ROUND-UP OF 1ST HALF

Hans-Jörg Schulz

1. INTRODUCTION

2. VISUAL ENCODING

3. BASIC CHART TYPES

Basics

4. INTERACTION

5. VISUALIZATION DESIGN

6. DATA PREPROCESSING

Visualization Building Blocks & Processes

7. RECAP 1st Half

8. MULTIVARIATE DATAVIS

9. TEMPORAL DATAVIS

10. GEOSPATIAL DATAVIS

11. GRAPH DATAVIS

Visualization Techniques

12. 3D DATAVIS

13. VISUAL ANALYTICS

Visualization Applications

14. RECAP 2nd Half

NESTED MODEL

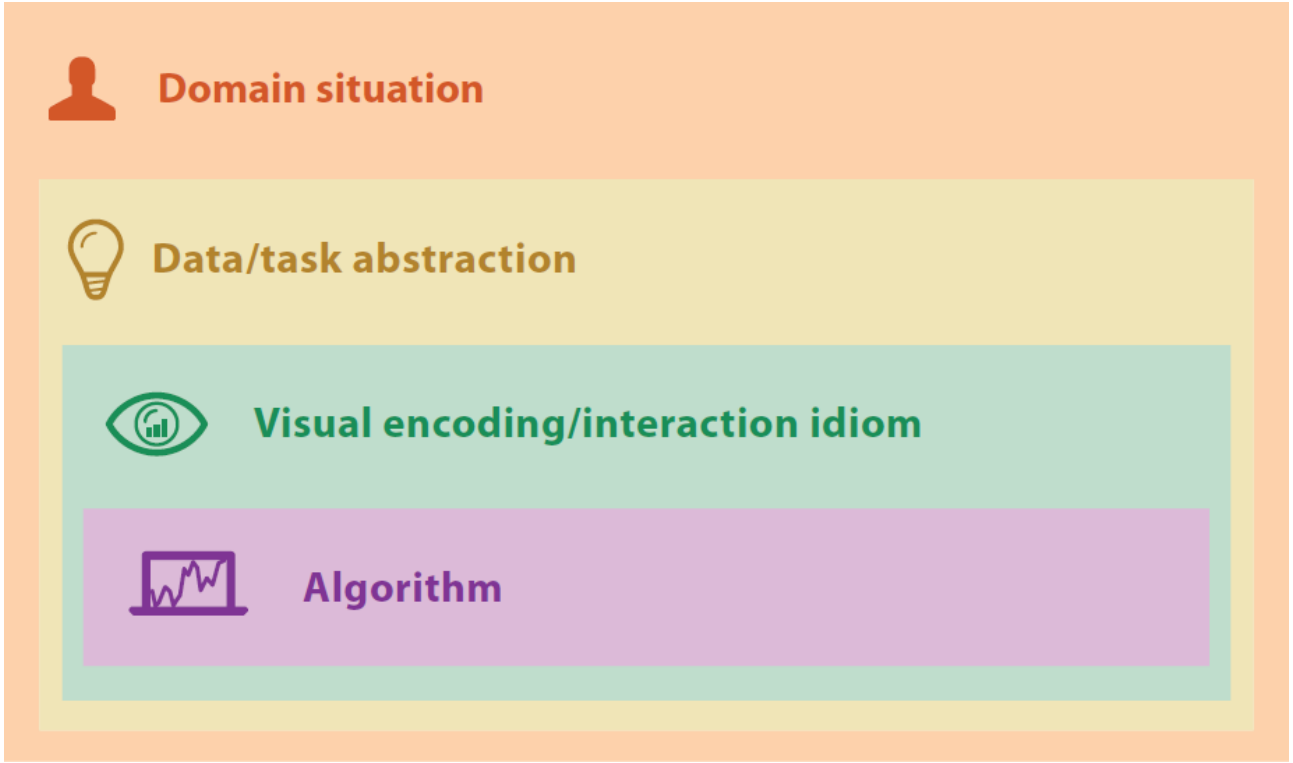


Image source: T.Munzner 2014
https://doi.org/10.1109/TVCG.2009.111

Domain: application field ... usage scenario

=> target users
=> needs for visualization
=> representational conventions

Data / Task: what is to be shown to which end

=> abstract data description
=> abstract task description
=> which task on which data -> workflow

Visual encoding: how shall the data be shown

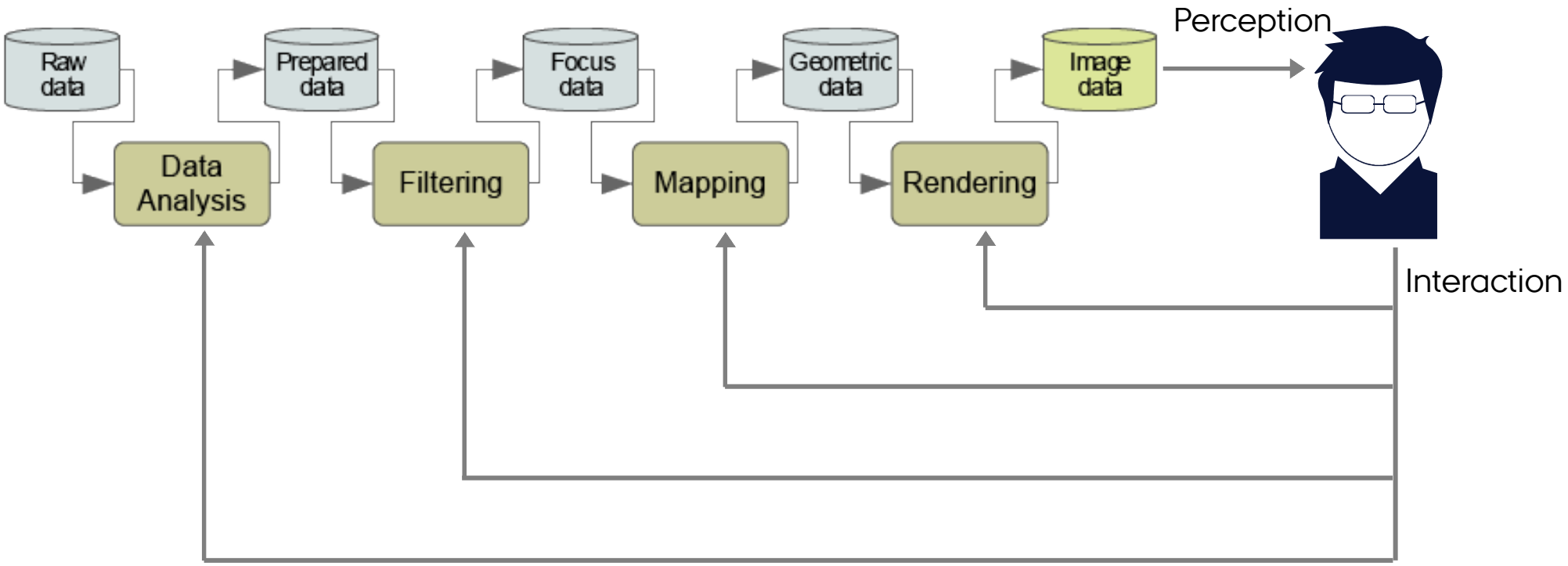
=> visual entity budget / decluttering
=> positioning / placement w.r.t. mental map
=> labeling

Algorithm: how to realize / implement that

=> iterative / incremental
=> optimal / heuristic
=> fixed / parametrizable

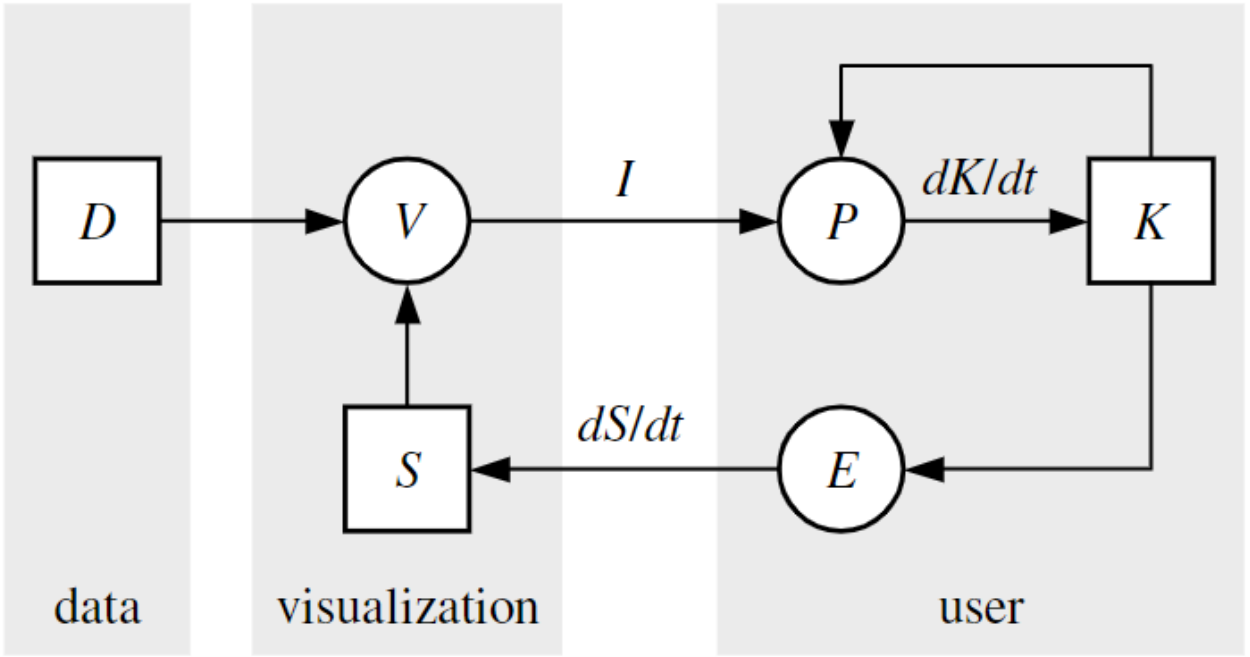
THE VISUALIZATION PIPELINE

Image source: InfoVis Wiki



[Haber, McNabb 1990] and [Card, Mackinley 1999]
https://www.academia.edu/download/40903302/HaberMcNabb1990.pdf
http://www.sci.utah.edu/vrc2005/McCormick-1987-VSC.pdf

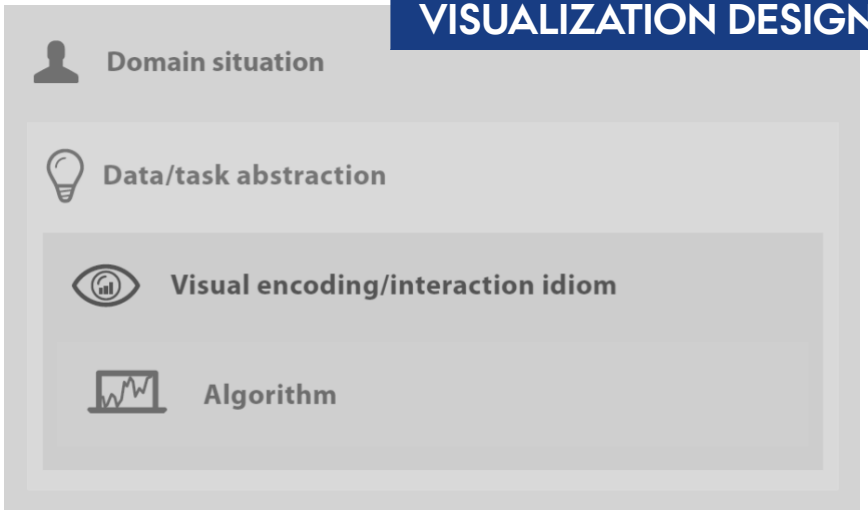
V.WIJK'S VISUALIZATION MODEL



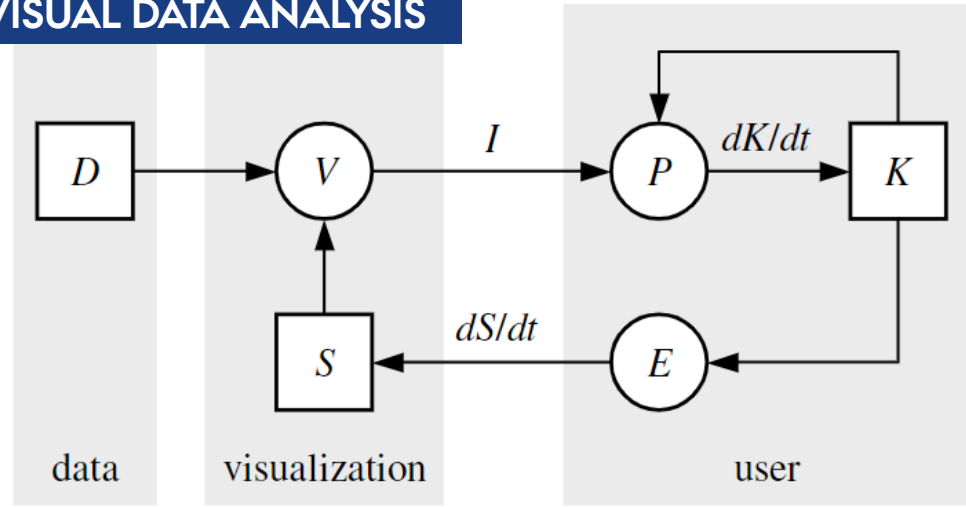
D = data
S = specification
V = visualization
I = image
P = perception
K = knowledge
E = interactive exploration

Image source: v.Wijk 2005
https://doi.org/10.1109/VISUAL.2005.1532781

VISUALIZATION DESIGN



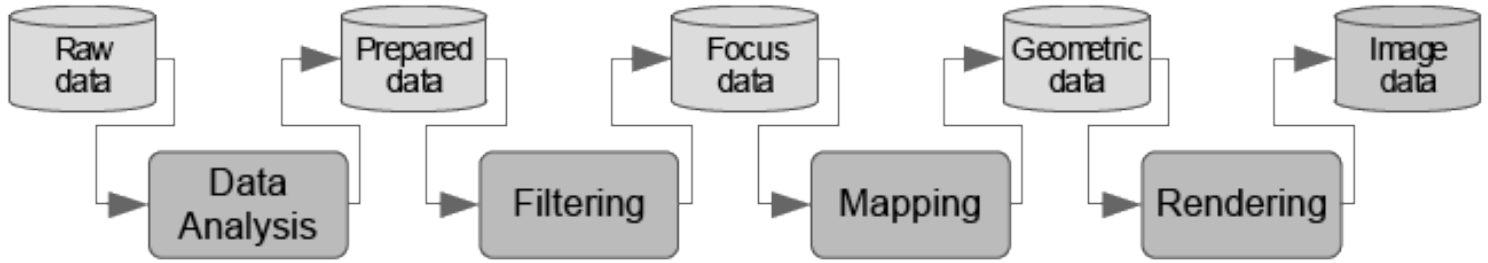
VISUAL DATA ANALYSIS



PRODUCES

USED FOR

VISUALIZATION

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