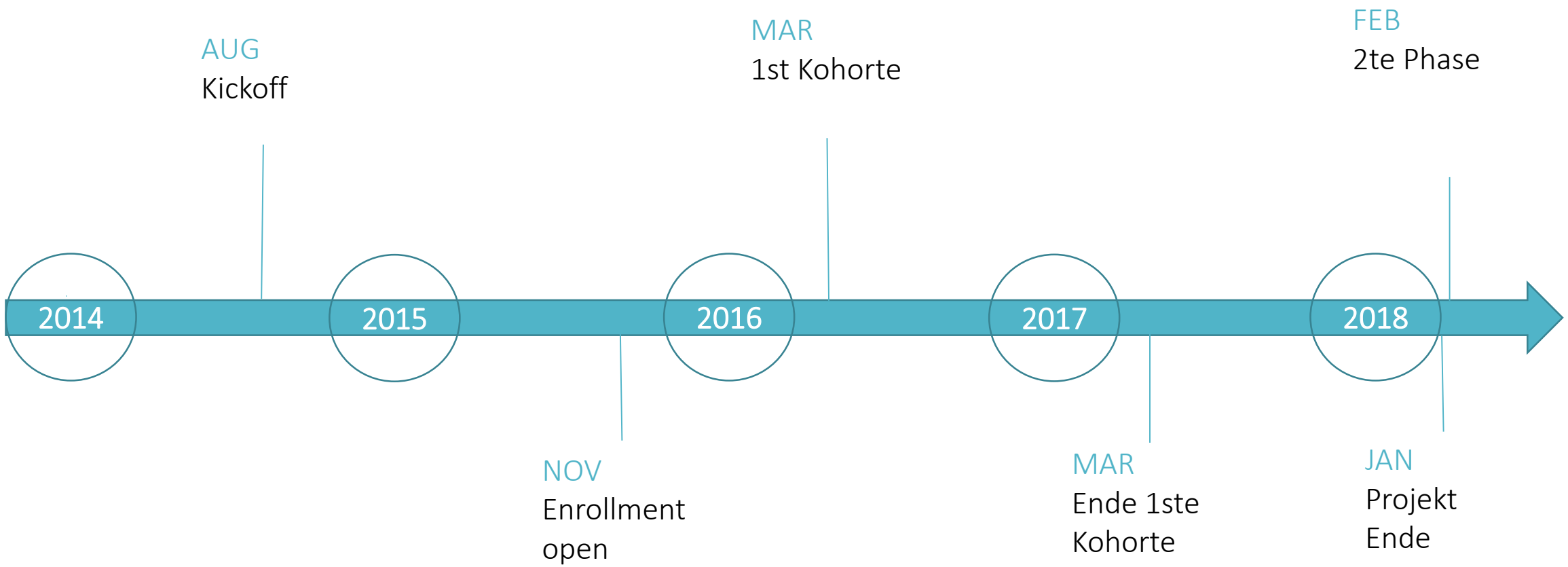
Instructor-Paced Format:
11 Wochen
Friste für alle Hausaufgaben



Self-Paced Format:
8 Wochen, Keine Fristen (alle Hausaufgaben mussten bis Ende des Kurses abgegeben werde)

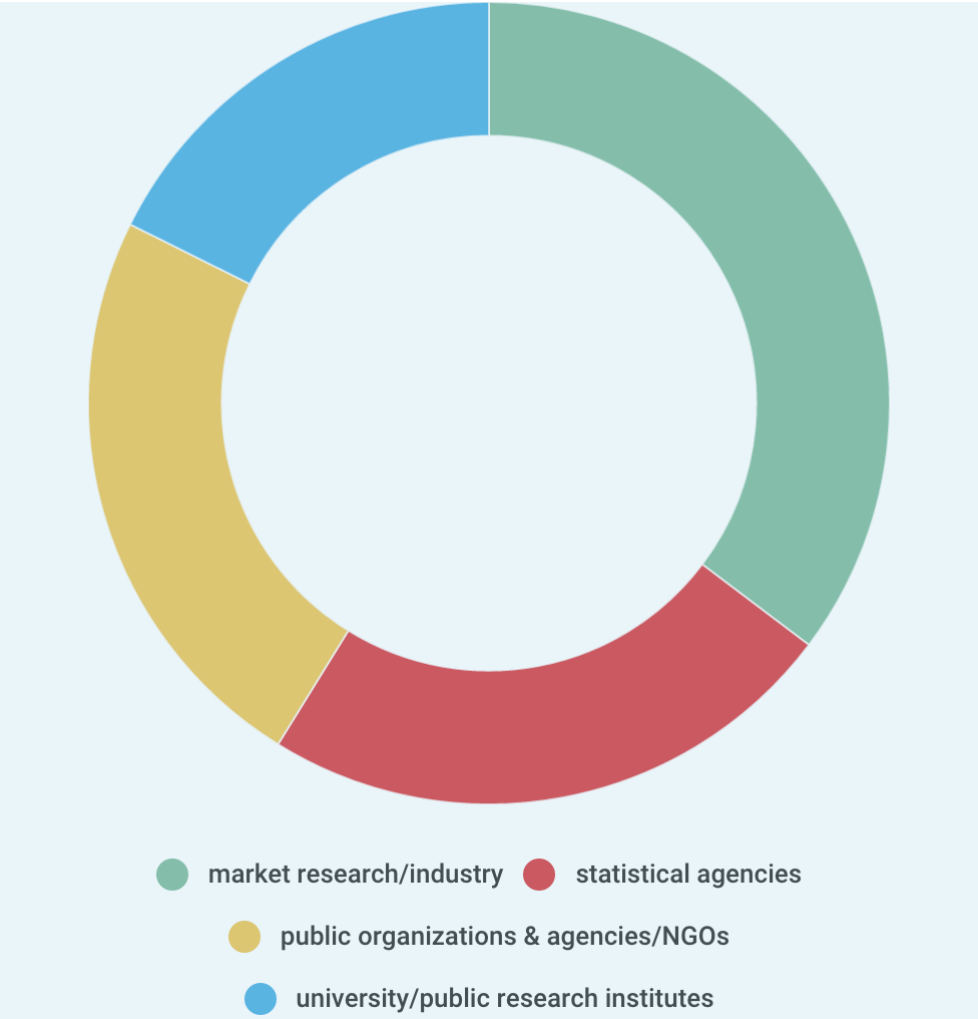


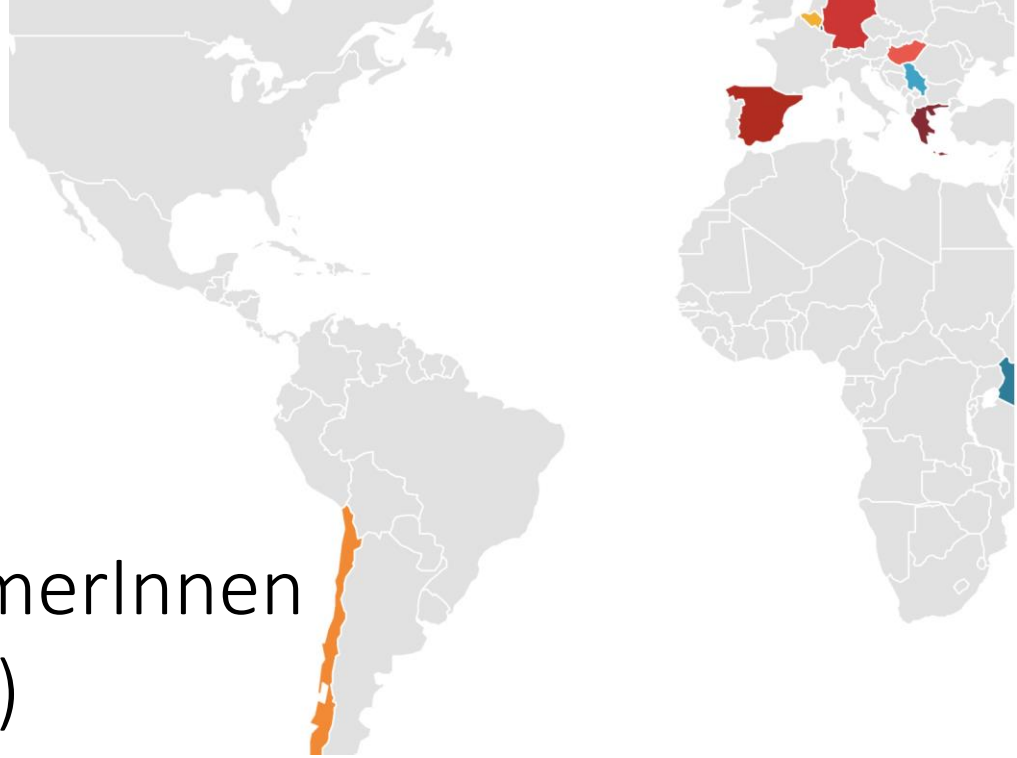
Zeitstrahl der Testphase in Mannheim



Interesse ist groß

IPSDS 1ste Test-Kohorte





- **16** TeilnehmerInnen (10 f + 6 m)
- Medianalter **29,5** Jahre (Min-22; Max-55)
- Alle haben mindestens B.A.
- **40,76** Arbeitsstunden/Woche (Min-35; Max-55)

Hohe Nachfrage auf Arbeitgeber Seite

http://survey-data-science.net/

frauke.kreuter@uni-mannheim.de