

Building parallel coordinates

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Parallel Coordinates: Good

Multivariate data

Conceptually simple

Apply Generally

Cheap to render

Parallel Coordinates: Bad

Visual clutter

Not high dimensionality

Pairwise comparison

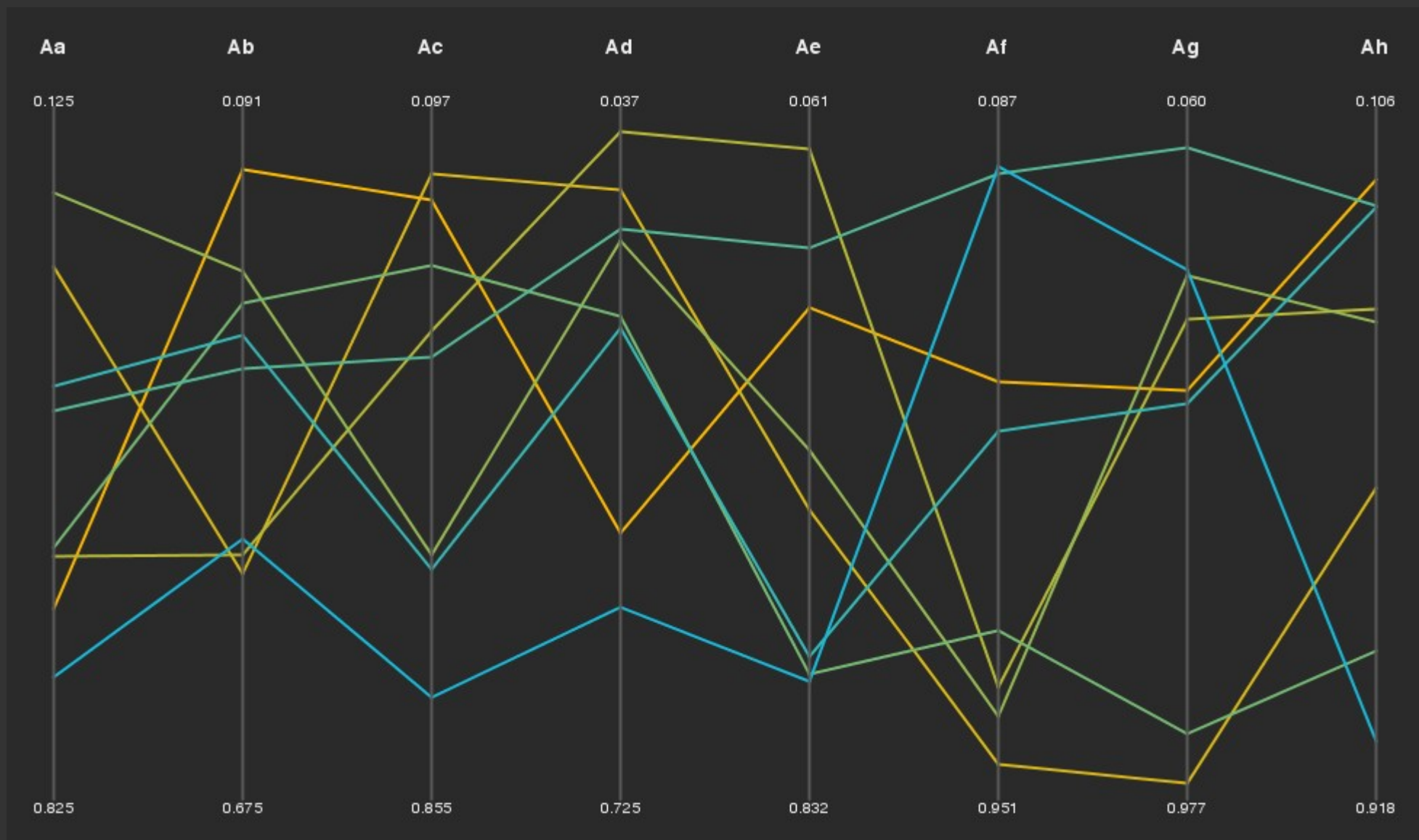
Order of axes

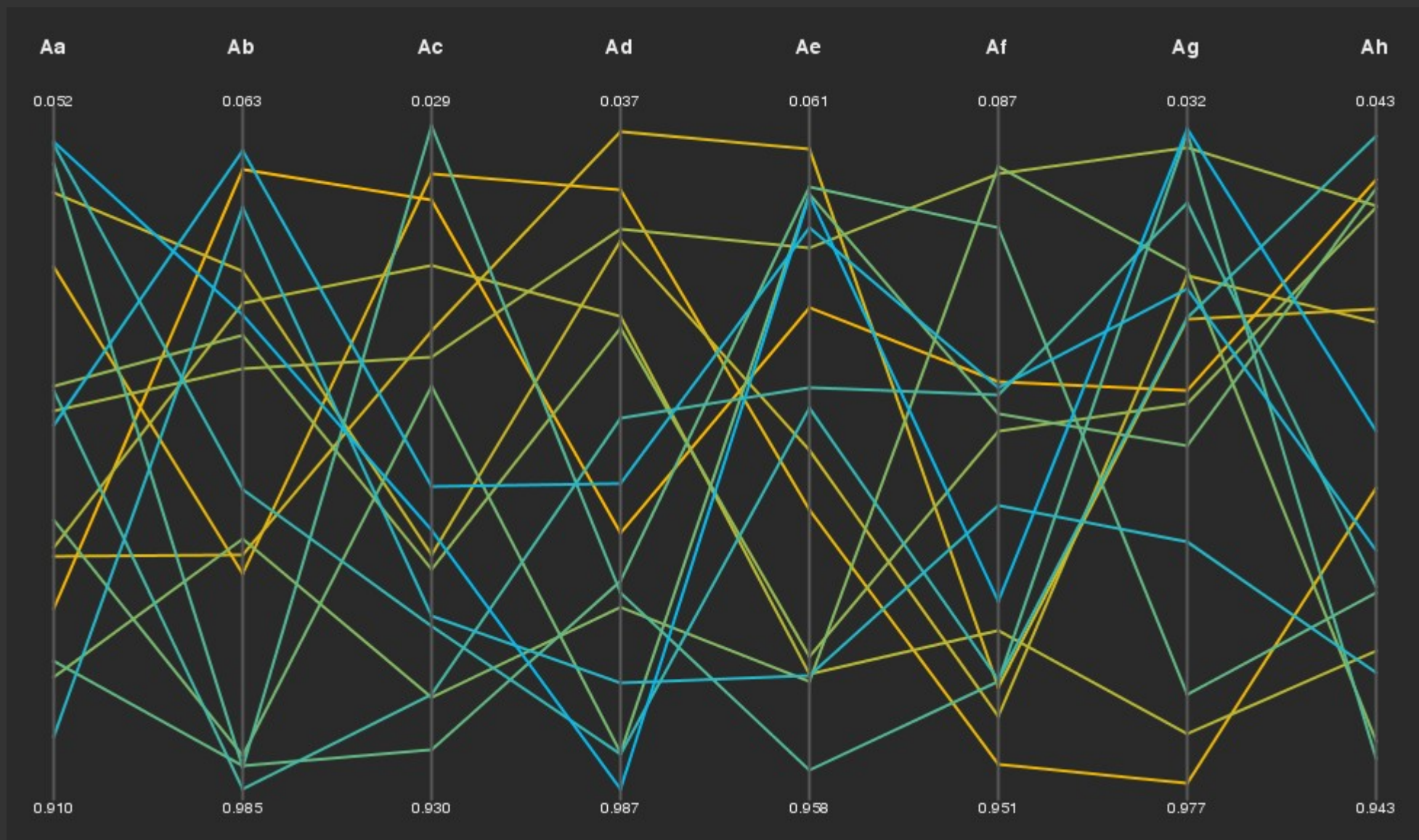
Order of axes

Dimensional reduction

Computer-controlled ordering

Manual axis shuffling







Shuffling

Scales poorly

Mentally, physically expensive

Requires knowledge of data

Labour and luck

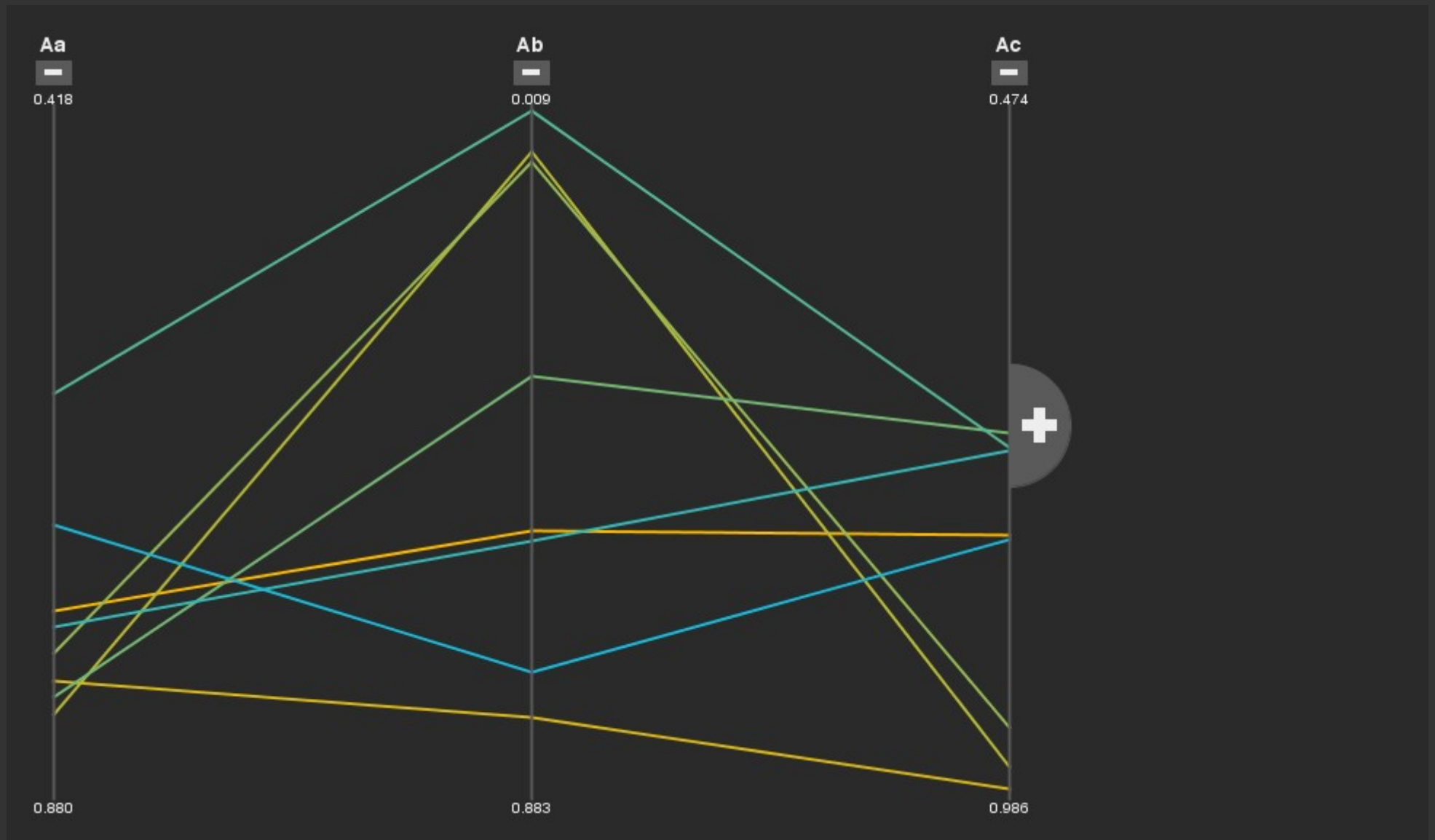
Wanted ordering method

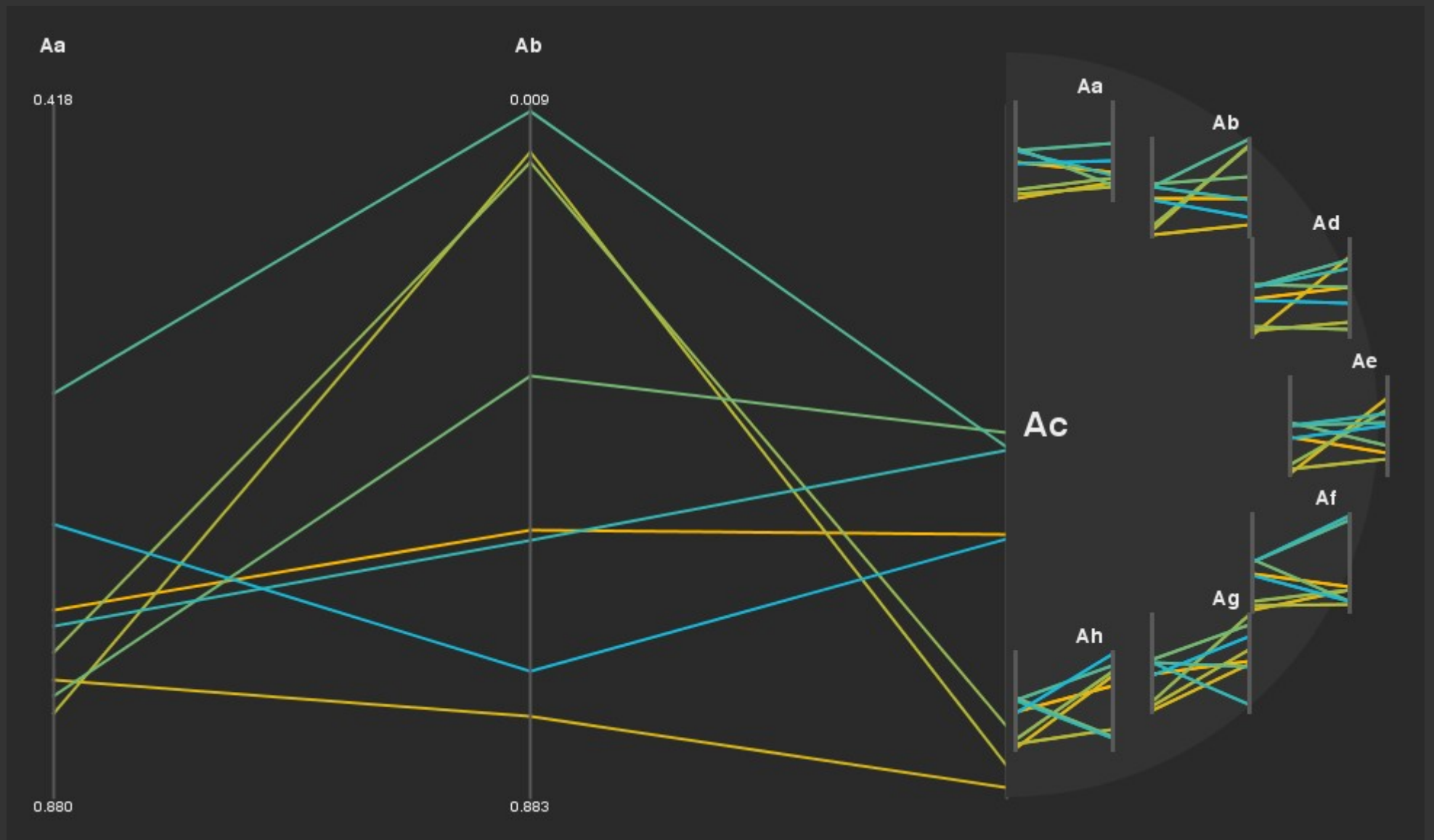
Simple

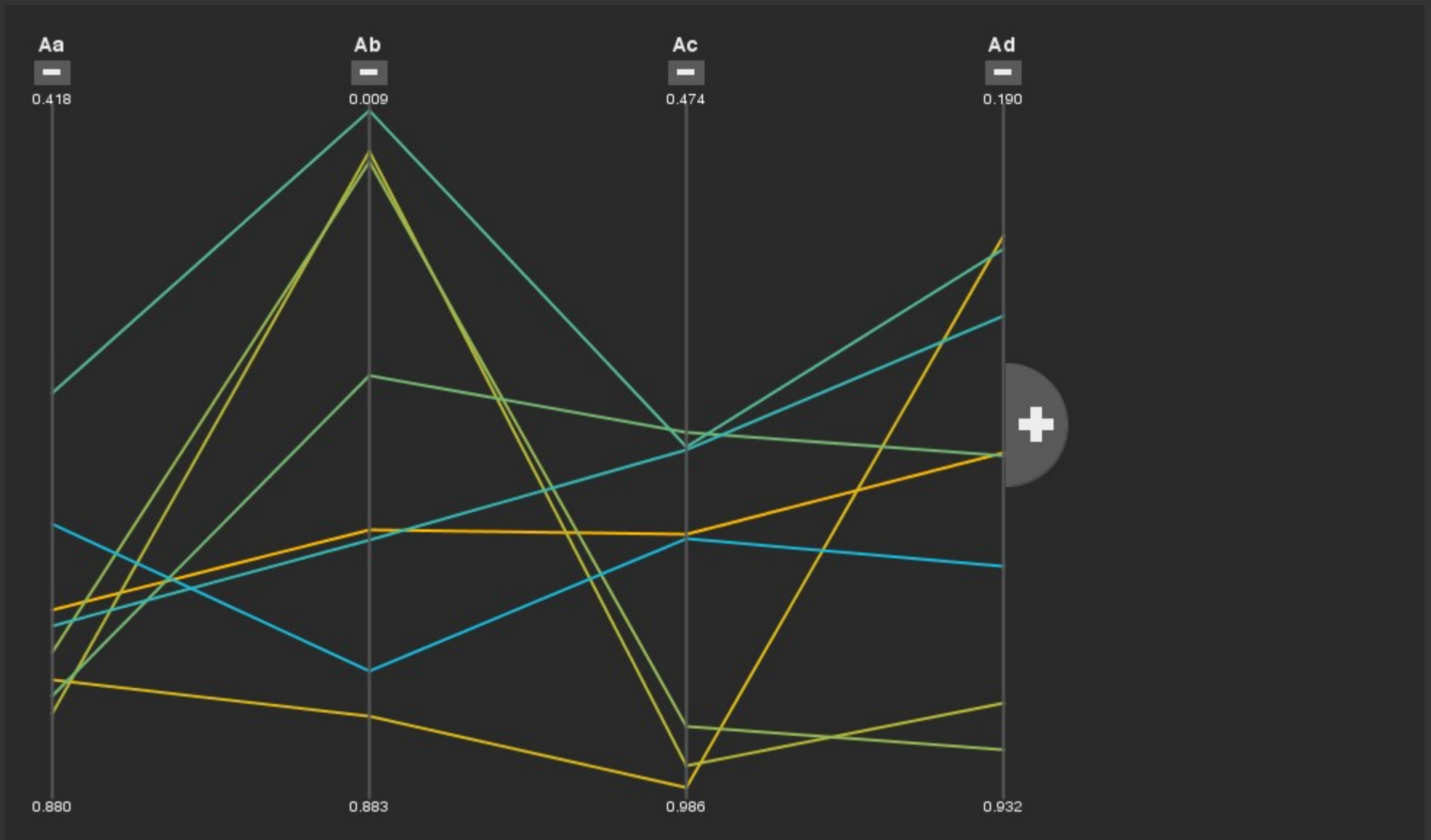
Inexpensive

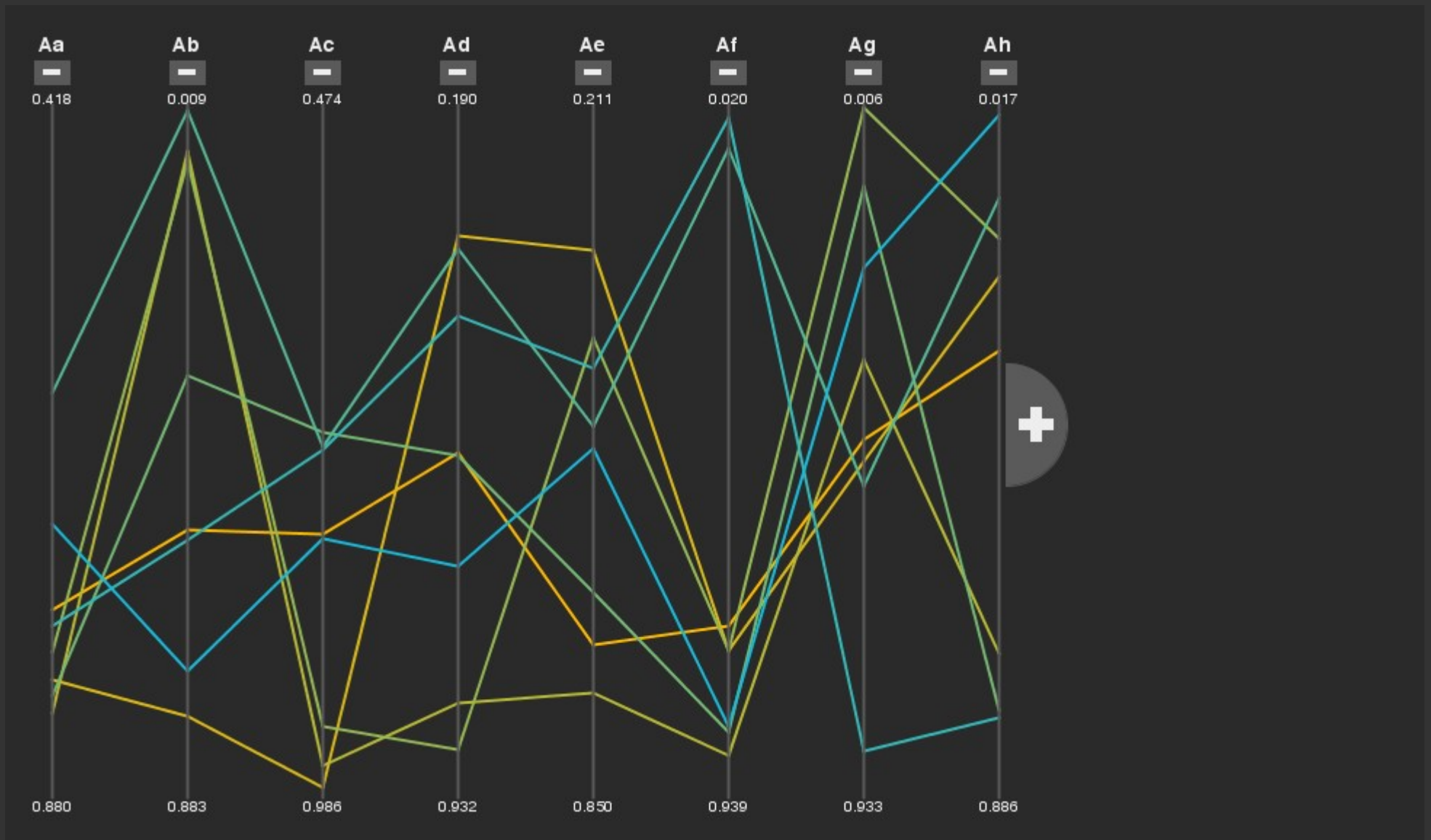
User control

Exploratory









Advantages

Piece-by-piece exploration

Look ahead

Simplify the plot

Immediate advantages

Efficiency

Space

Lower mental load

Comparison

Development

Simple when simple
Formal and informal
Reinventing wheel



[from <http://www.processing.org/>]

Comparing methods

Shuffling vs. Fan–menus

Time, error rates

Conclude one is better

Evaluating the method

Exercises with real data

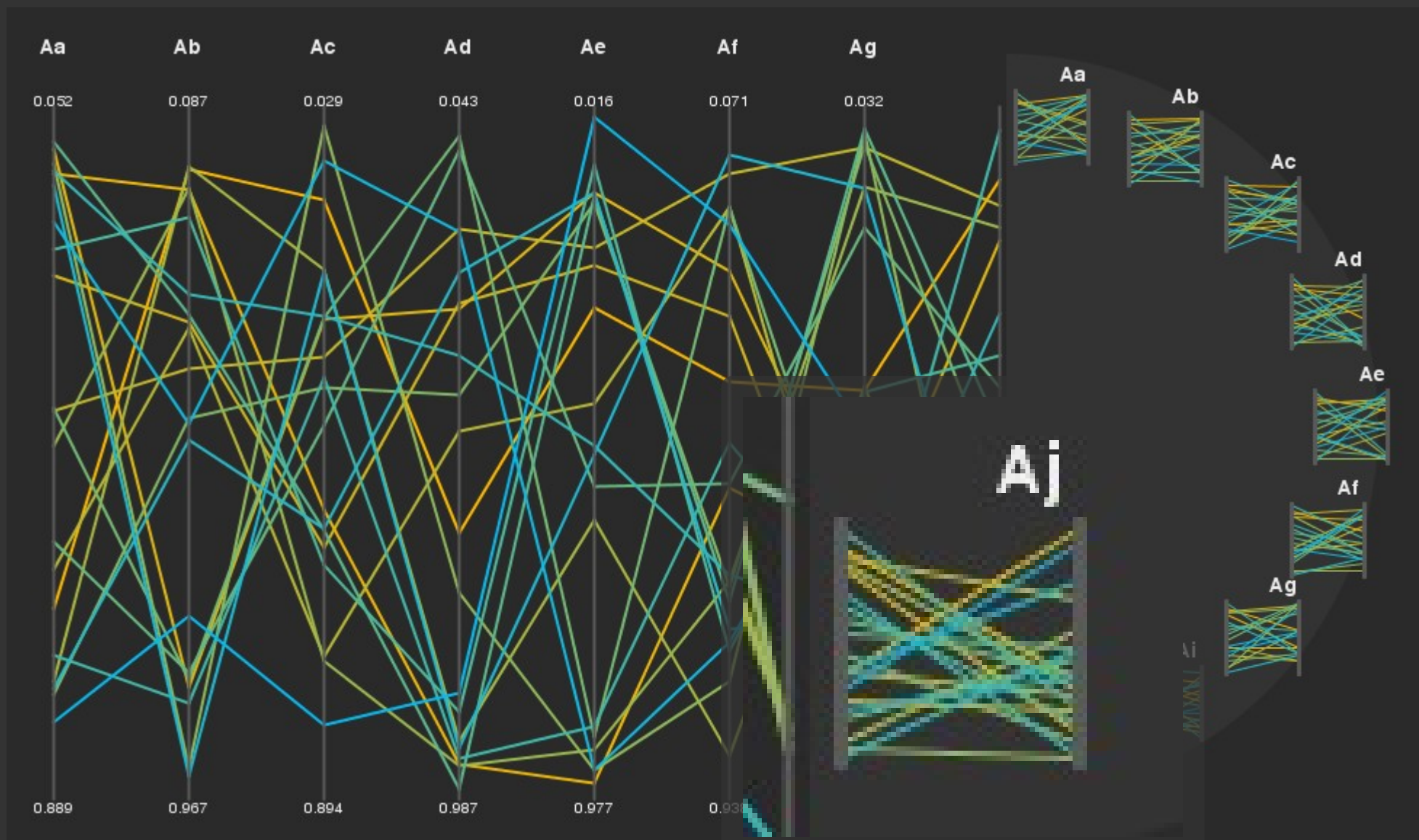
Ability, satisfaction

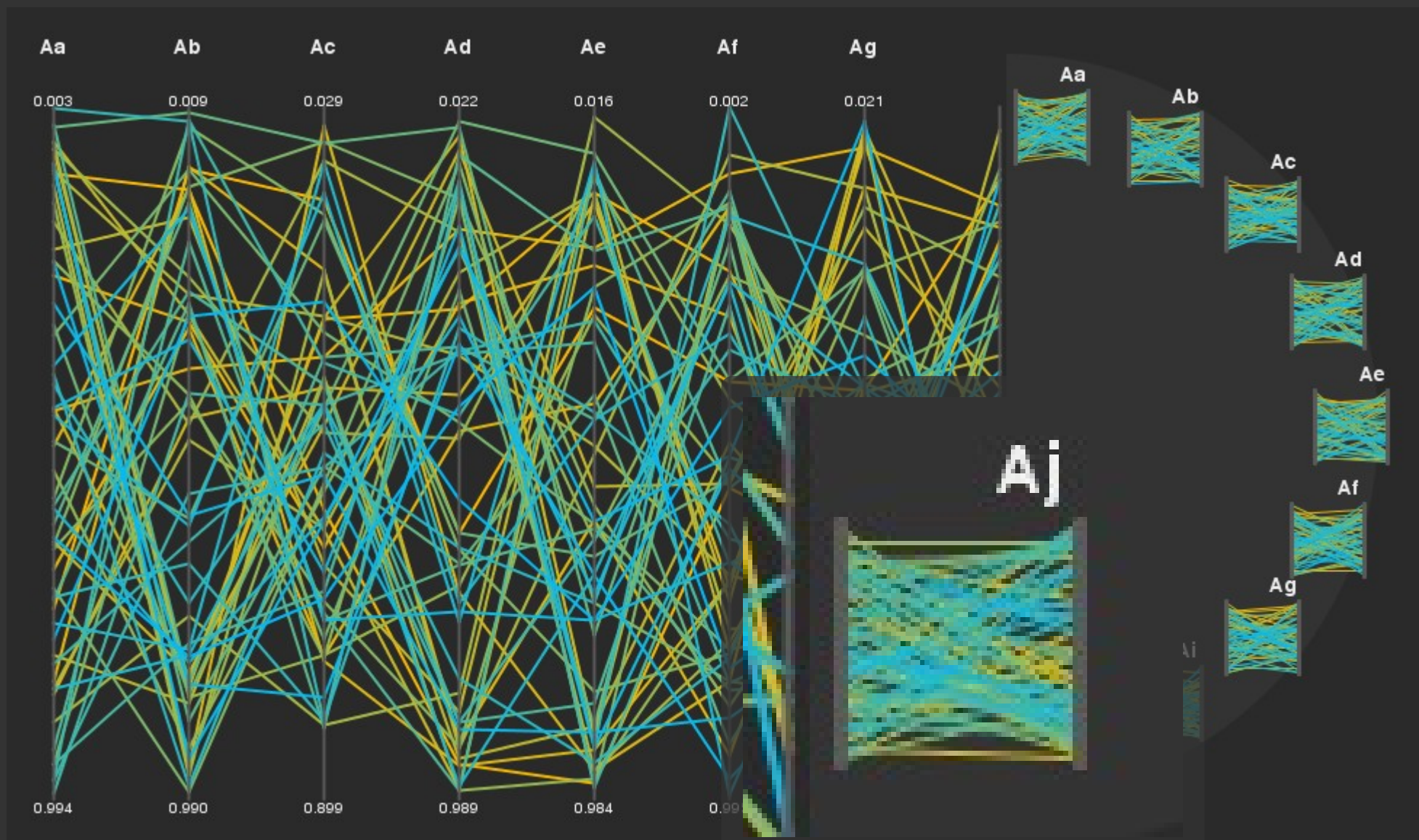
Evaluating the method

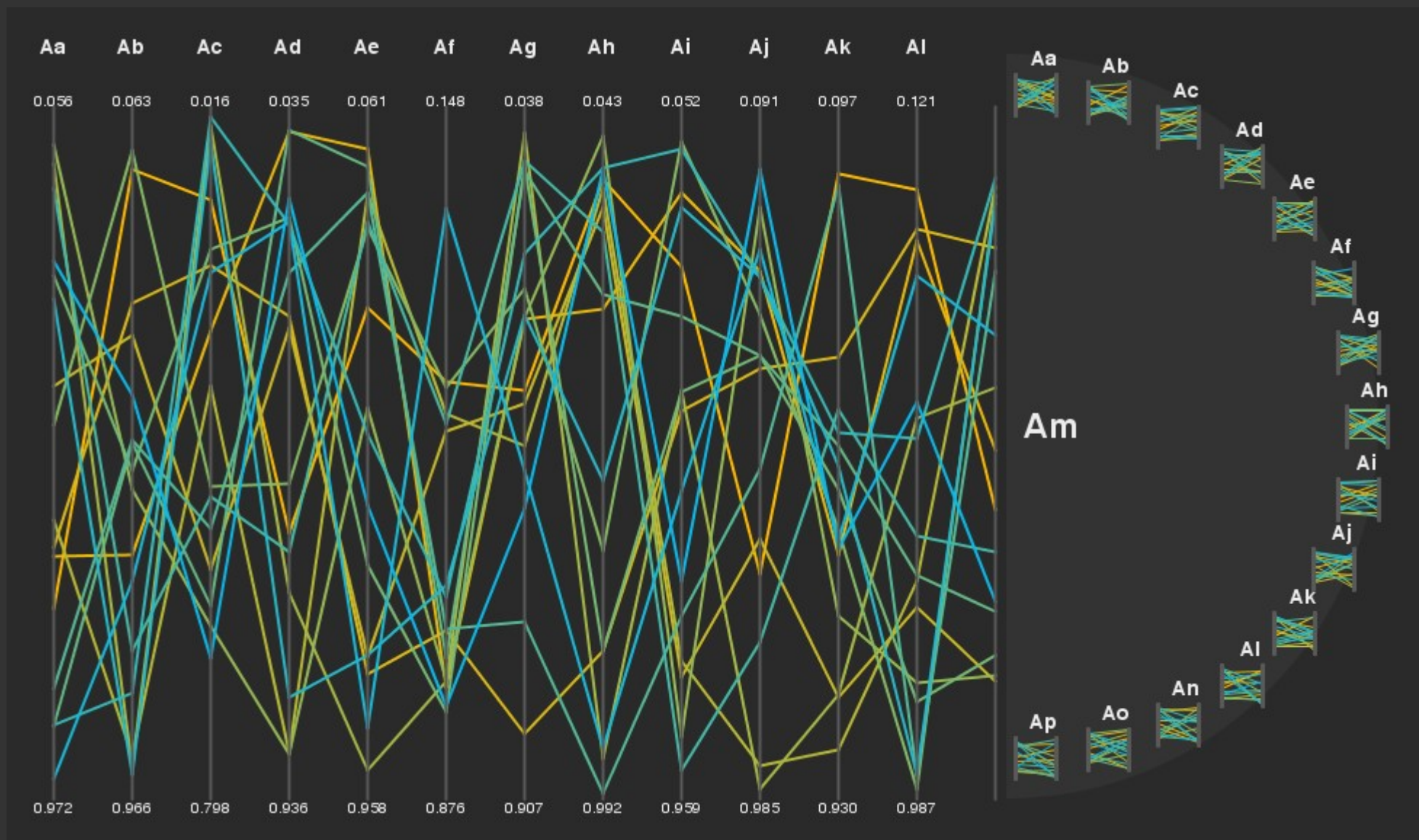
Data-dependent

Artificial tasks

Method or lack of understanding?





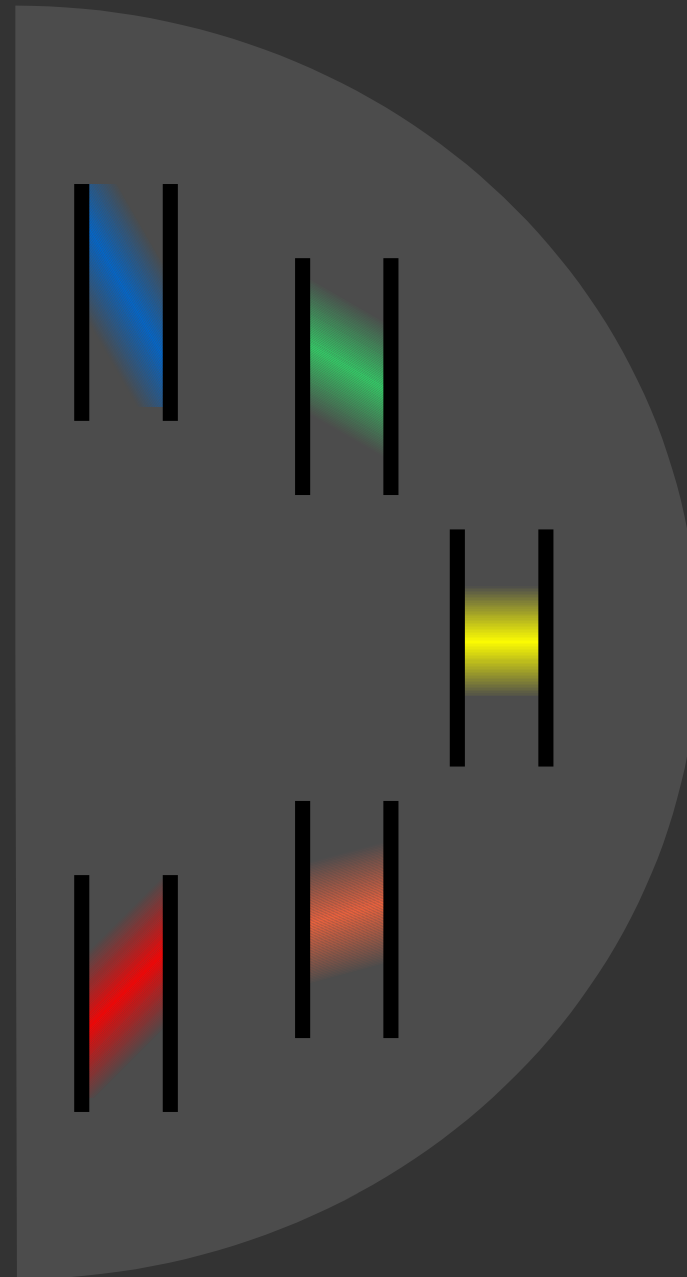


Future work

Filter and sort

Sort by cluster, trend

Include metadata



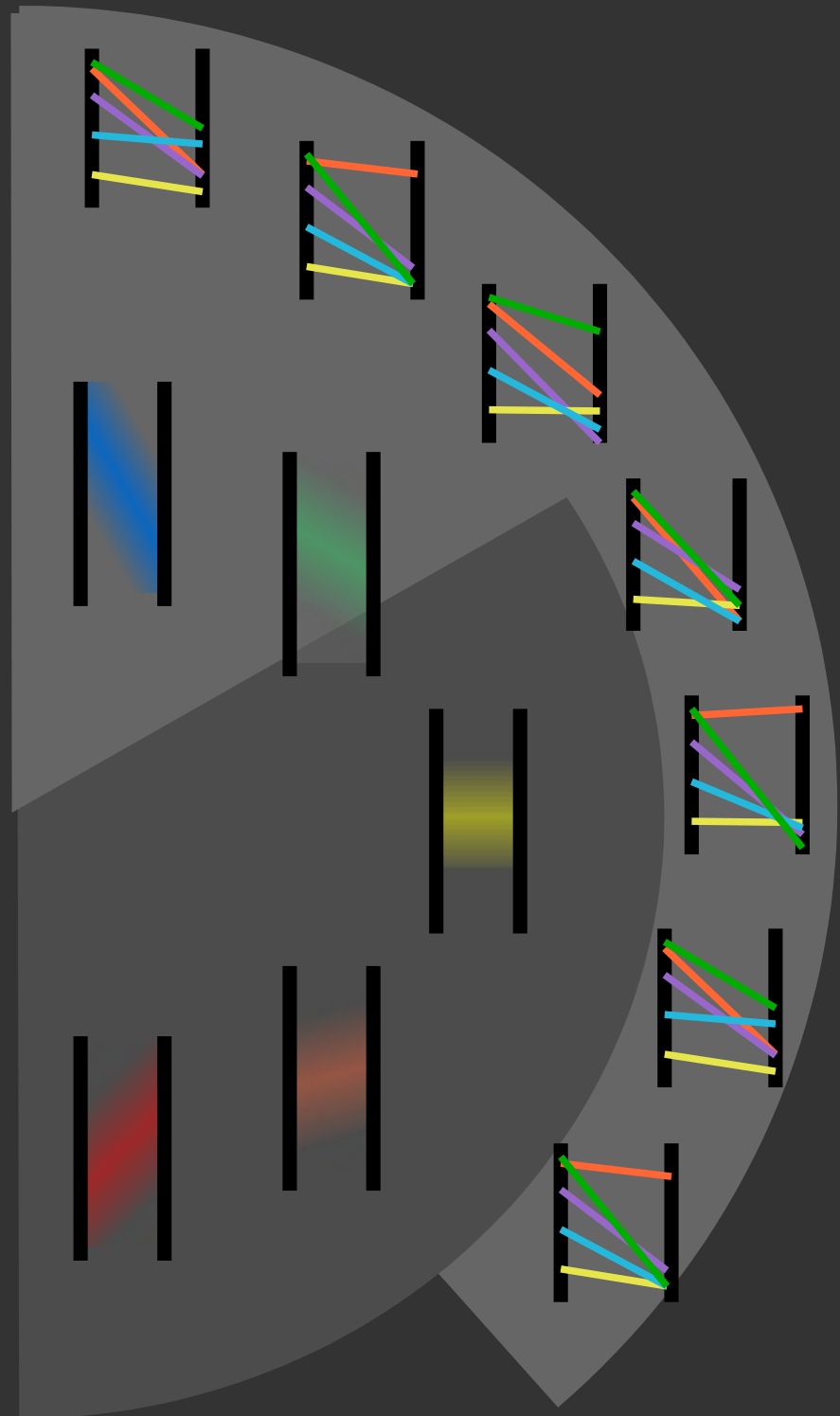
Drawbacks

Comparison

Mouse efficiency

Mental, physical cost

Less exploratory



Parallel coords are useful
Room for improvement
Useable and informative

User constructed plots

Showing
Exploring
Understanding