

FACETING

From Munzner's book

Visualizing Big Data



Faceting

Facet (verb) = to split

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In visualization, it means:

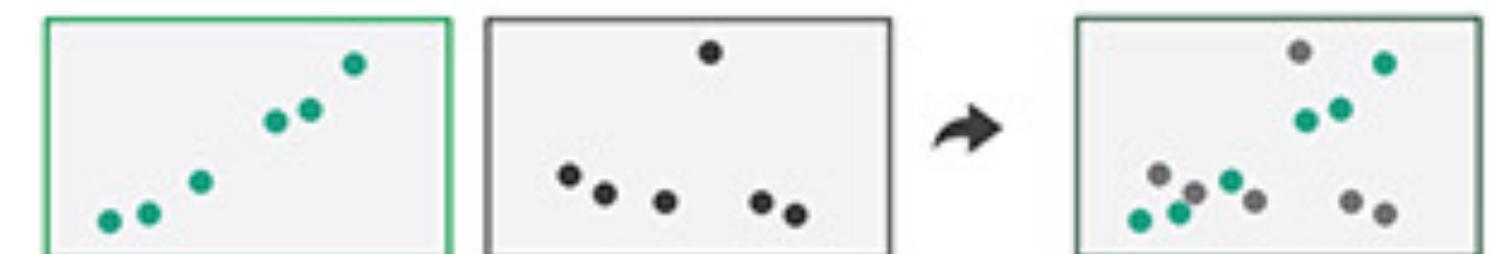
split into multiple views

or separate into layers

④ Partition into Side-by-Side Views



④ Superimpose Layers



Faceting

Facet (verb) = to split

In visualization, it means:

split into multiple views

or separate into layers

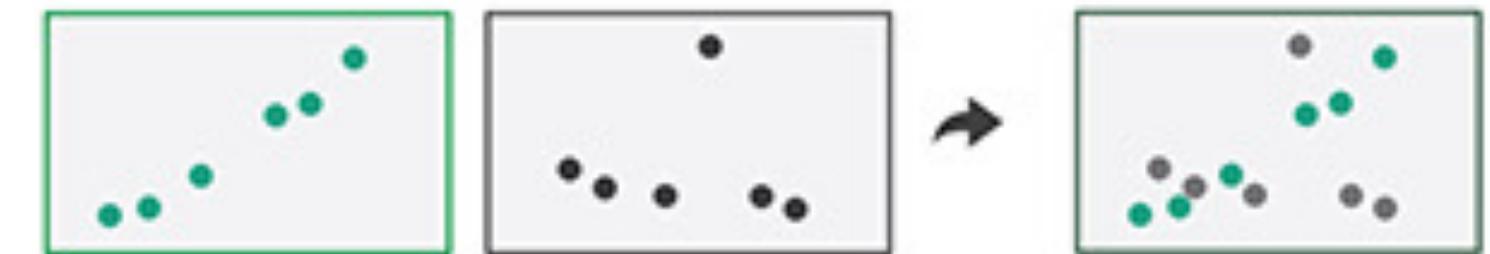
Why?

- complexity reduction
- rely on vision instead of memory retrieval

④ Partition into Side-by-Side Views



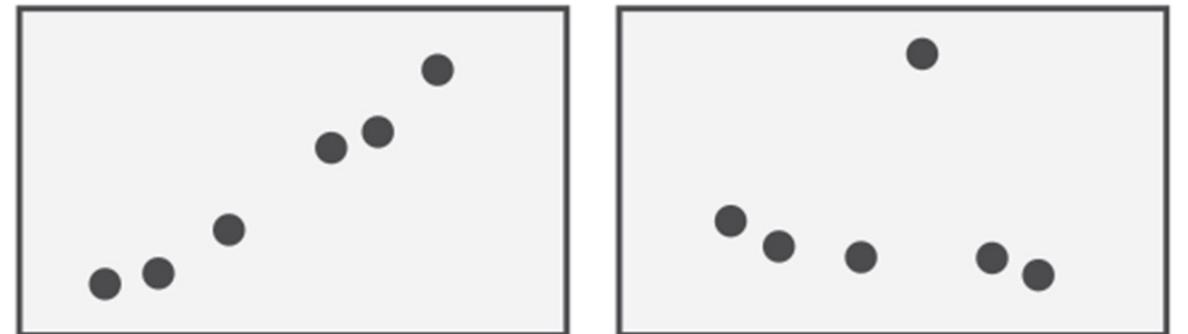
④ Superimpose Layers



Faceting

Side-by-Side Views

- Partition into Side-by-Side Views



Pro:

- Easy to compare

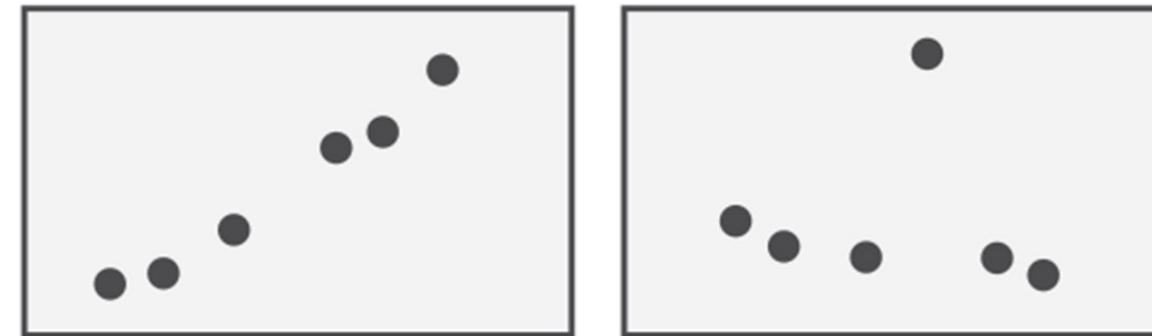
Con:

- Takes up more space on the screen

Faceting

Side-by-Side Views

→ Partition into Side-by-Side Views

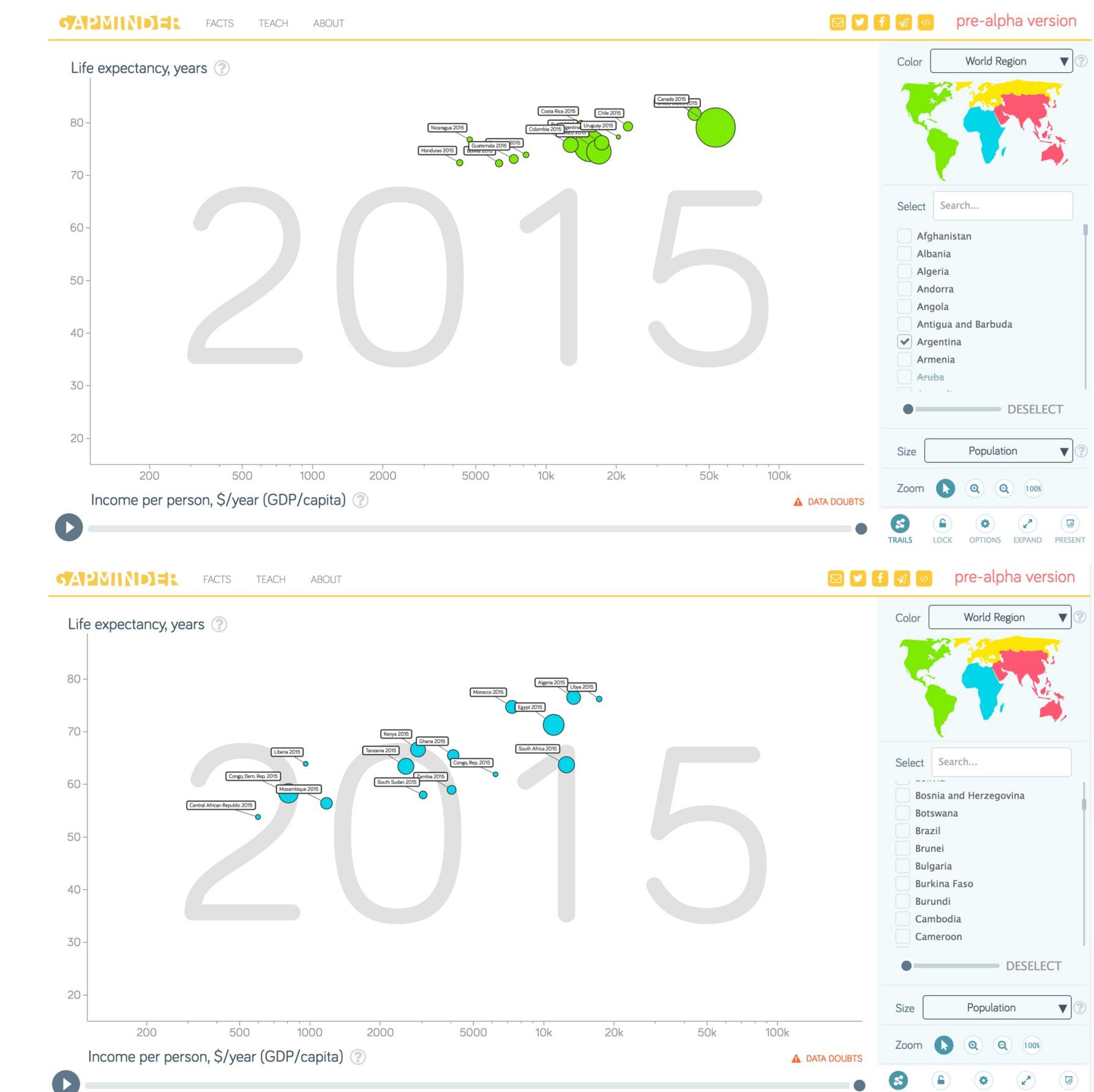


Pro:

→ Easy to compare

Con:

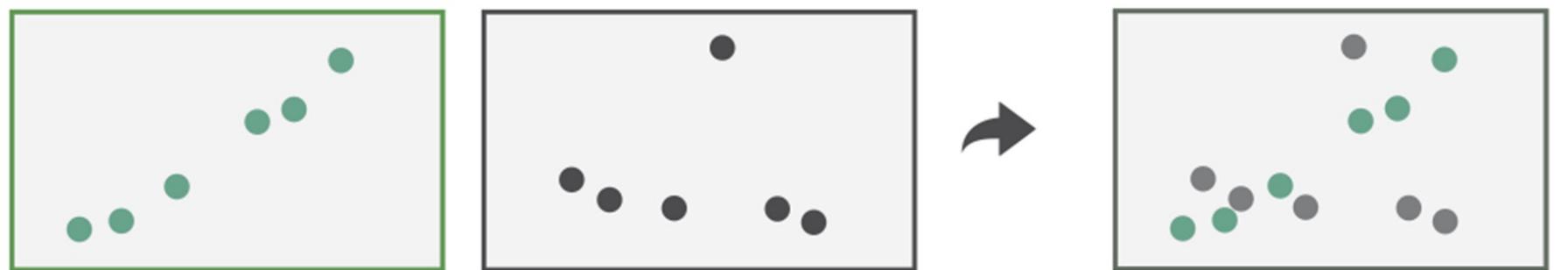
→ Takes up more space on the screen



Faceting

Superimposed Layers

→ Superimpose Layers



Pro:

- Requires less screen space
- Easy to compare

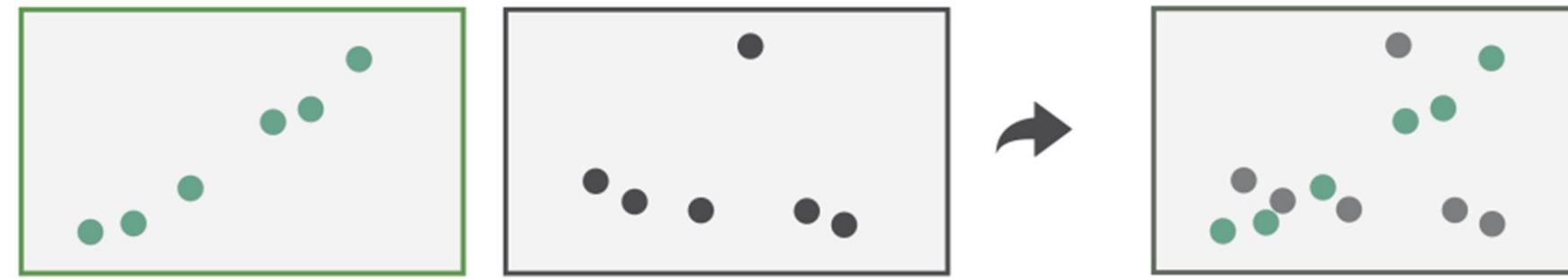
Con:

- Limits encoding options
- Can get messy

Faceting

Superimposed Layers

→ Superimpose Layers

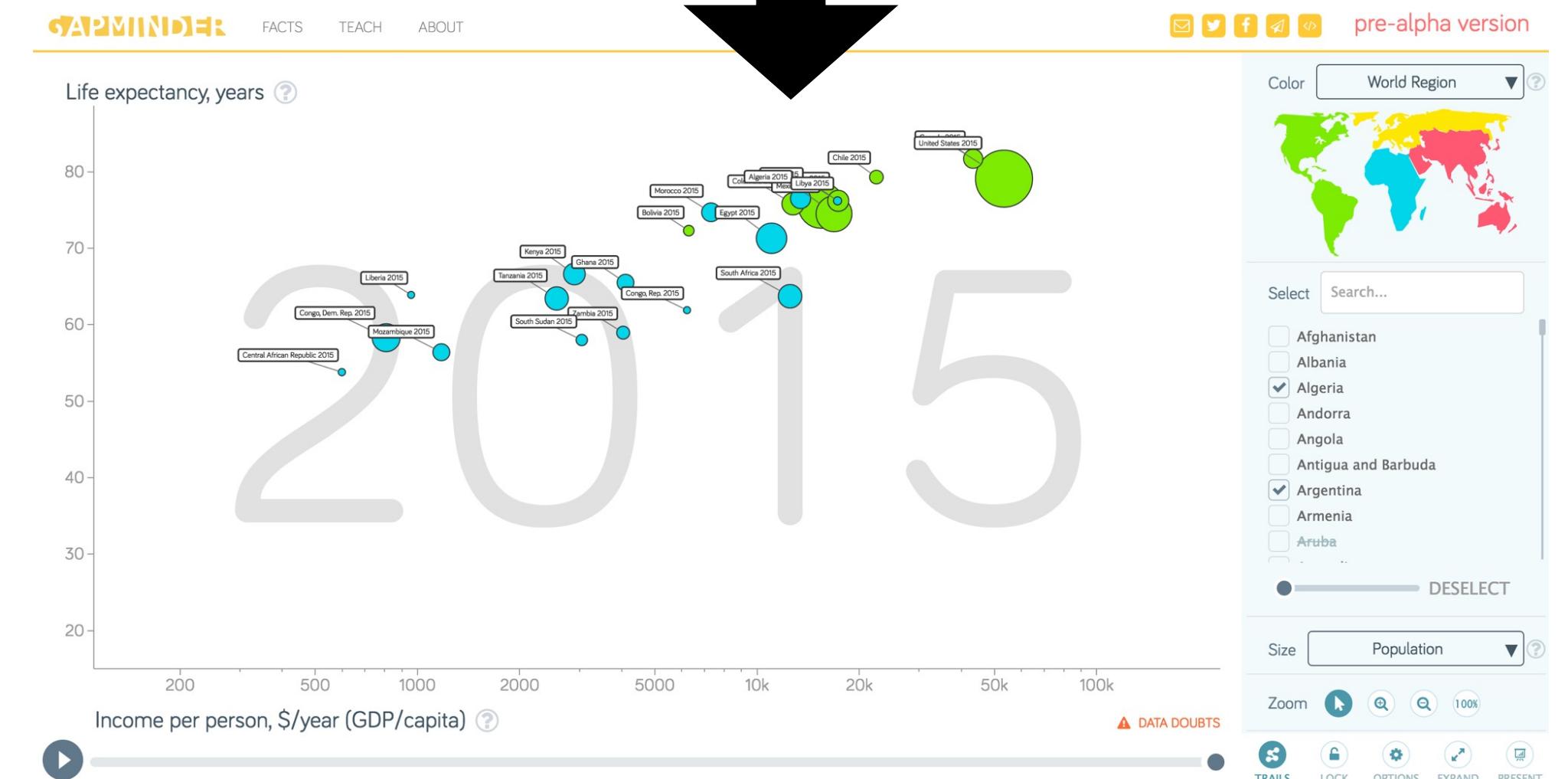
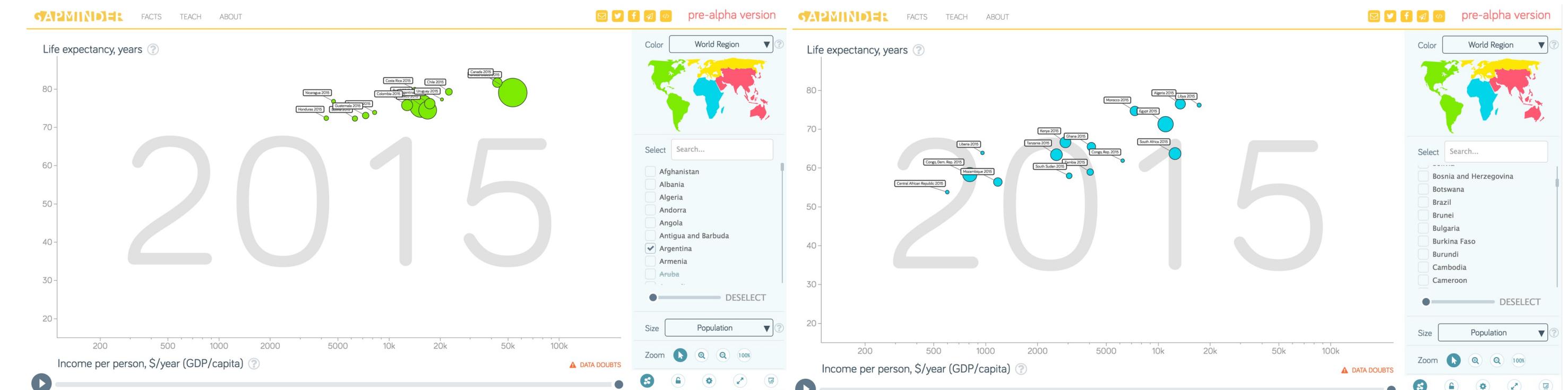


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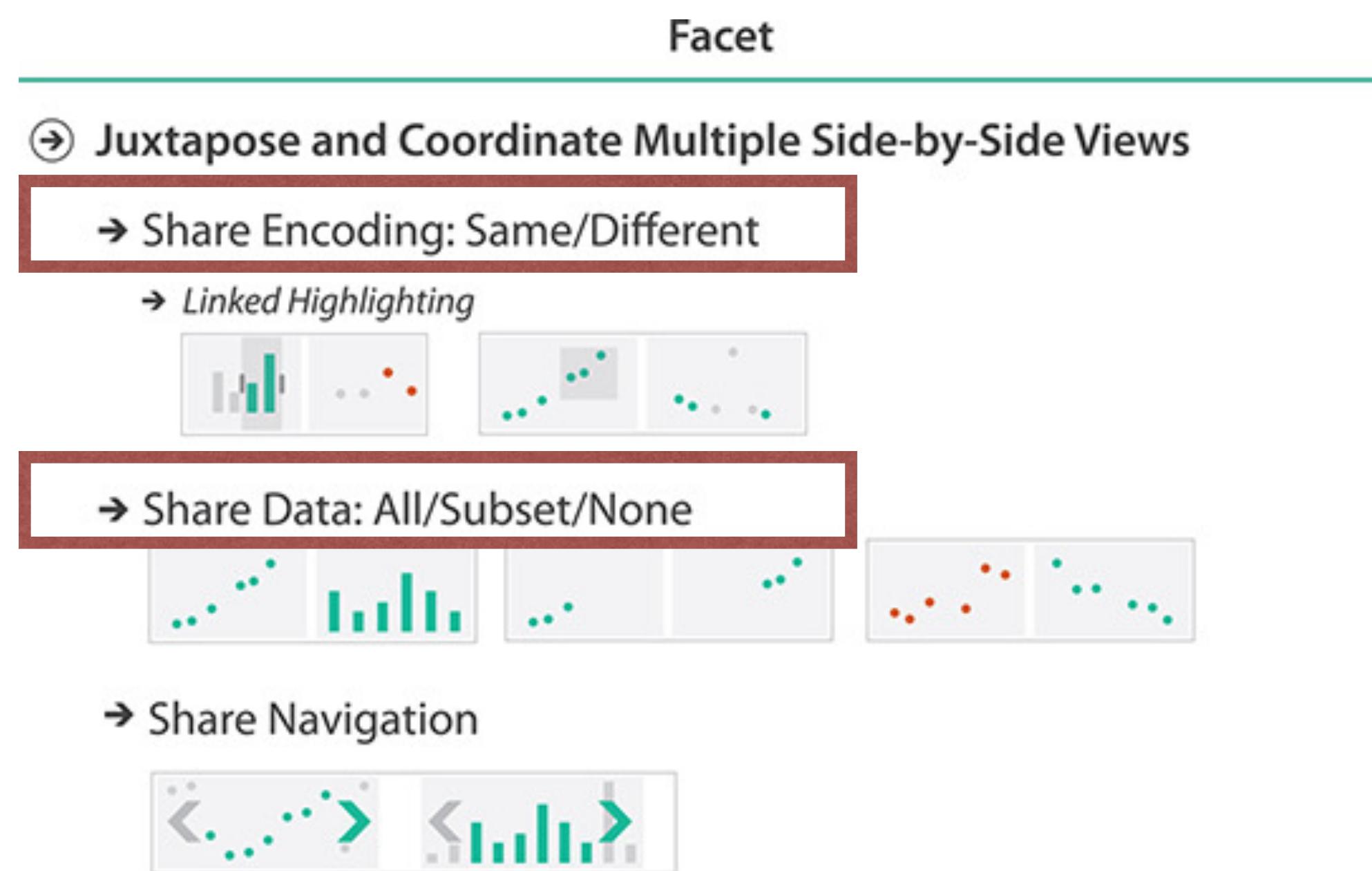


Faceting

Coordination → In addition to arranging views side-by-side vs. superimposed we need to choose how to coordinate them (or not)

Faceting

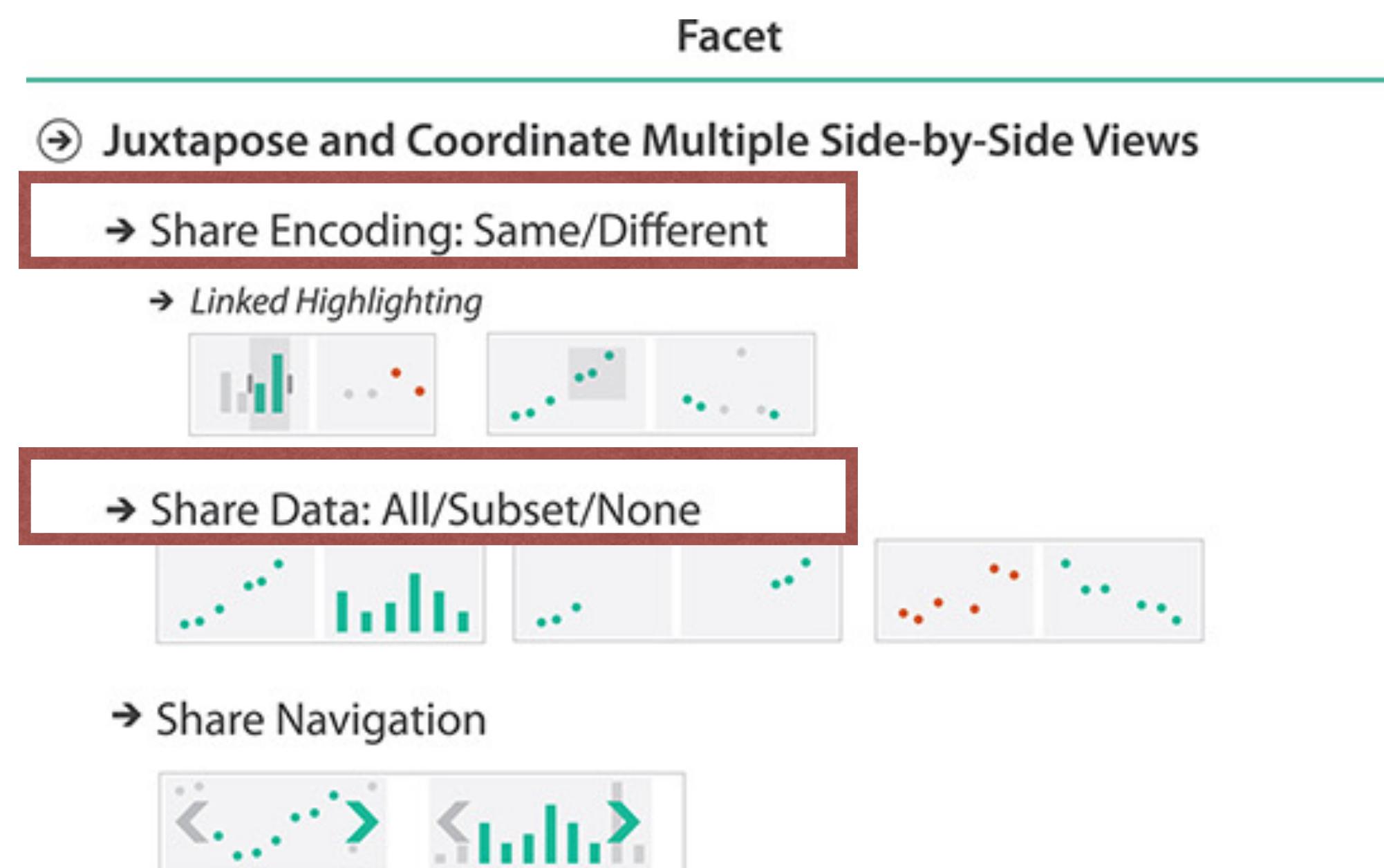
Coordination → In addition to arranging views side-by-side vs. superimposed we need to choose how to coordinate them (or not)



Encoding	Data		
	All	Subset	None
Same	Redundant	 Overview/ Detail	 Small Multiples
Different	 Multiform	 Multiform, Overview/ Detail	No Linkage

Faceting

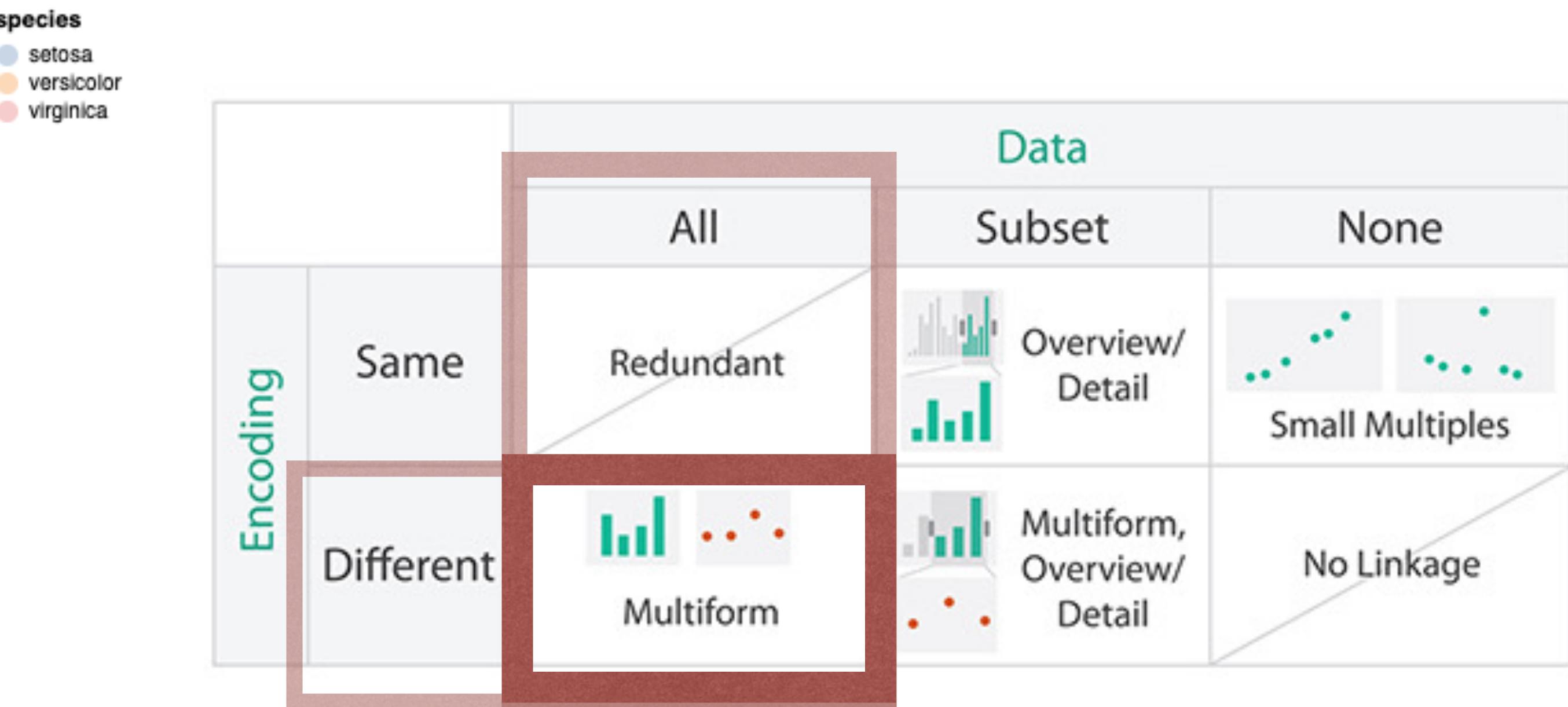
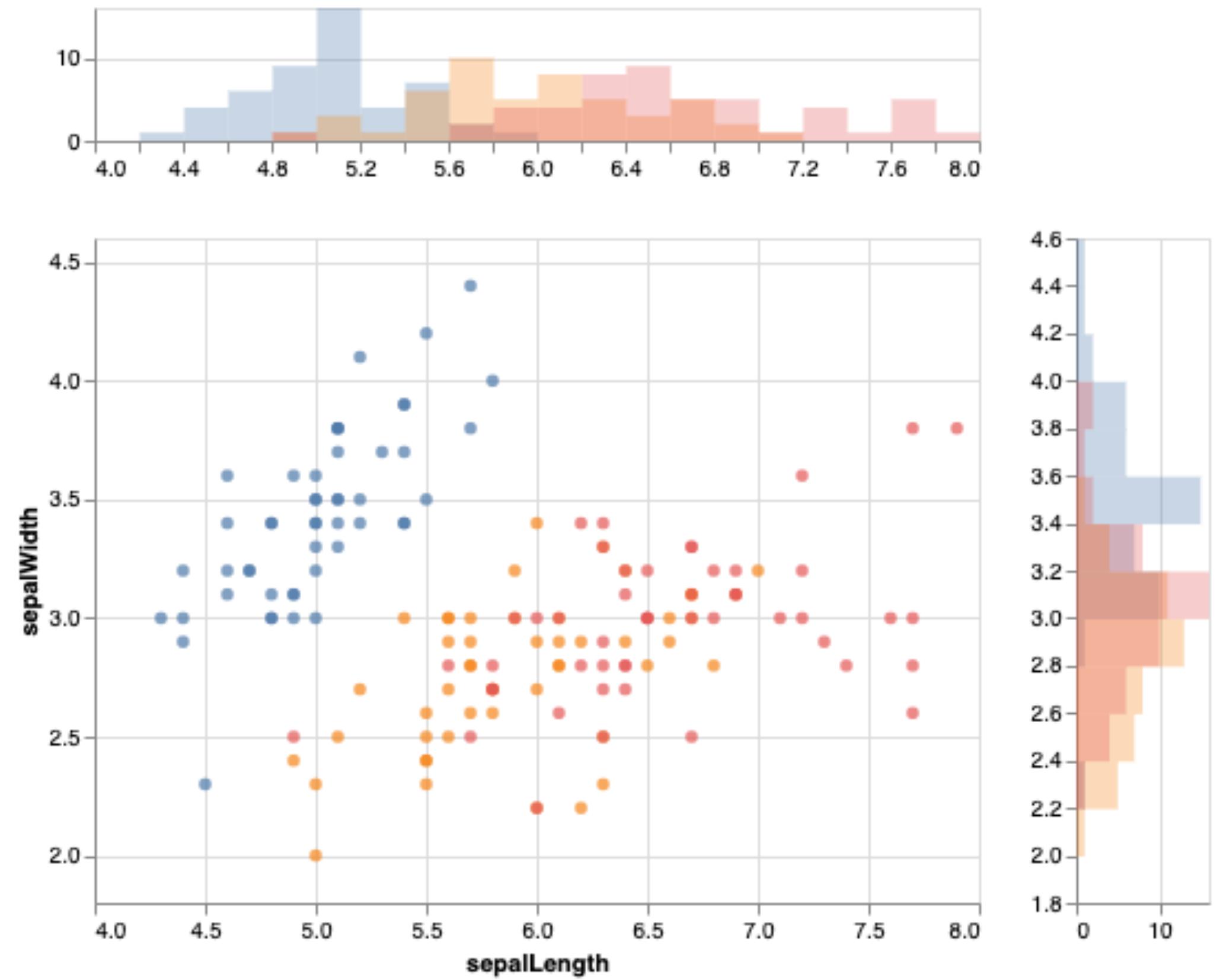
Coordination → Multiform



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		Same	Subset	None
Different	Overview/Detail	 	Small Multiples	
	Multiform, Overview/Detail	 	No Linkage	

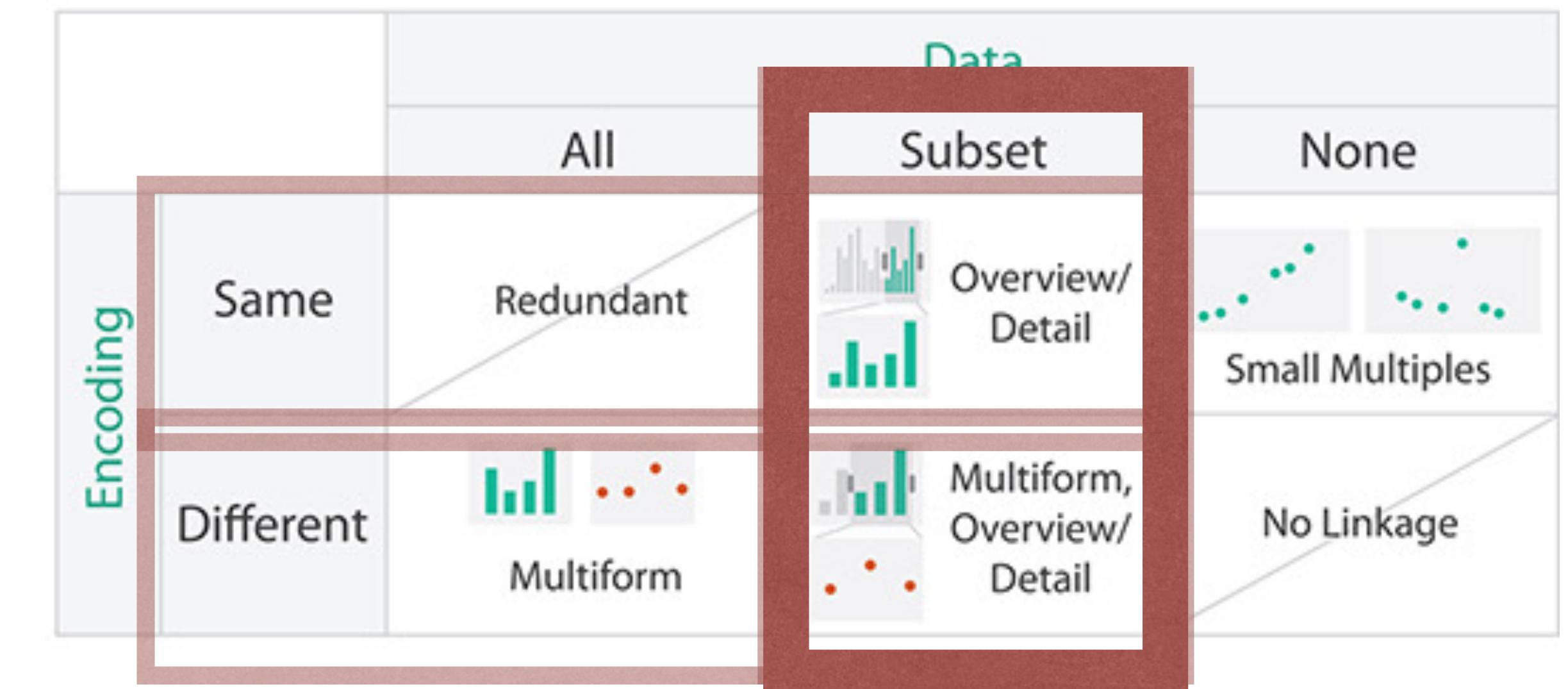
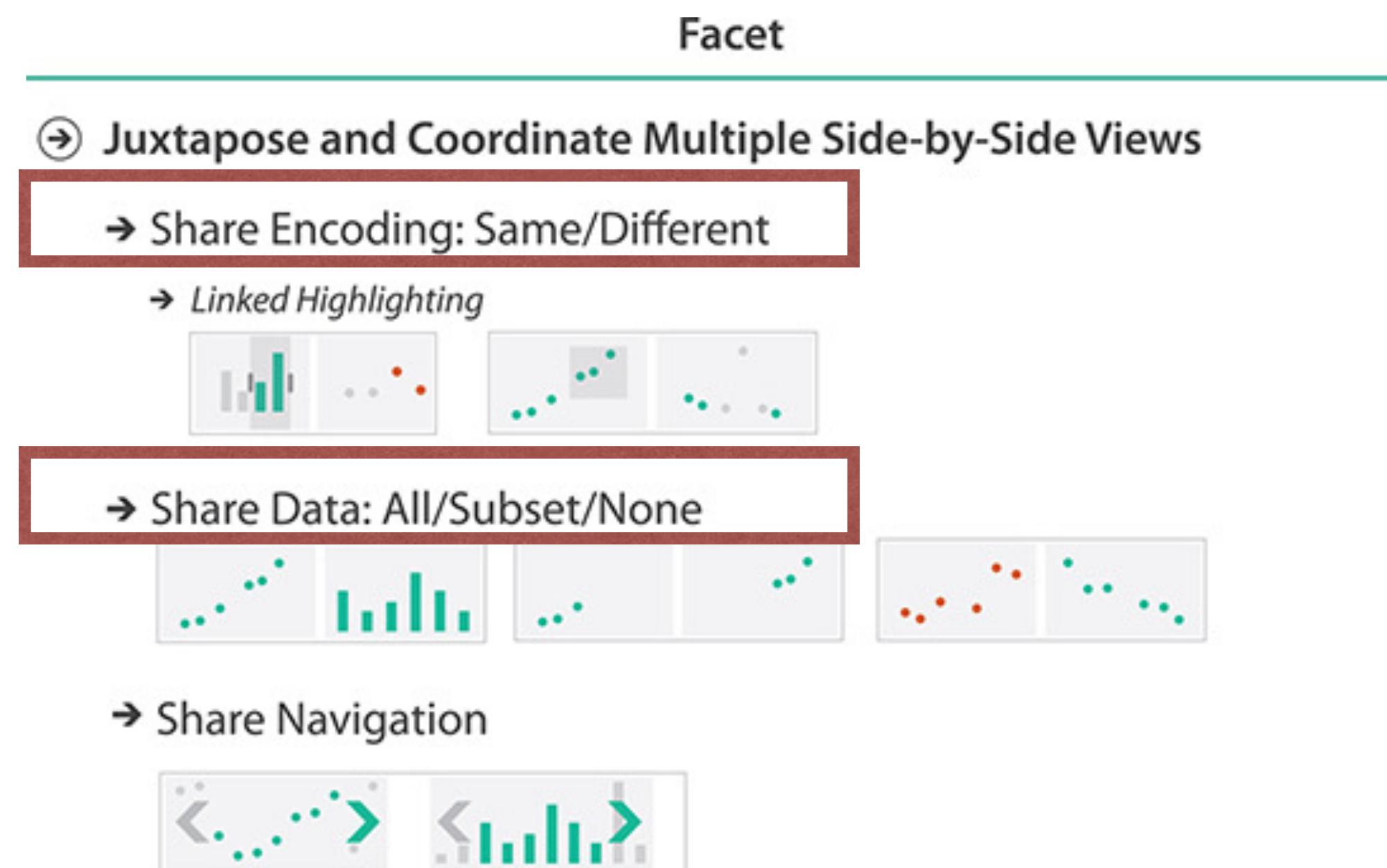
Faceting

Coordination → Multiform



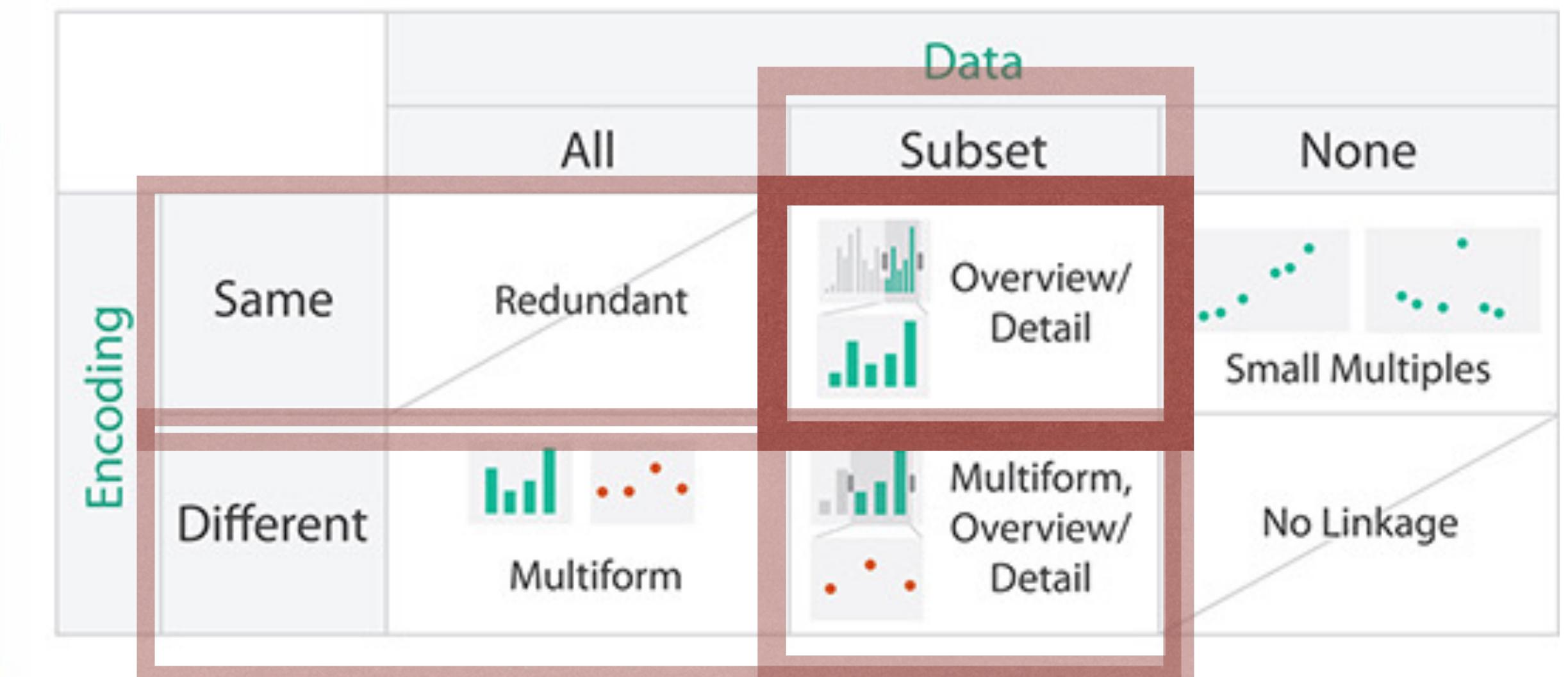
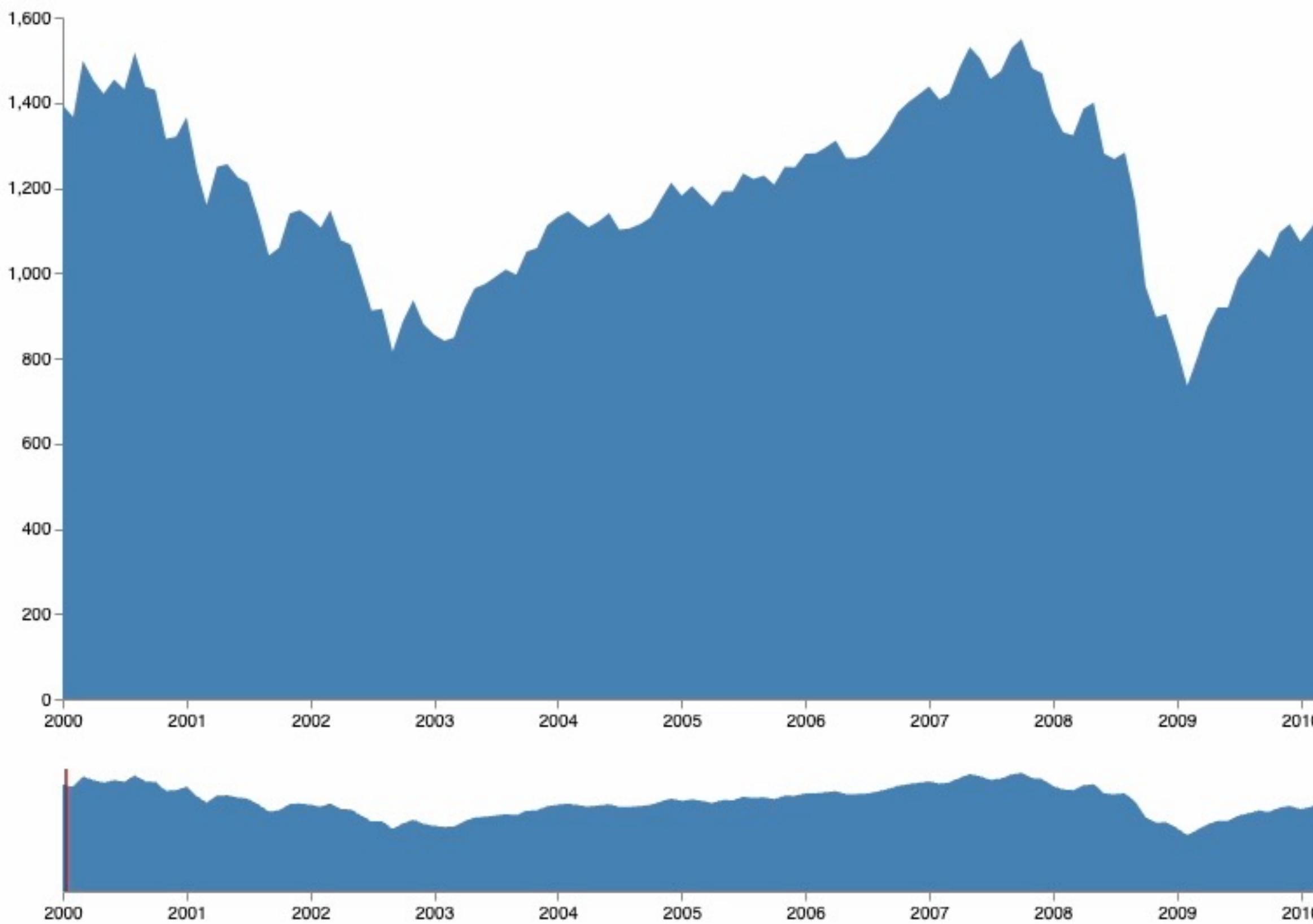
Faceting

Coordinate → Overview/Detail



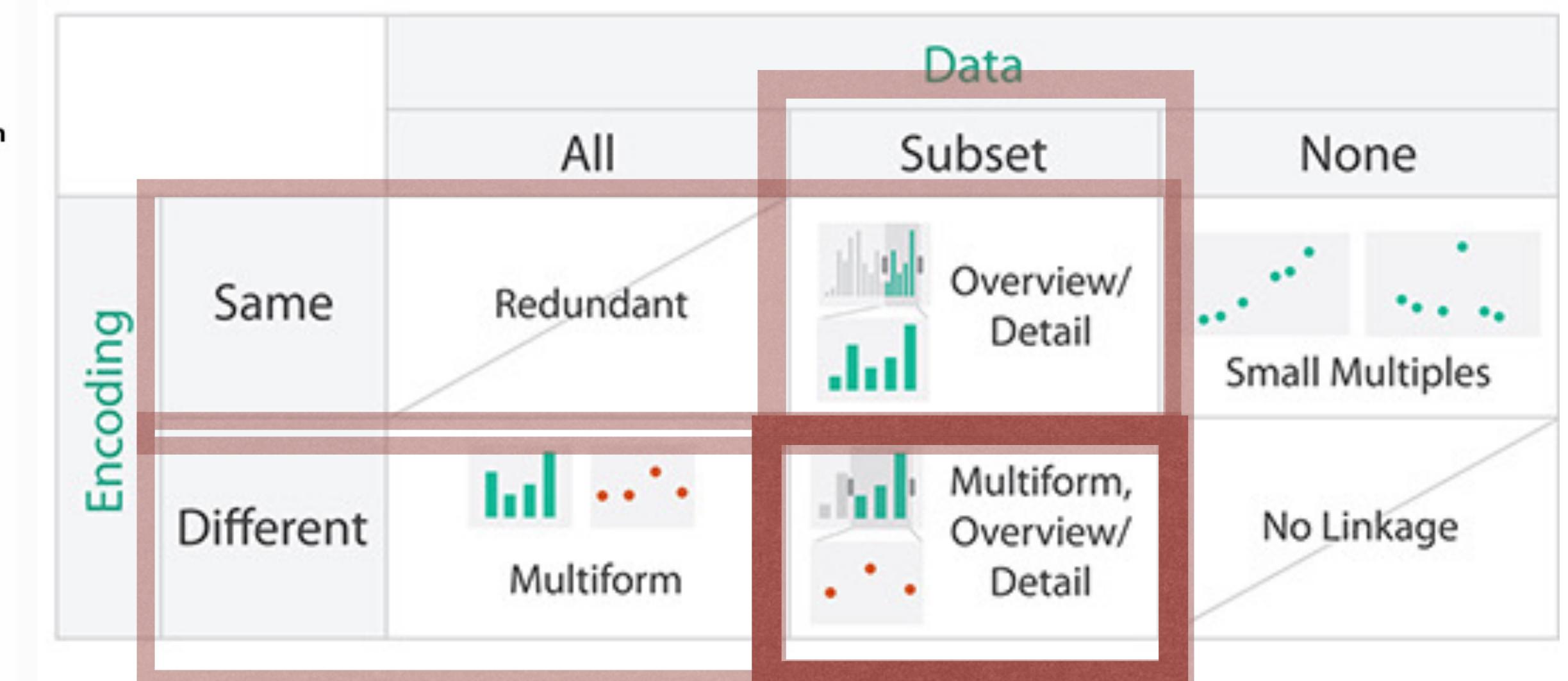
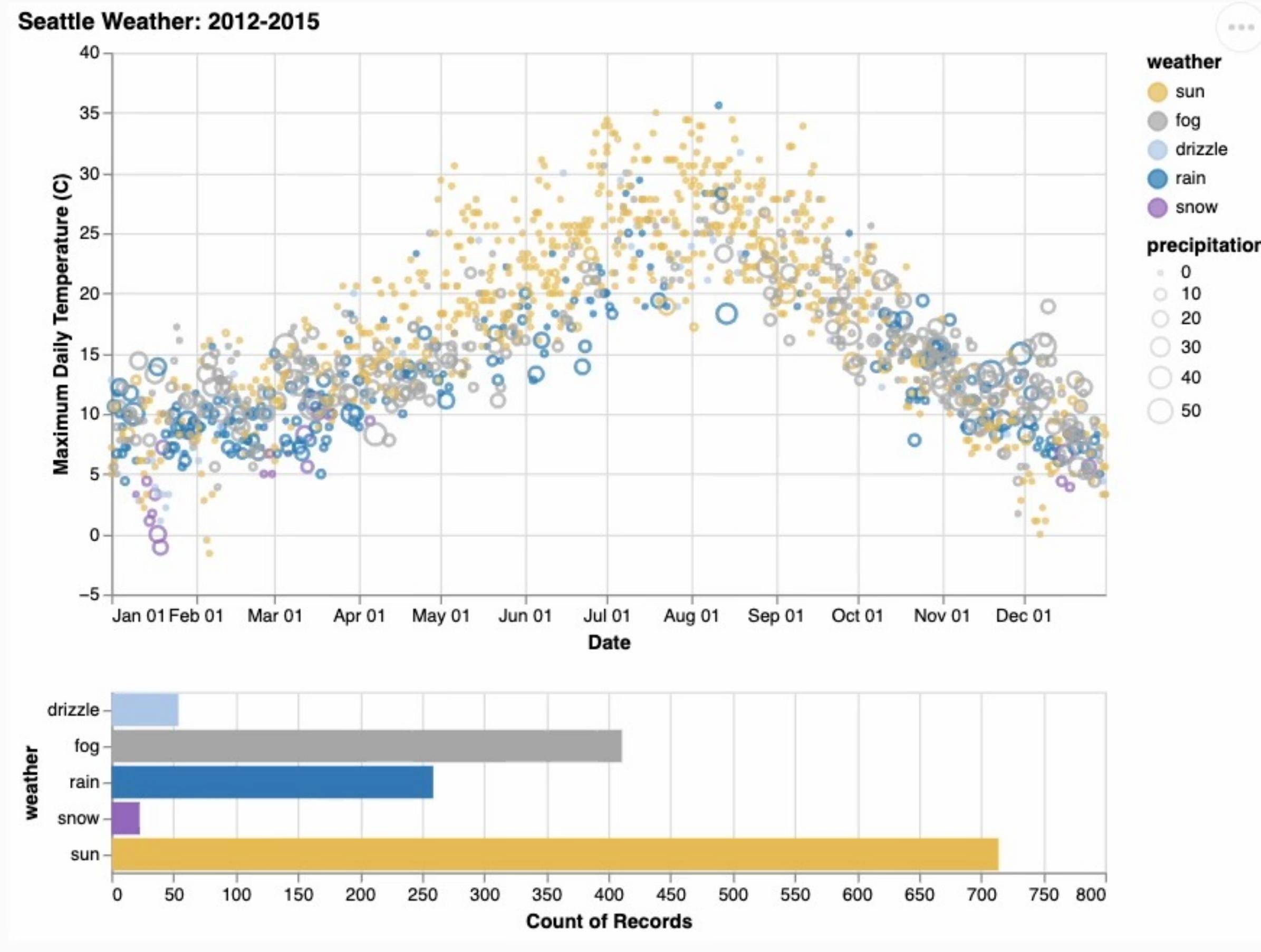
Faceting

Coordinate → Overview/Detail

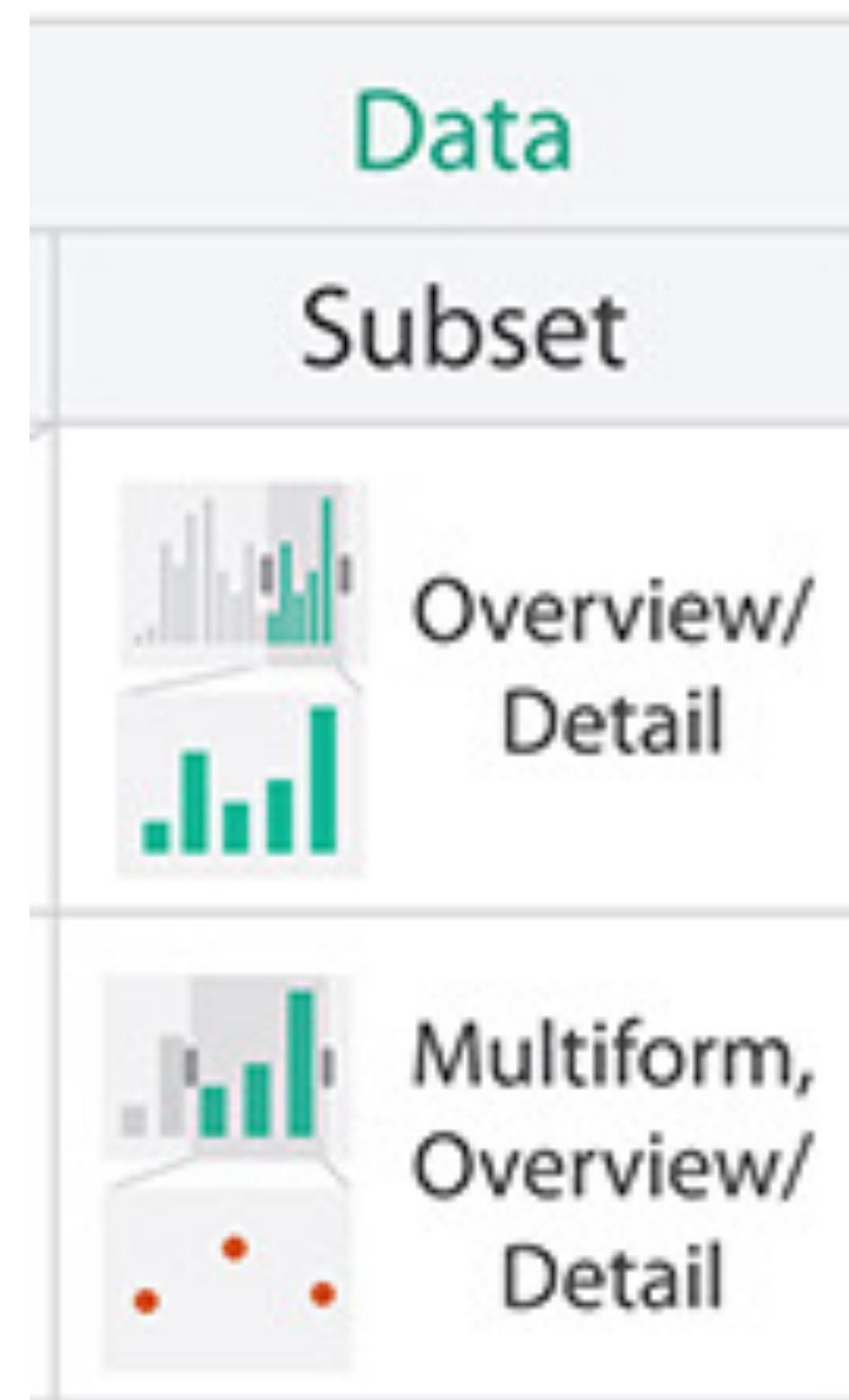


Faceting

Coordinate → Overview/Detail



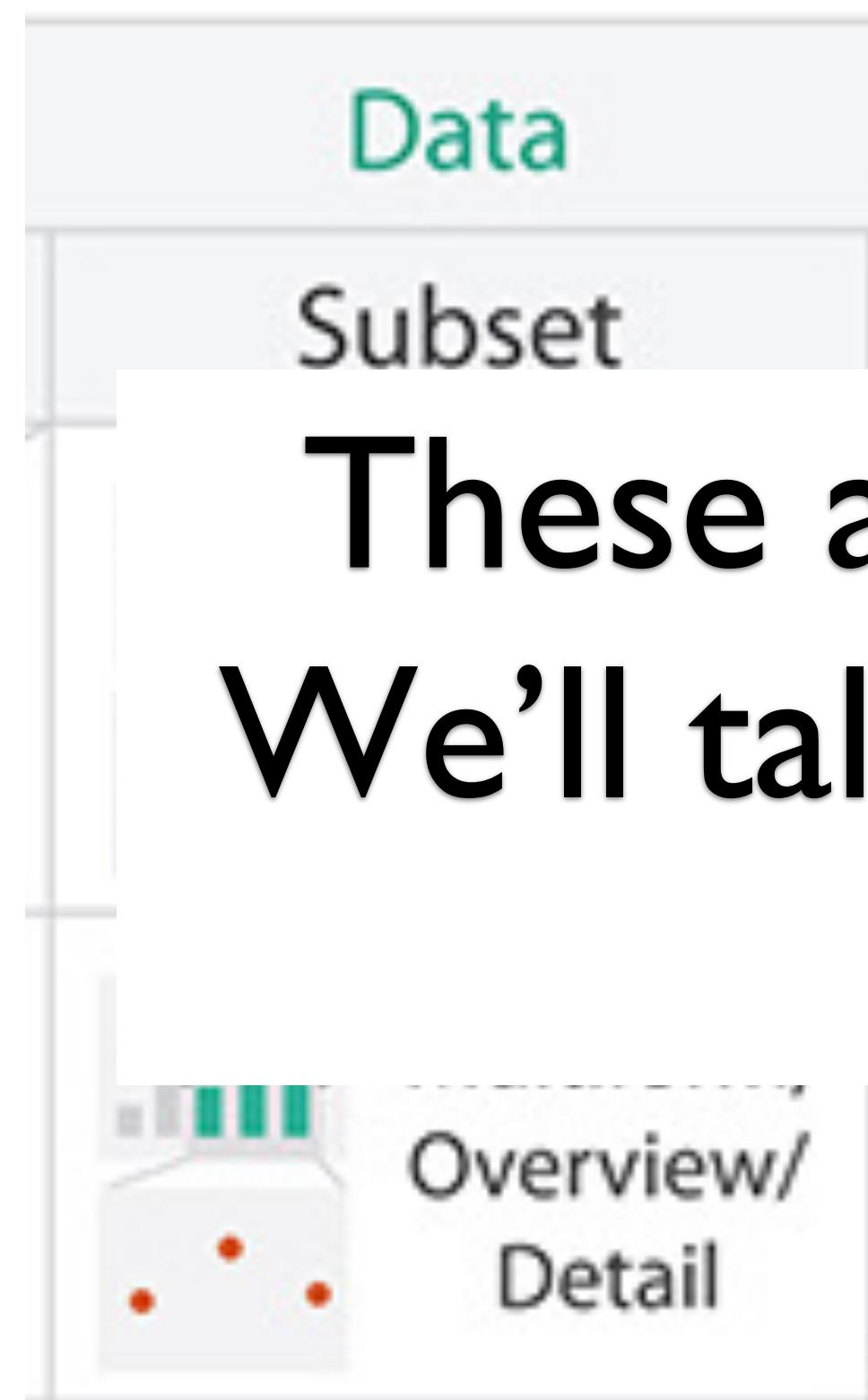
Overview/Detail



Overview first, zoom and filter, then details-on-demand
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- Ben Shneiderman

Overview/Detail



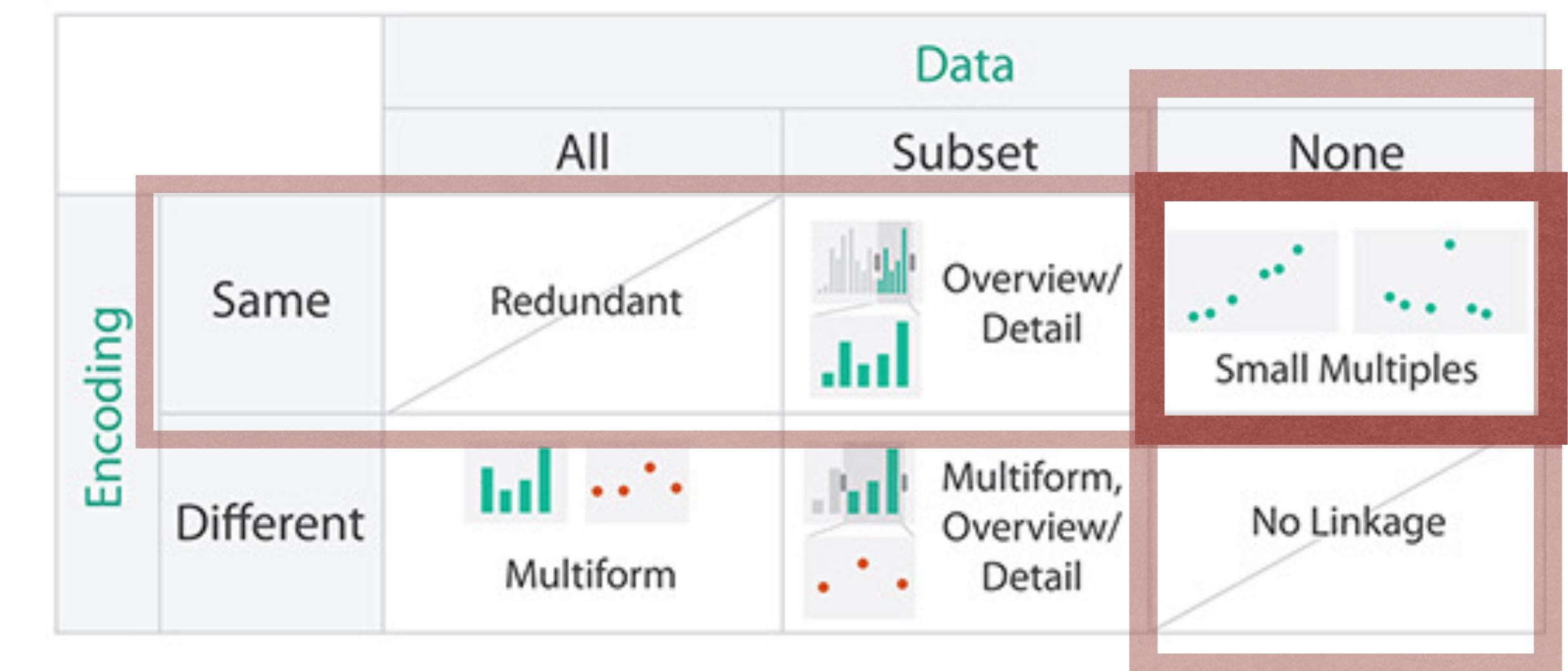
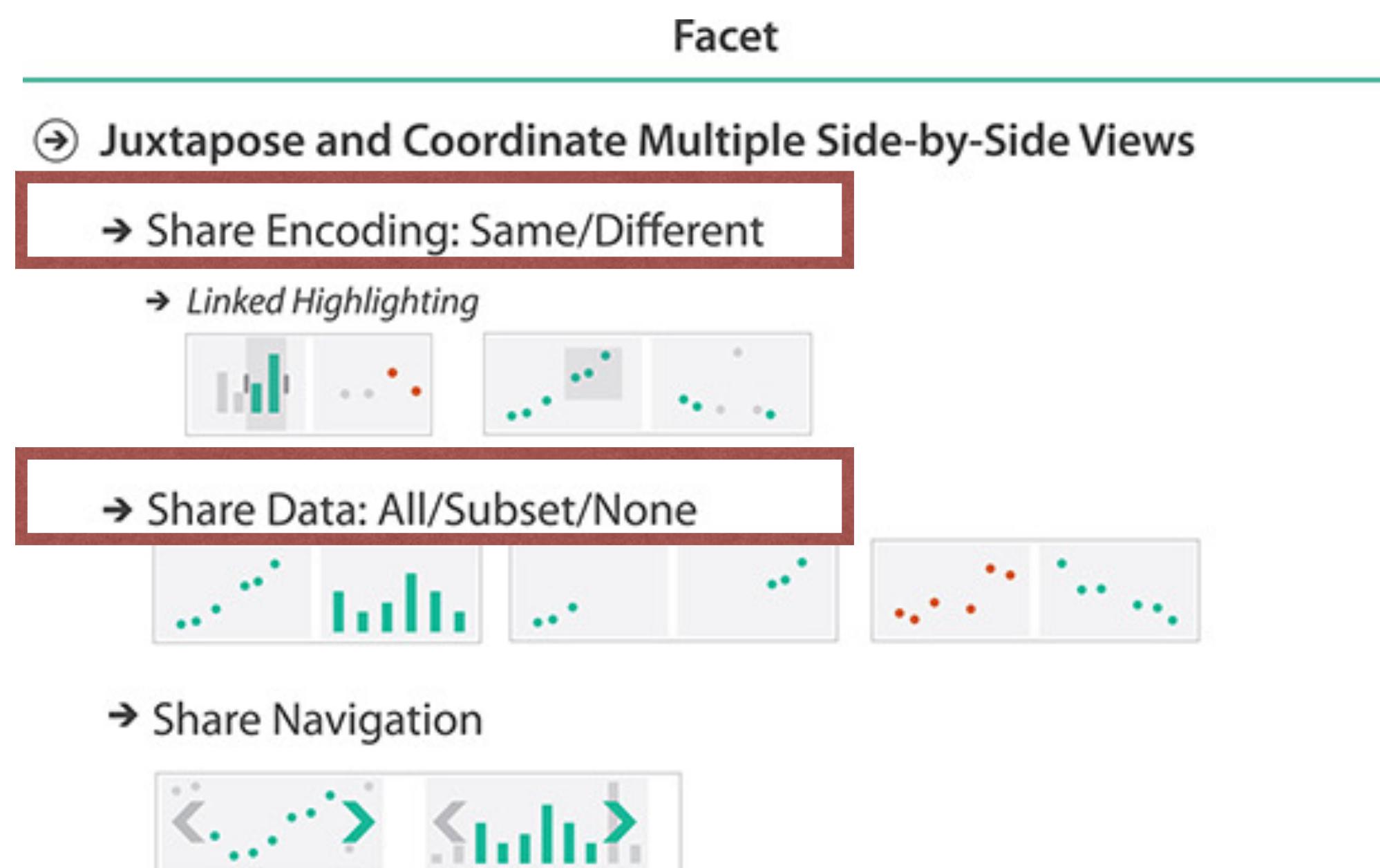
**These are Focus + Context Designs.
We'll talk more about this approach in
future lectures.**

OVERVIEW FIRST, ZOOM AND FILTER, THEN DETAILS-ON-DEMAND

- Ben Shneiderman

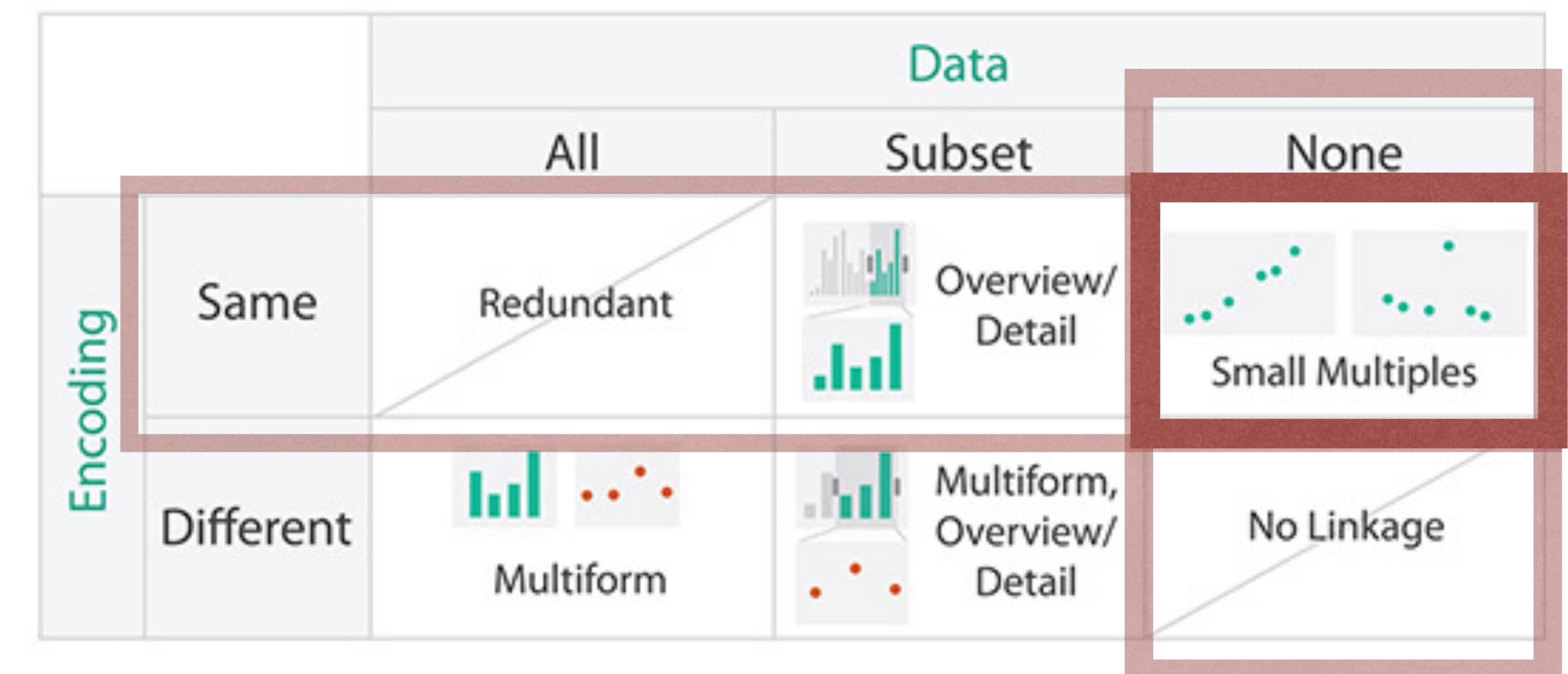
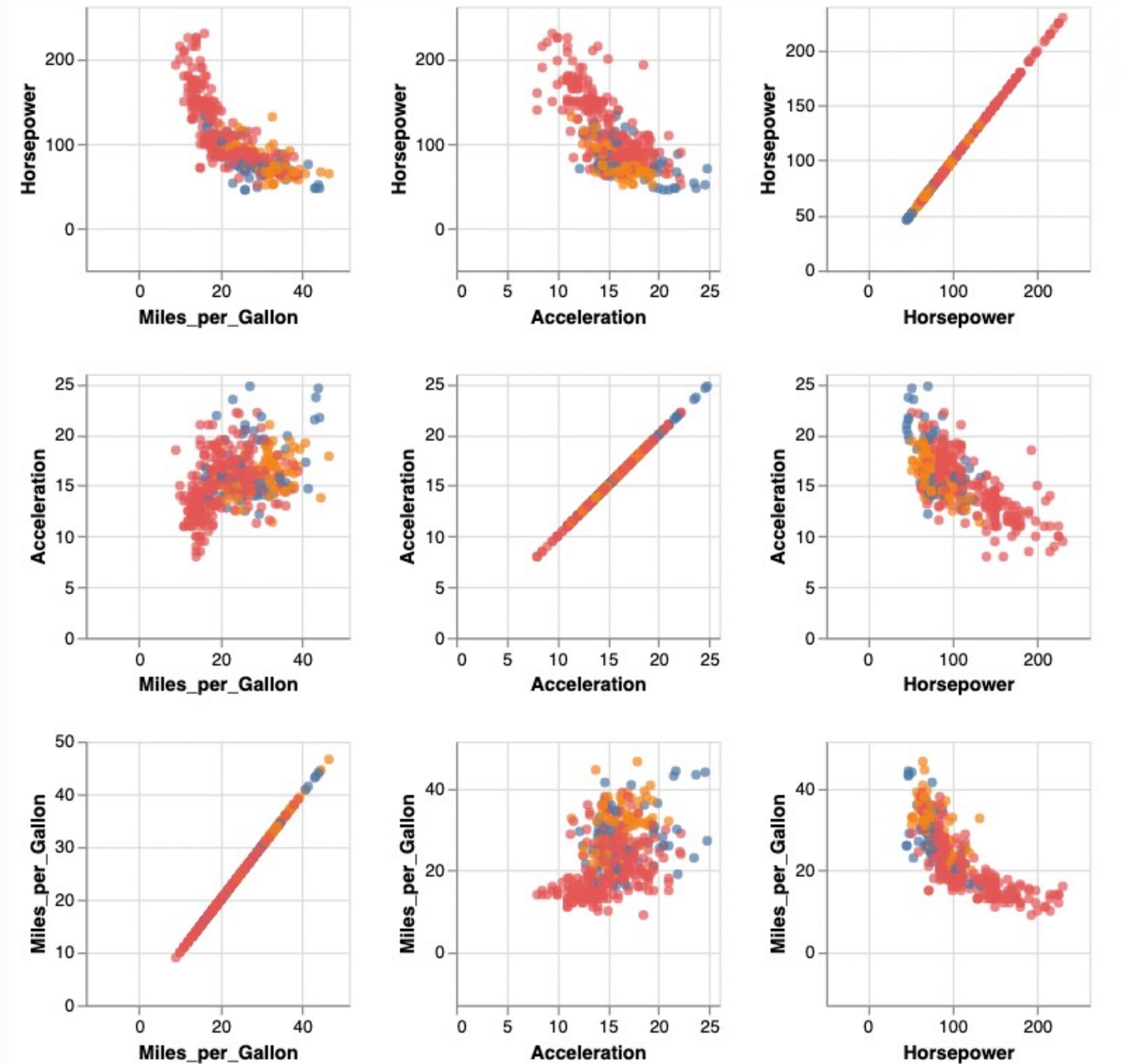
Faceting

Coordinate → Small Multiples



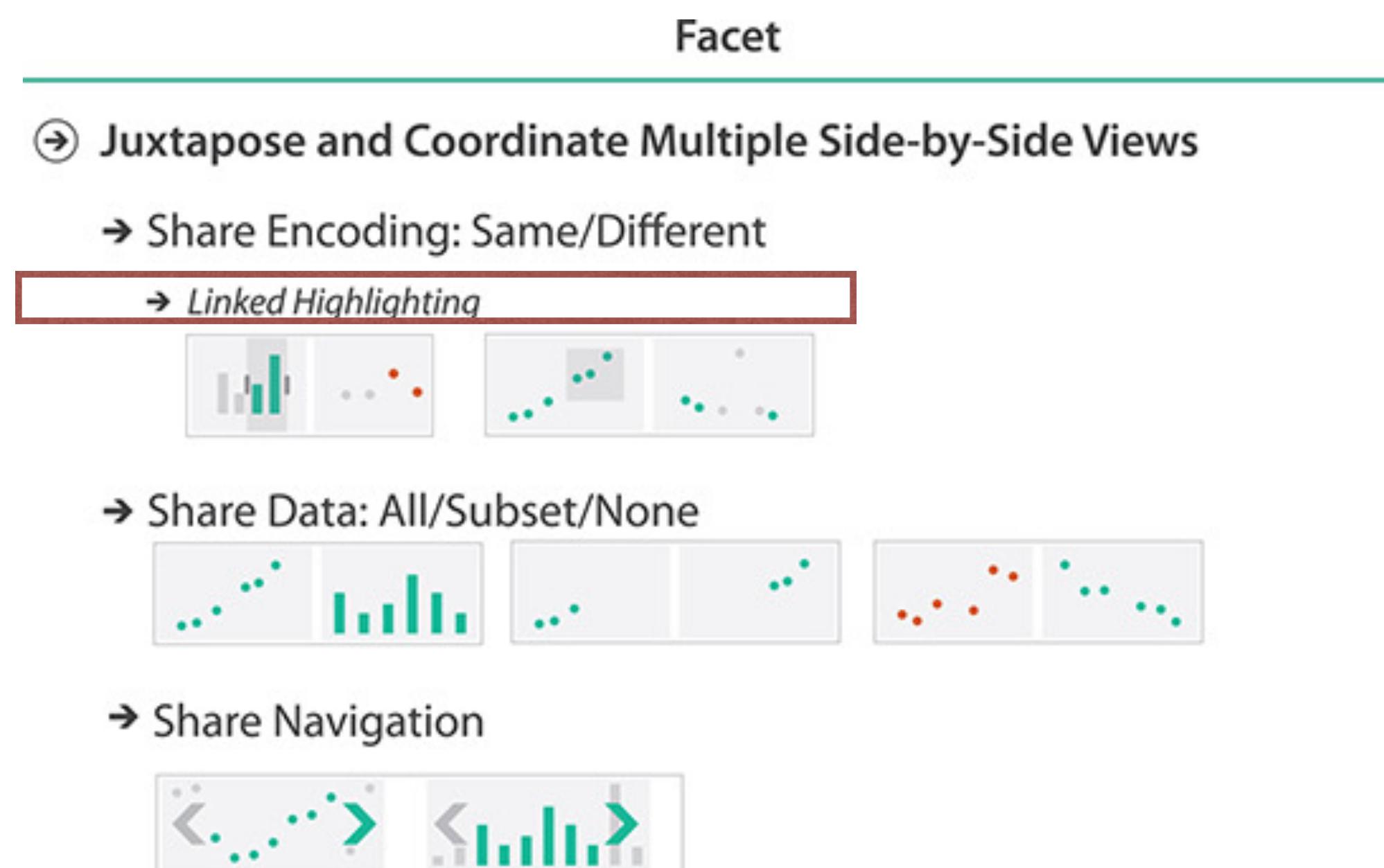
Faceting

Coordinate → Small Multiples



Faceting

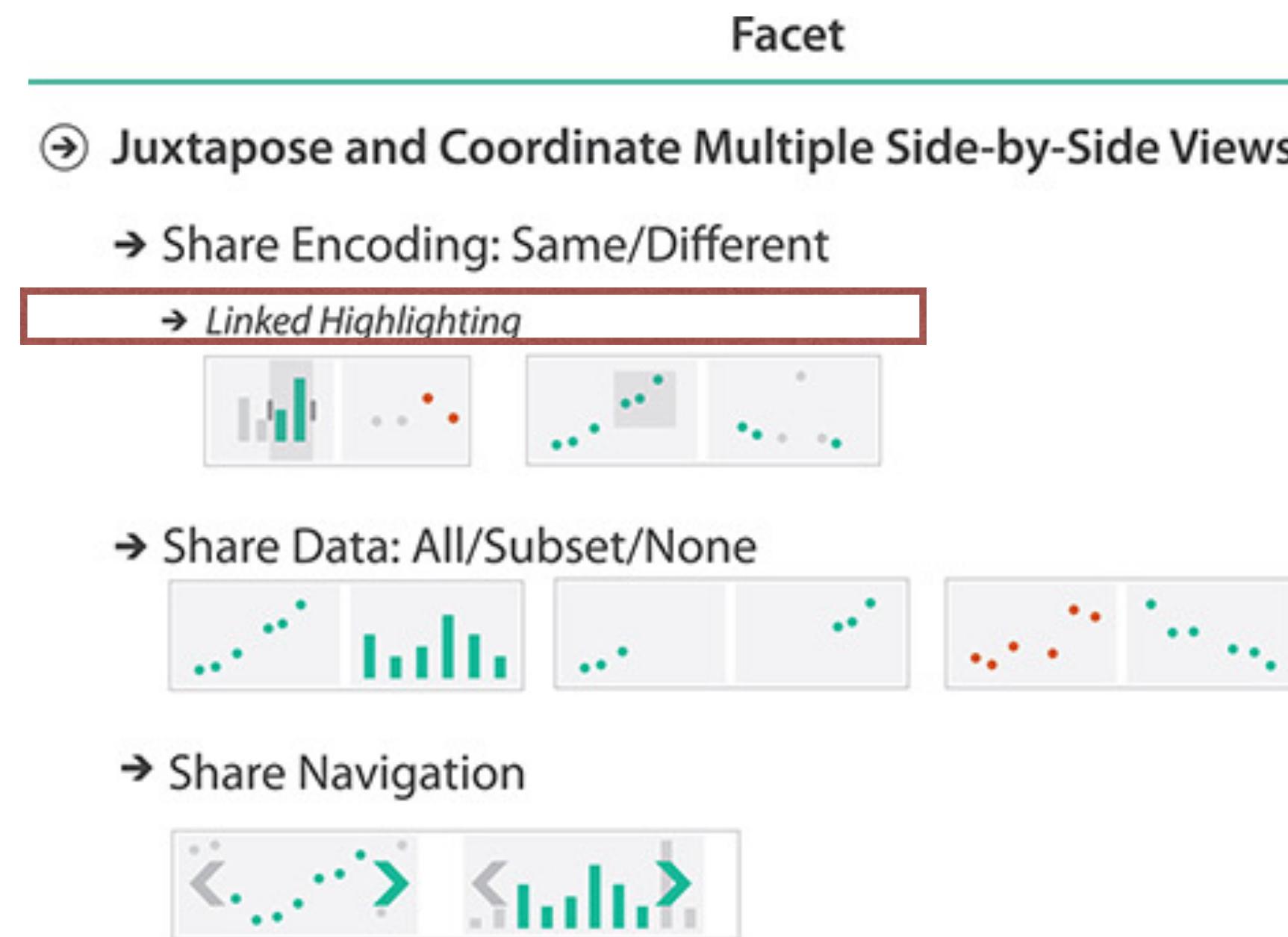
Coordinate → Linked Highlighting



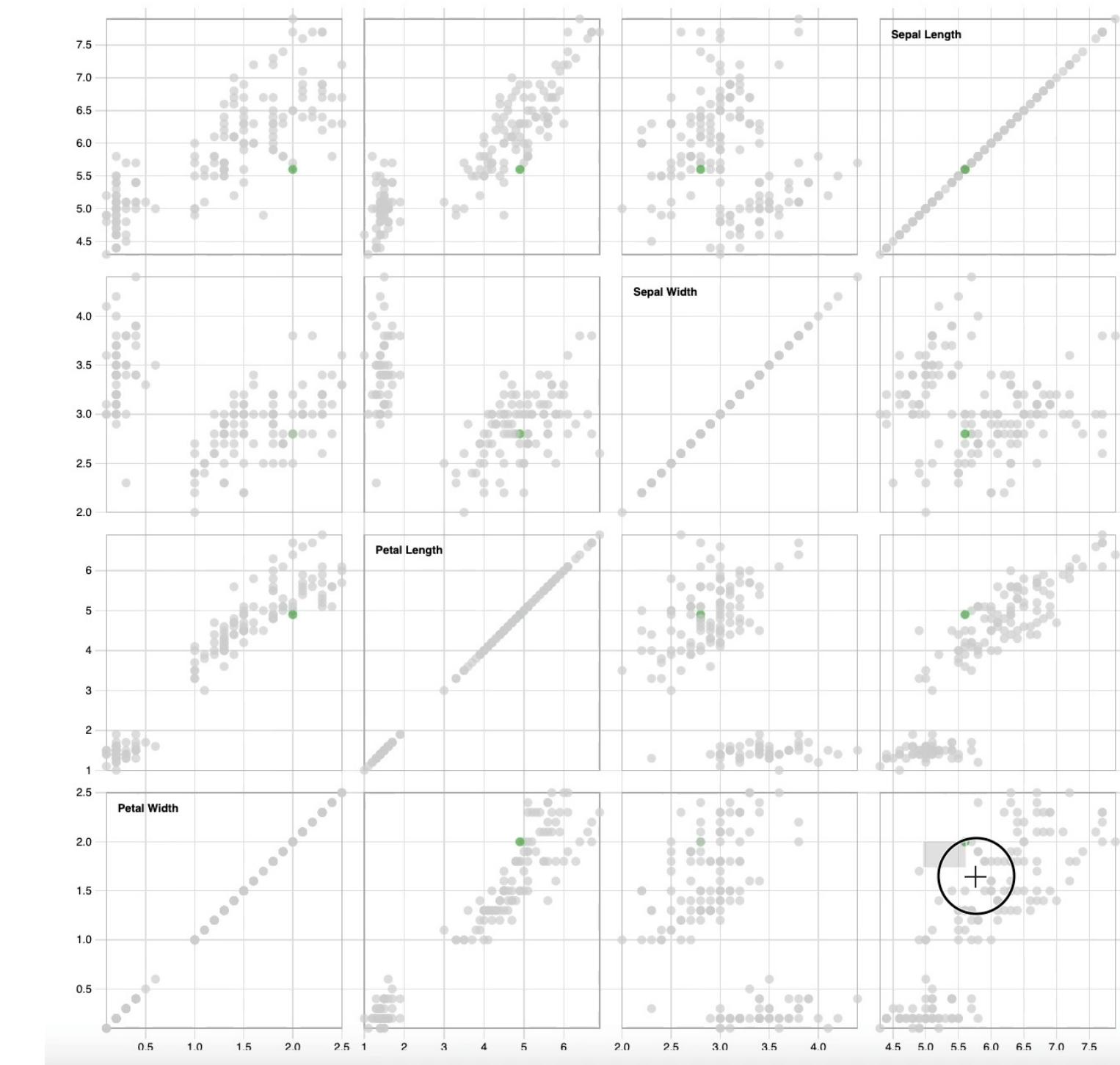
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Encoding	Same	Redundant	 Overview/ Detail	 Small Multiples
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Brushing and Linking

Coordinate → Brushing and Linking



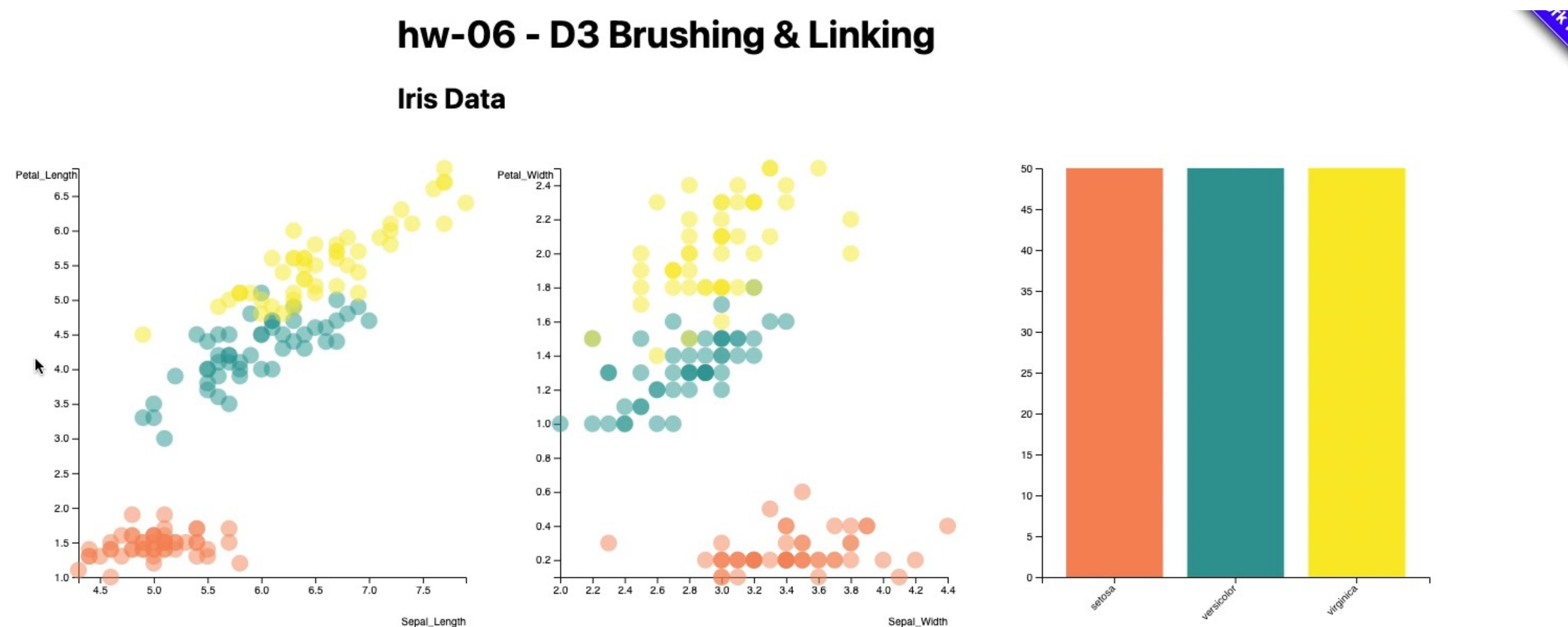
Scatterplot Matrix Brushing



<https://bl.ocks.org/mbostock/4063663>

Brushing and Linking

Coordinate → Brushing and Linking



Navigation

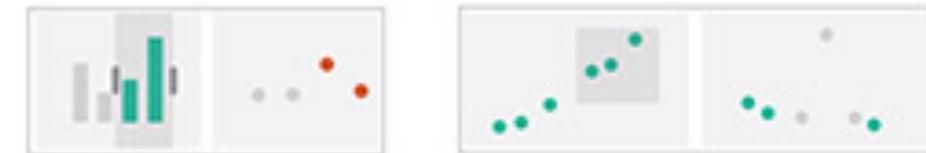
Coordinate

Facet

→ Juxtapose and Coordinate Multiple Side-by-Side Views

→ Share Encoding: Same/Different

→ *Linked Highlighting*



→ Share Data: All/Subset/None



→ Share Navigation



Navigation

Coordinate

Facet

④ Juxtapose and Coordinate Multiple Side-by-Side Views

→ Share Encoding: Same/Different

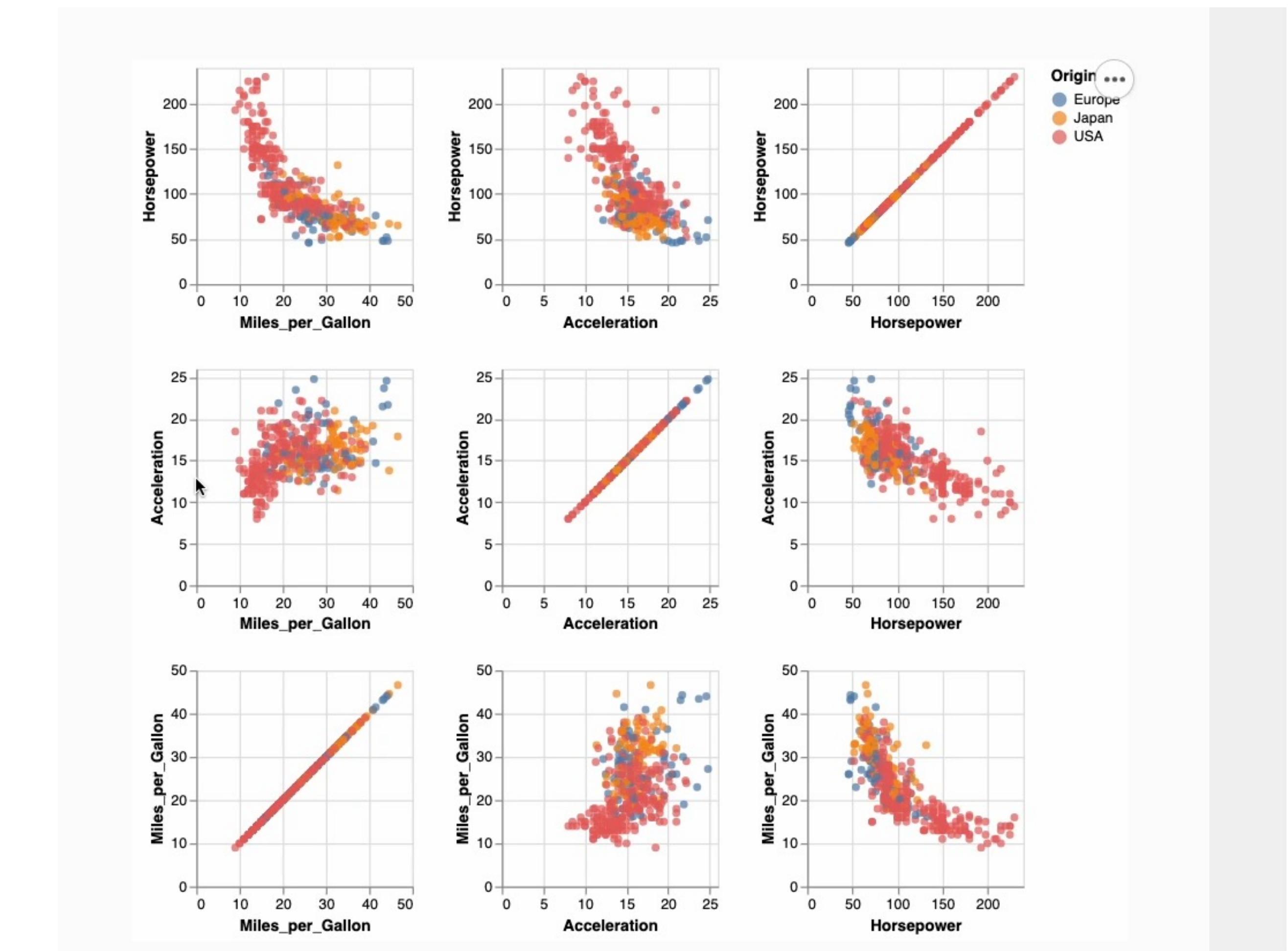
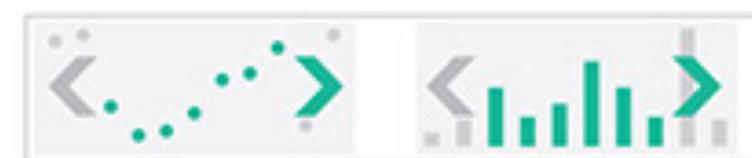
→ *Linked Highlighting*



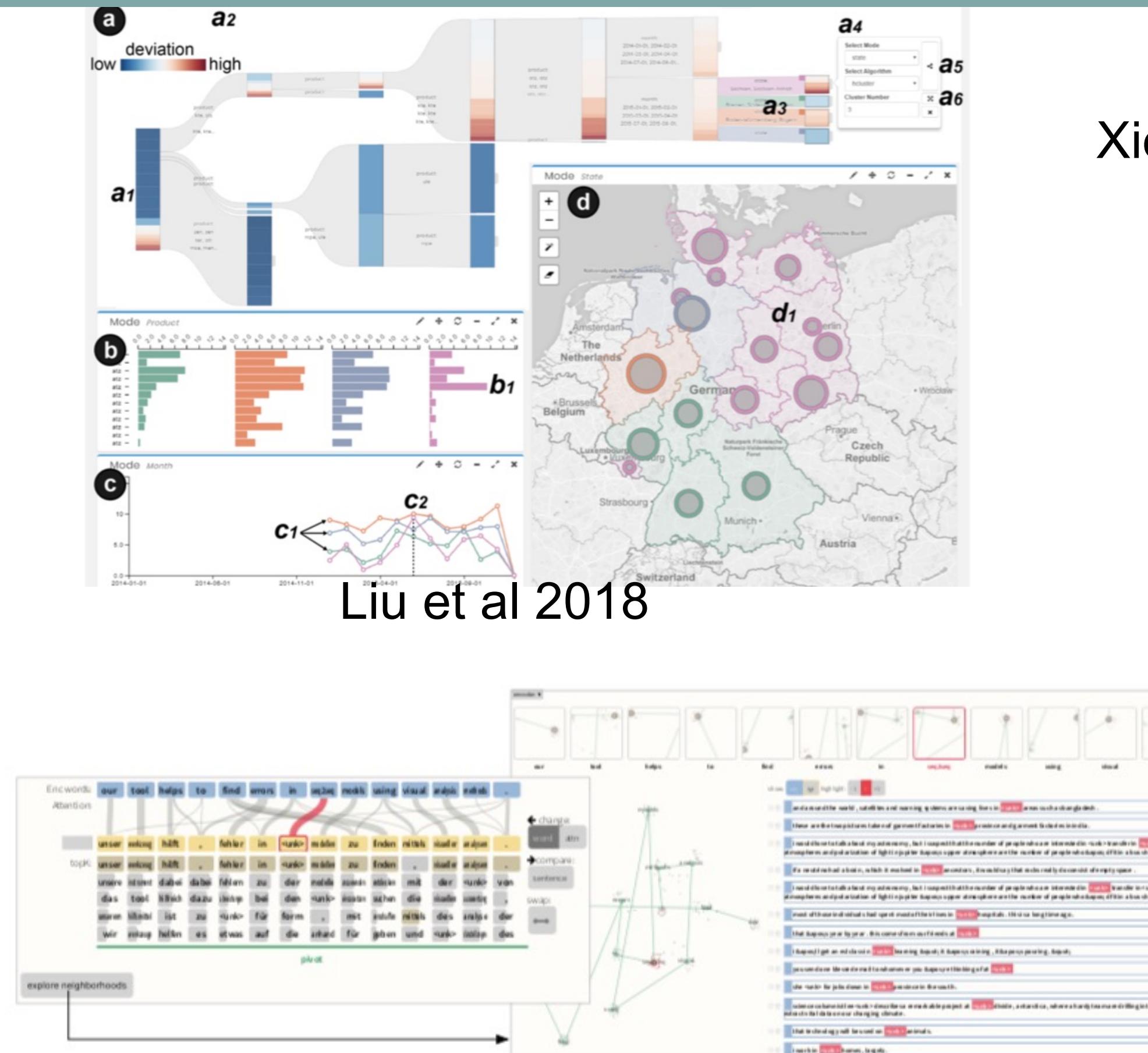
→ Share Data: All/Subset/None



→ Share Navigation

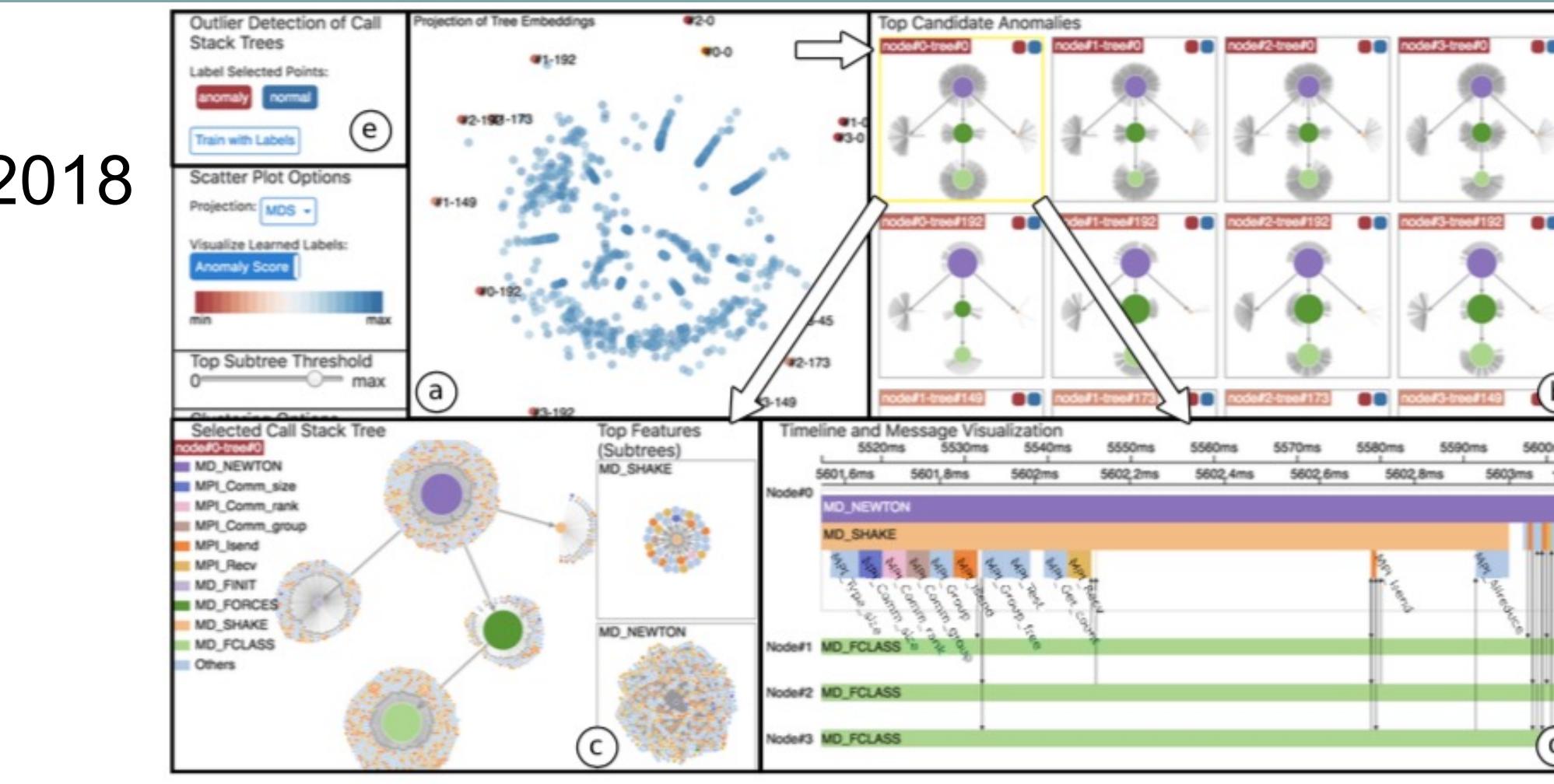


Caveats



Strobelt and Gehrmann et al 2018

Xie et al 2018



Wang et al
2018



Let's take a break! Stretch, go for
a walk, be social ☺
Be back here in 10 mins.

Summary

Today we:

- Reviewed Interaction
- Reviewed Faceting

ic-10 is DUE today.

hw-06 is DUE before next class.