# Which Visualization?

# A Quick Reference

You have the following data (sample): **Discrete Categories**,

Ordered categories, and Continuous Metrics

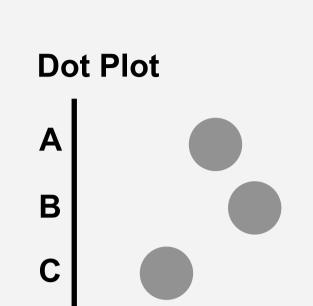
Here's how to plot them

Categories		Ordered Ca	ats	Continuous	Metrics		
City	Airline	Class	PriceBracket	Month	Distance	FlightTime	Price
Alphaville	XeroTrip	Coach	\$	1	300	120	250
Betastan	YoloFly	Business	\$\$	2	500	185	1,525
Chicago	ZeusAir	First	\$\$\$	3	650	240	4,023
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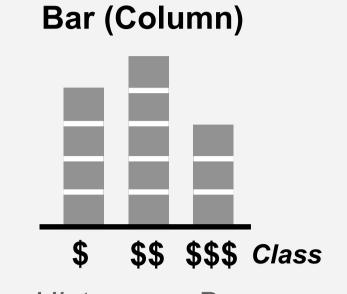
#### Discrete Categories **Ordered Categories Continuous Metrics**



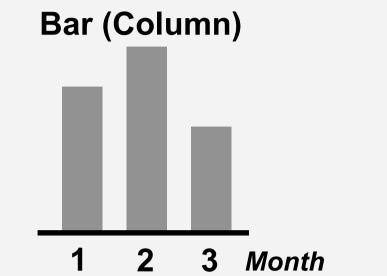
Sideways layout means readable labels



**Benchmark Bar** A В Budget



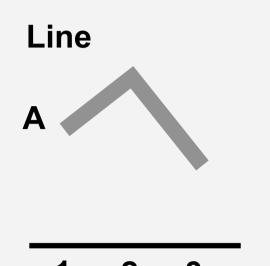
Histogram. Boxes help convey the underlying bins



Increasing values move horizontally. So use Column, not Row

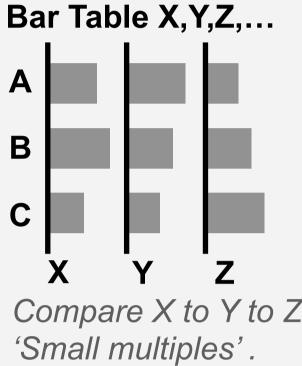


Adds continuity to x-axis.

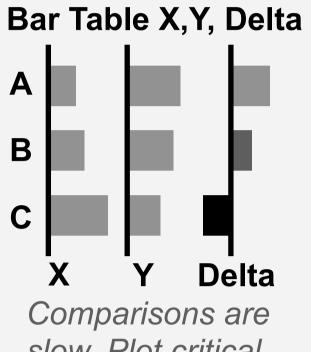


A non-zero y-axis base may be less misleading here

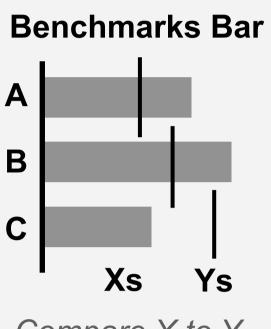




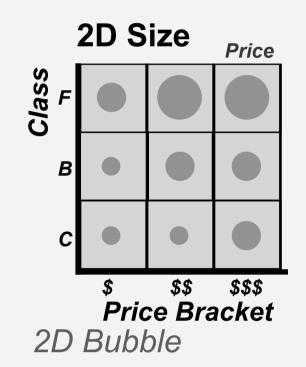
Compare X to Y to Z, Please use this more



slow. Plot critical Deltas explicitly



Compare X to Y. Fancier version called a 'Bullet graph'



2 3 Compare a metric across an ordered category

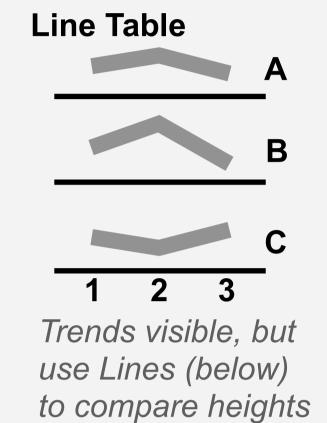
**Bar Table** 

With two values, slope encodes

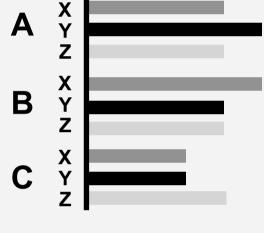
delta

Slopegraph

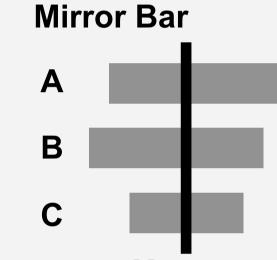




**Interleaved Bar** 



Interleaves two categories into one spatial dimension. Typically better to use Bar Table (above) instead



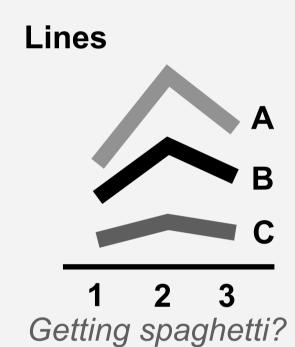
Compare X to Y, leverages human symmetry perception



2D Histogram. Similar in spirit to a bar table, but ordered categories.

**Dual Axis** Price Distance

Use (above) instead. This invites apples-tooranges comparisons



Split into subset or

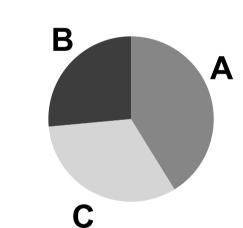
Line-Table (above)

grouped by 1 category

Part-to-Whole,

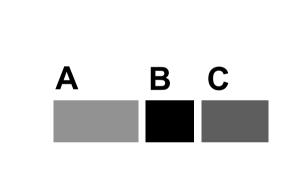


Pie



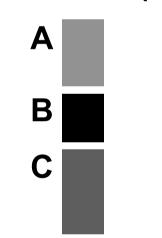
Screams 'Percentages!'

### Stacked Bar (Row)



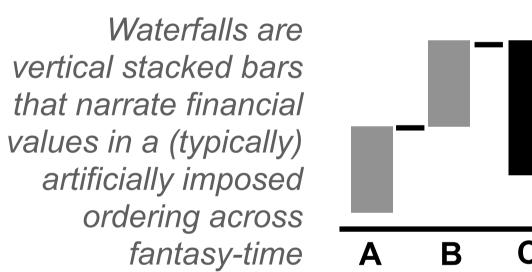
More precise and flex, but less screaming

### Stacked Bar (Col)



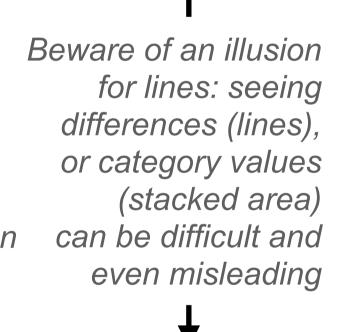
Now I'm standing

### Waterfall

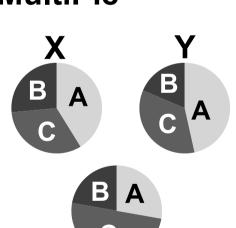




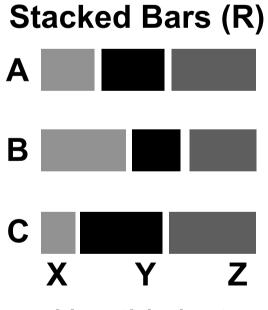
These lines are identical, with equal Y separation at each X slice, but it doesn't look that way!





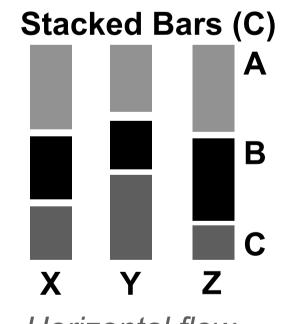


Please don't... (not recommended)

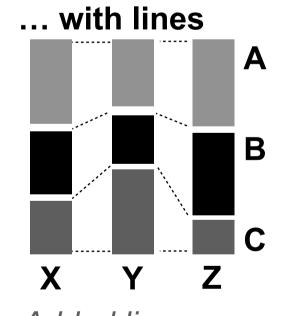


...Use this instead

#### [Mari]Mekko Stacked bars but now with X, Y, Z info. Here XYZ might be absolute values of a market, ABC are company % market shares

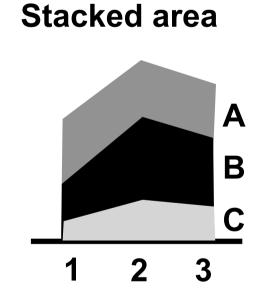


Horizontal flow implies an ordering



Added lines suggest continuity, help depict changes

No legends. Instead, directly label actual values



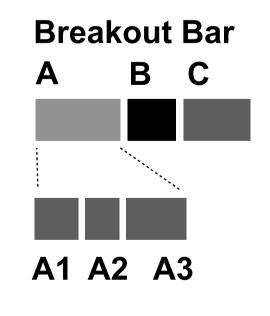
Now it's definitely continuous

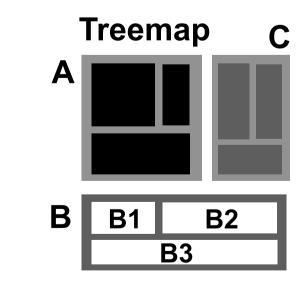
Let's zoom in here. Use different colors. Global at top or left.

Look at this number.

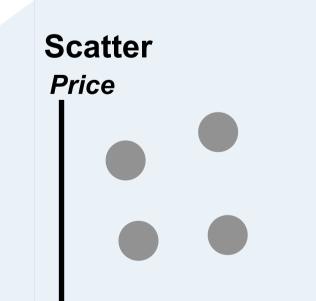
Just look at it.

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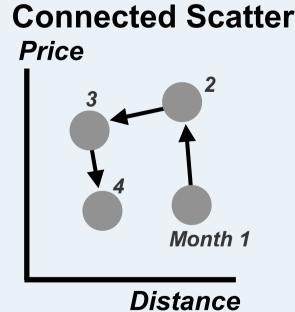


Hierarchy, ~3 levels max of bento boxes going all Inception within other bentos. Size+Color better code different metrics. Typically <u>misused</u>. 95% sure you actually wanted a Bar Table (above)

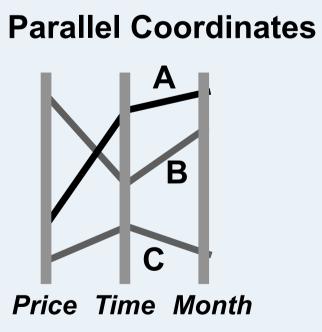


An elegant graph, from a <u>civilized age</u>

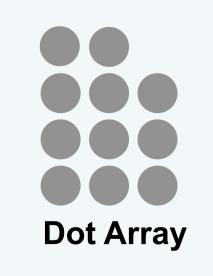
Month



A scatterplot, connected into a journey over time



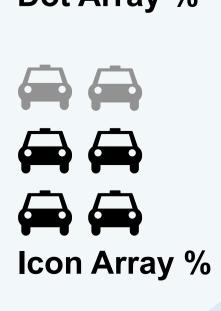
Beyond 2 perpendicular Cartesian axes, Parallel format allows more axes

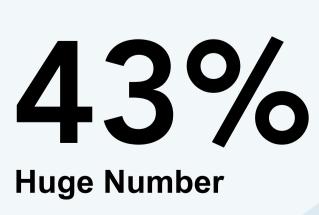


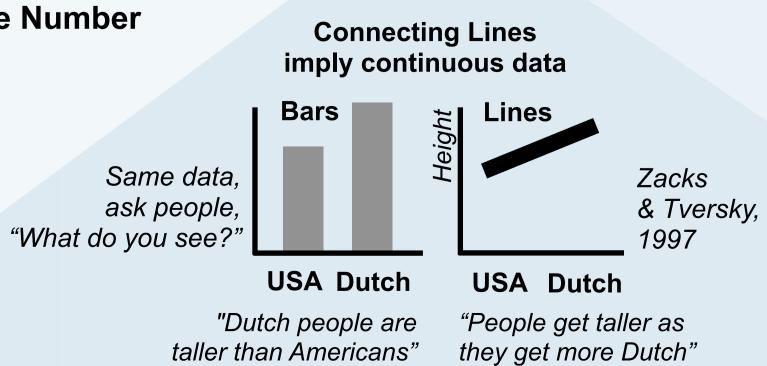
**Icon Array** 

(ISOTYPE)

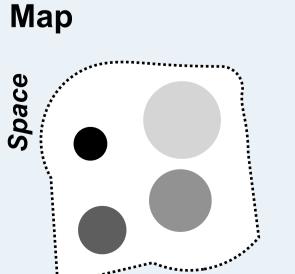
**Dot Array %** 









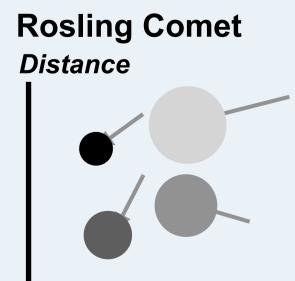


Space Maps and Roslings share the same DNA Color = Flight Time Size = Price

### **Hans Rosling Scatter** Distance



Watch Rosling's TED talk. Take XY scatter and adds two more metrics (color and size), and then moves in time



Show two or more X+Y history values for comparison over time

Month