Which Visualization?

A Quick Reference

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

Ordered categories, and Continuous Metrics

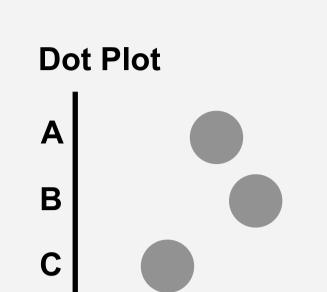
Here's how to plot them

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
	• • •	• • •	• • •	• • •	• • •	• • •	• • •

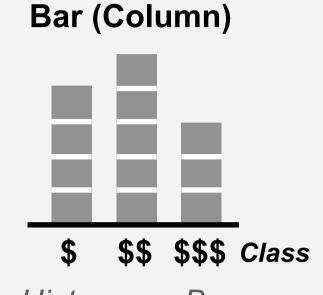
Discrete Categories **Ordered Categories Continuous Metrics**



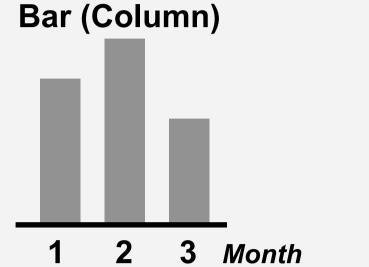
Sideways layout means readable labels



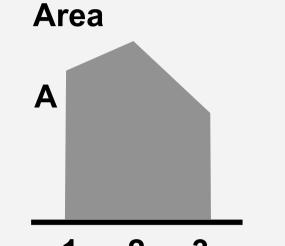
Benchmark Bar Α В **Budget**



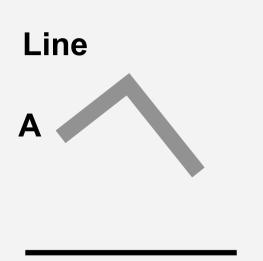
Histogram. Boxes help convey the underlying bins



Increasing values move horizontally. So use Column, not Row

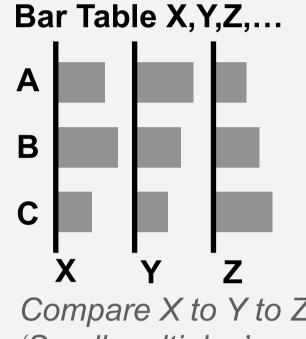


Adds continuity to x-axis.

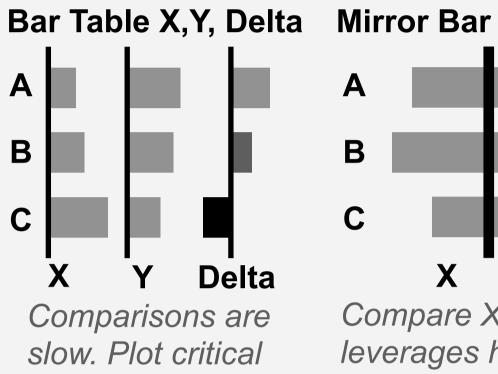


A non-zero y-axis base may be less misleading here

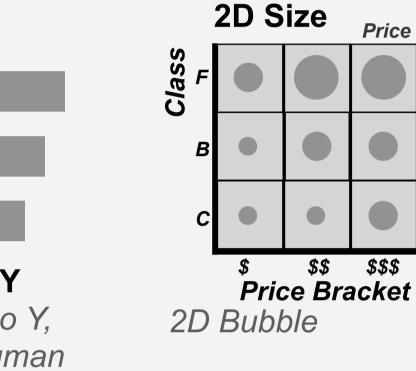
1 2 3

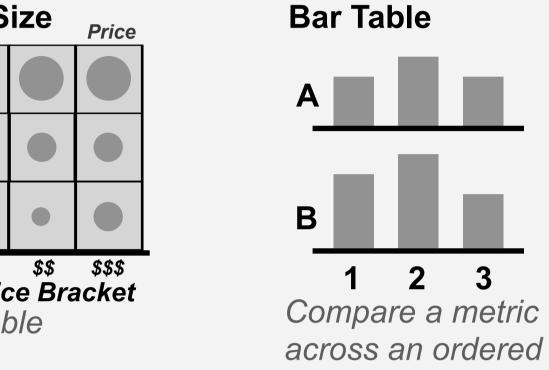


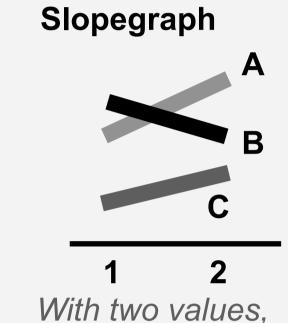
Compare X to Y to Z, 'Small multiples'. Please use this more



B Compare X to Y, leverages human Deltas explicitly symmetry perception





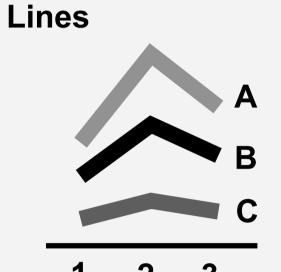


slope encodes

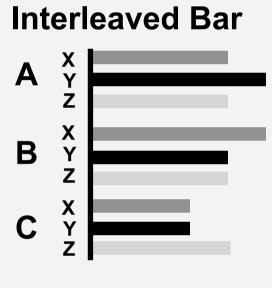
delta



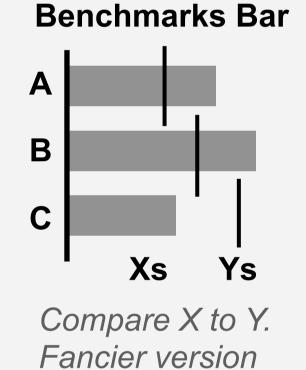
Use (below) instead. Crossings here are salient + meaningless



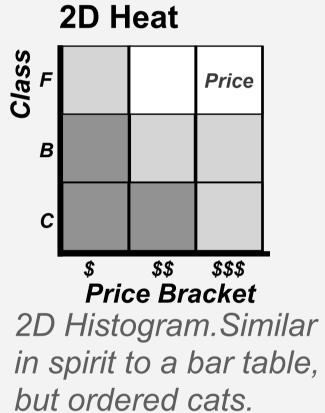
Getting spaghetti? Split into subset or Line-Table (below)

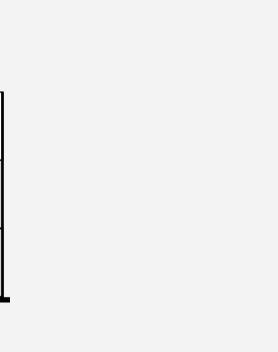


Interleaves two categories into one spatial dimension. Typically better to use Bar Table (above) instead



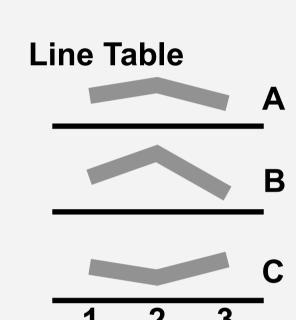
called a 'Bullet graph'





category





Trends visible, but use Lines (below) to compare heights

grouped by 1 category

Pie

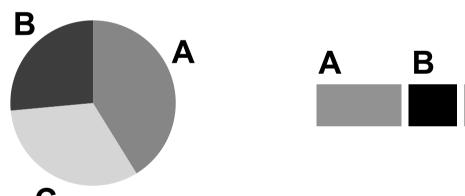
... by 2 categories

Part-to-Whole,

... by 2 categories



Stacked Bar (Row)

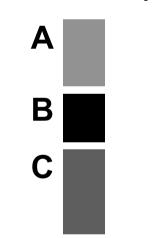


Screams 'Percentages!'

More precise and flex, but less screaming

Stacked Bars (R)

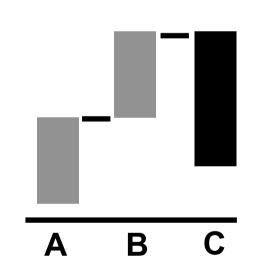
Stacked Bar (Col)



Now I'm standing

Waterfall

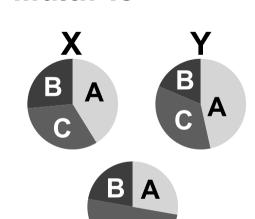
Waterfalls are vertical stacked bars that narrate financial values in a (typically) artificially imposed ordering across fantasy-time



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

Beware of an illusion for these: seeing differences (lines), or category values (stacked area) can be difficult and even misleading

MultiPie

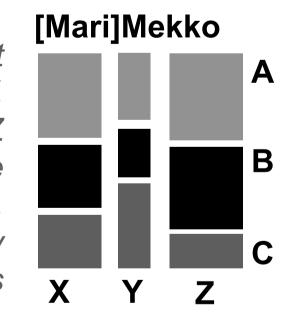


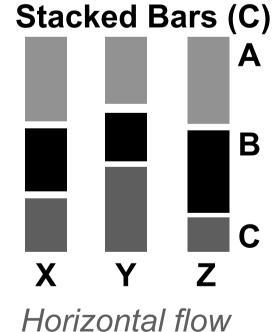
Please don't... (not recommended)

...Use this instead

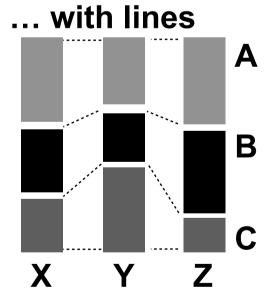
Stacked bars but

now with 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

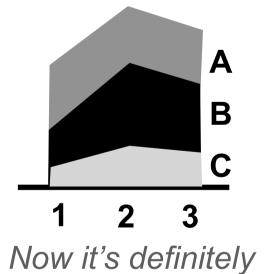
Stacked area

actual values

Instead,

No legends.

directly label

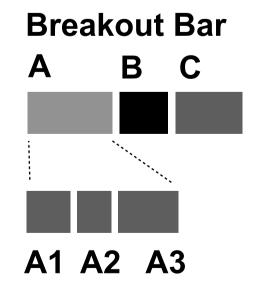


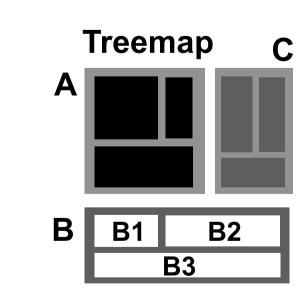
continuous

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

Look at this number.

Just look at it.





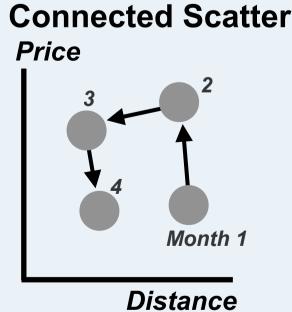
Hierarchy, ~3 levels max of bento boxes going all Inception within other bentos. Size+Color better code different metrics. Typically <u>misused</u>. 95% sure you actually wanted a Bar Table (above)

Scatter **Price**

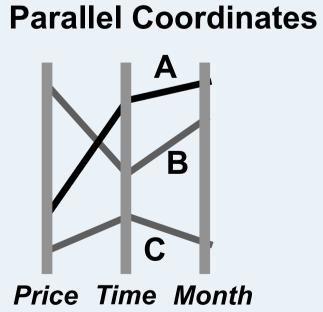
An elegant graph, from a <u>civilized age</u>

Map

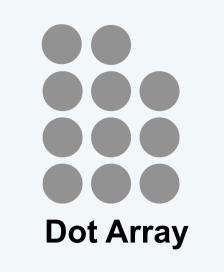
Month



A scatterplot, connected into a journey over time



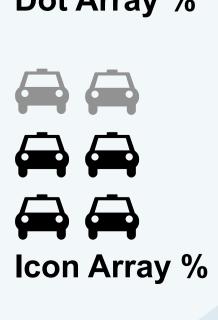
Beyond 2 perpendicular Cartesian axes, Parallel format allows more axes



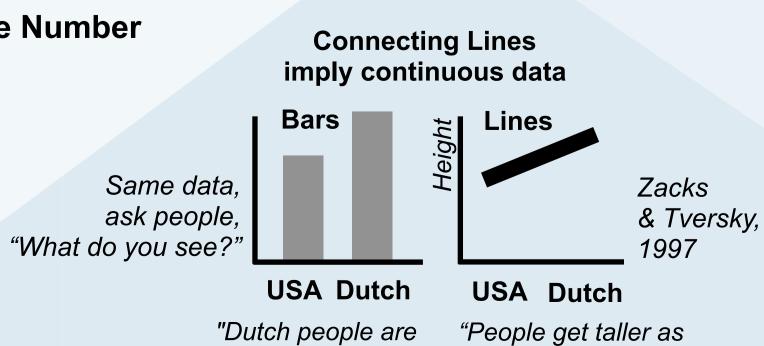
Icon Array

(ISOTYPE)

Dot Array %



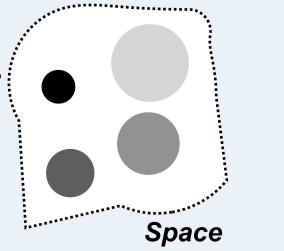




taller than Americans"

Metrics: relationships to other metrics





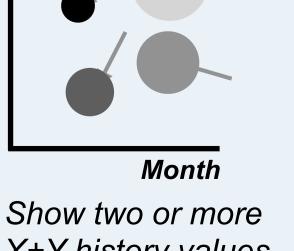
Maps and Roslings share the same DNA Color = Flight Time Size = Price

Hans Rosling Scatter



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

Rosling Comet Distance



X+Y history values for comparison over time

they get more Dutch"