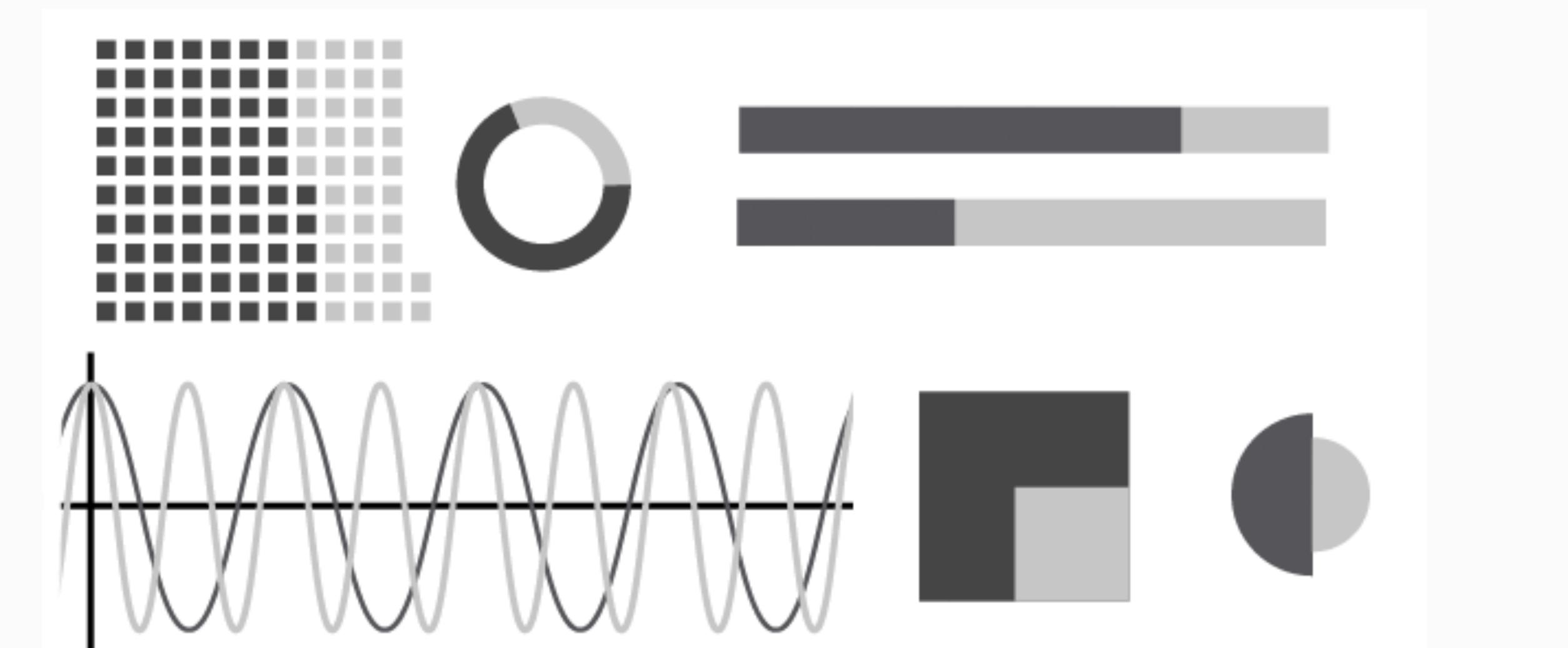


Task Abstraction



The design space

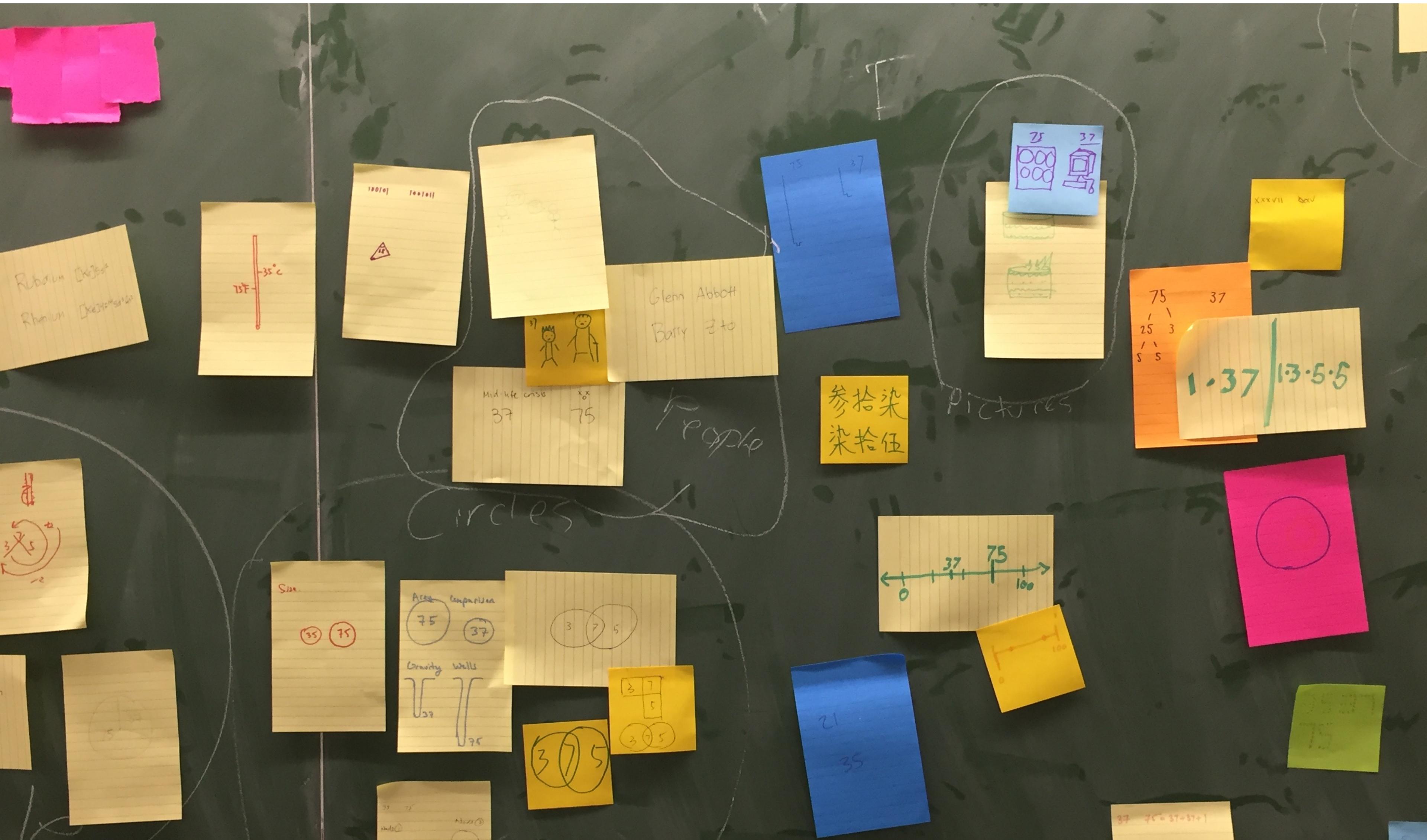


45 Ways to Communicate Two Quantities

 Santiago Ortiz | July 27th, 2012

Back in 2010, I was giving a workshop on interactive data visualization in Lima, Perú, discussing whether a dataset has a unique or at least an ideal way to be visualized. For a simple data structure — a list of some

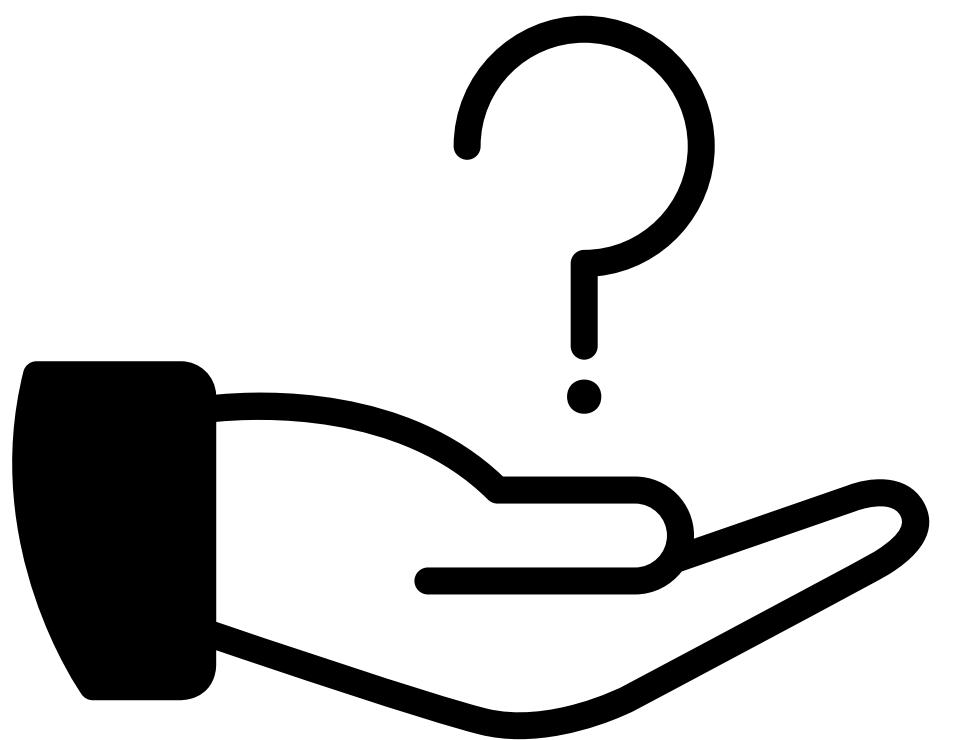
Task abstraction & the design space



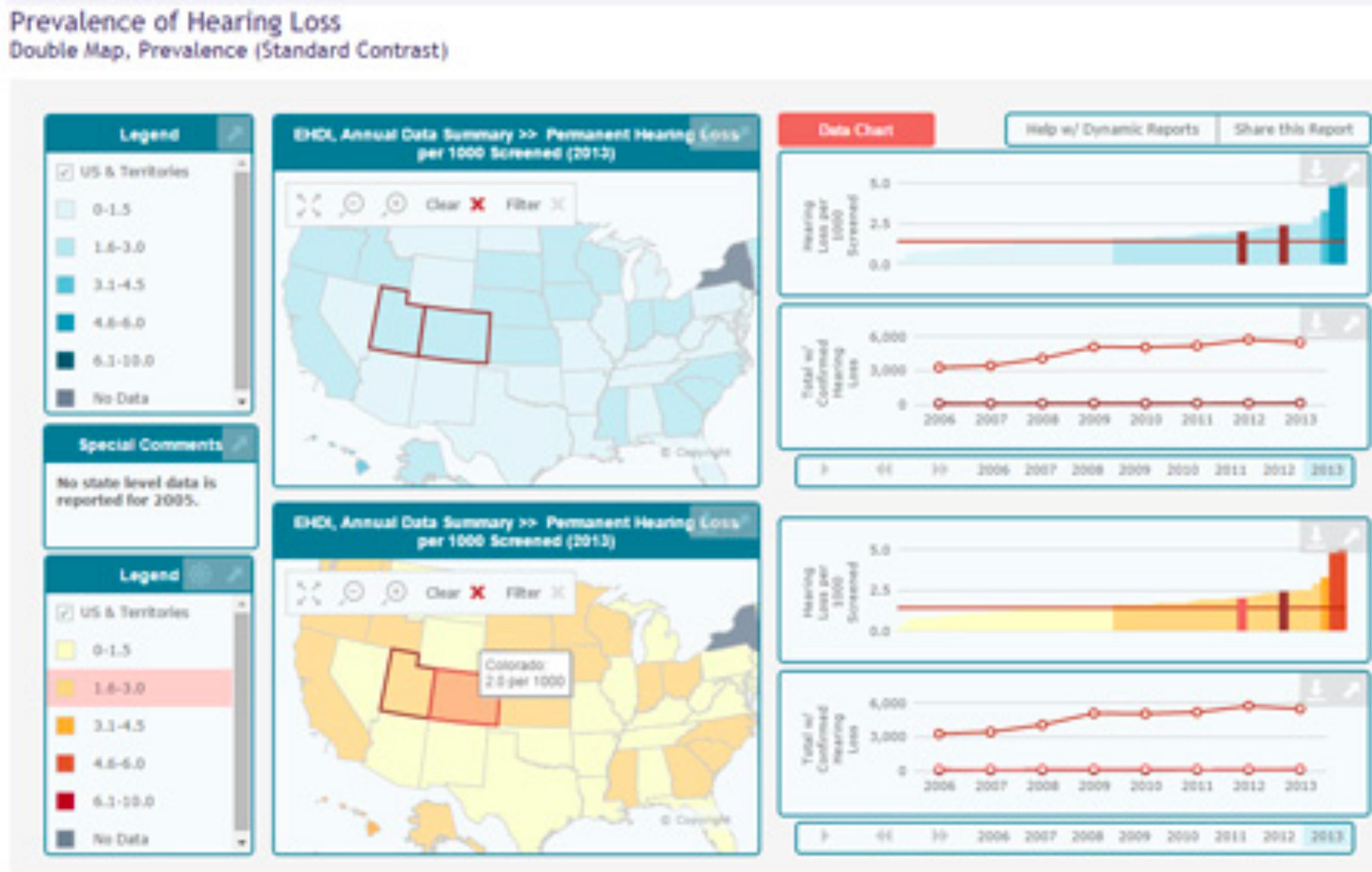
Task abstraction: ask “why”

Any given visualization can be built
for a variety of purposes.

Recall:
exploratory and expository vis



Case: the CDC



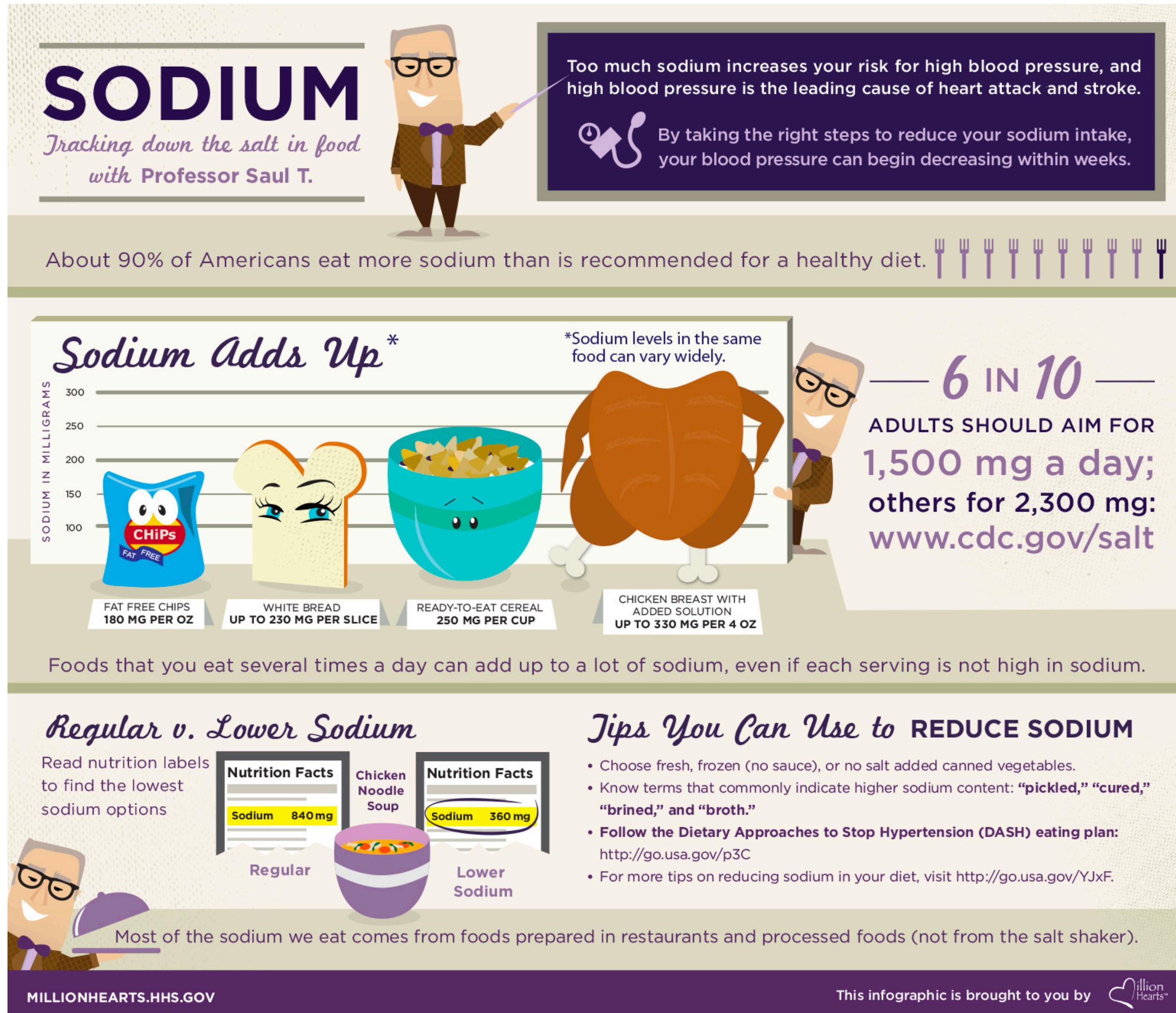
Exploratory:

- multiple linked views
- interactivity
- complex views

Goals/tasks:

- Discover trends, outliers, features
- Compare (top and bottom)

Case: the CDC



Expository:

- few, unlinked views
- use of icons, color
- static, headlines annotated

Goals/tasks:

- Engagement, reflection, persuasion

Goals goals goals

Goals/tasks:

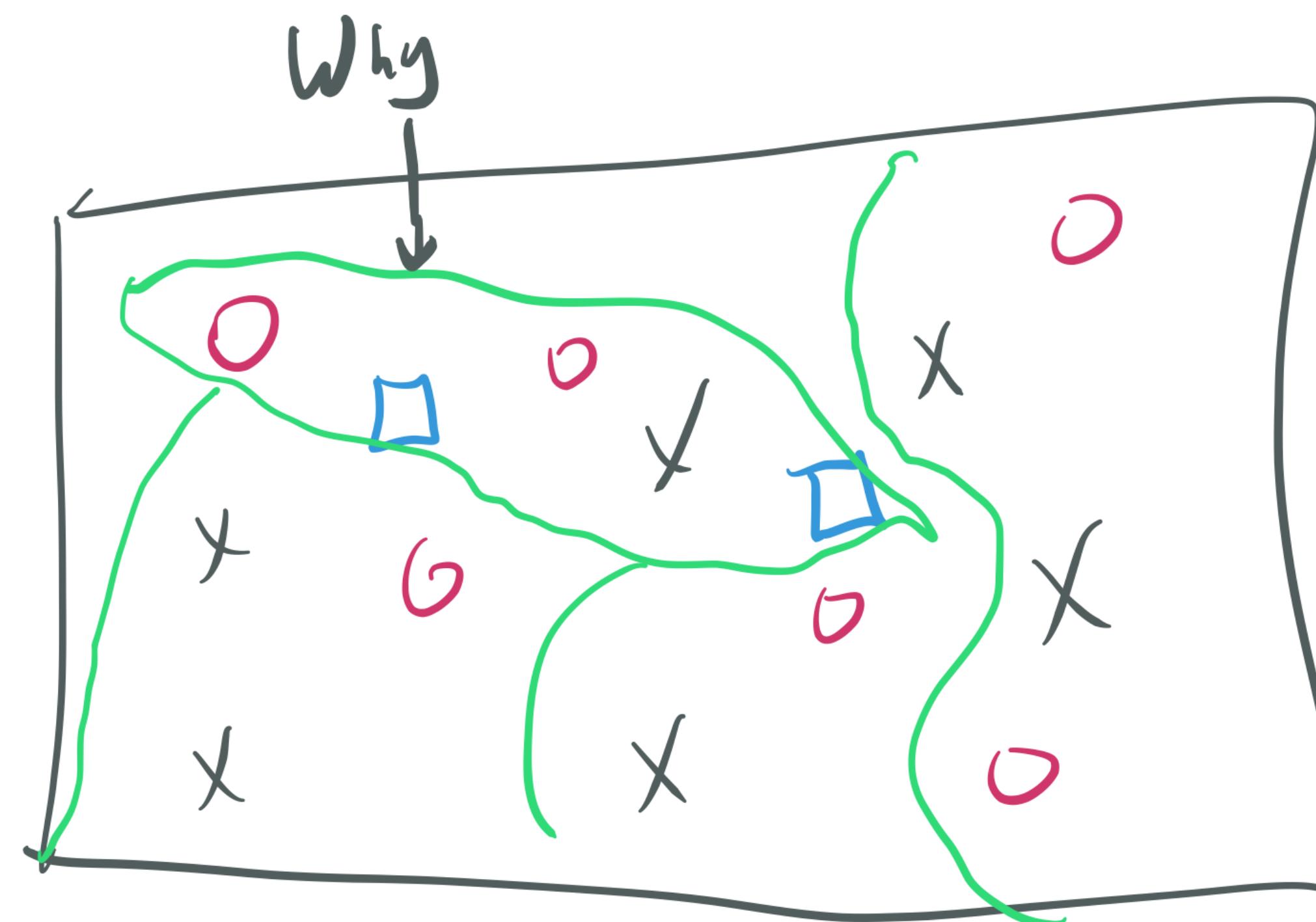
- Engagement,
reflection,
persuasion

Goals/tasks:

- Discover trends,
outliers, features

Browse, annotate, explore, summarize, correlate, filter,
.... and so on

“Why” trims the design space



Actions

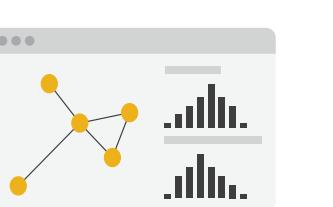
➔ Analyze

➔ Consume

➔ Discover



➔ Present



➔ Enjoy



➔ Produce

➔ Annotate



➔ Record



➔ Derive

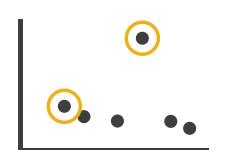


➔ Search

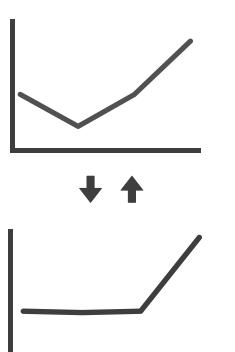
	Target known	Target unknown
Location known	 <i>Lookup</i>	 <i>Browse</i>
Location unknown	 <i>Locate</i>	 <i>Explore</i>

➔ Query

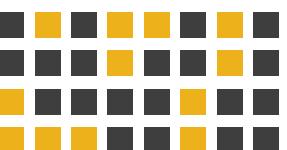
➔ Identify



➔ Compare



➔ Summarize



Actions

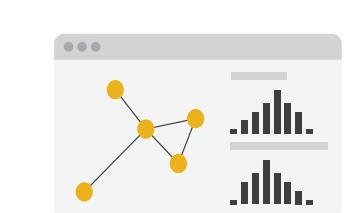
➔ Analyze

→ Consume

→ Discover



→ Present

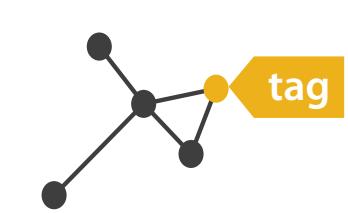


→ Enjoy



→ Produce

→ Annotate



→ Record



→ Derive

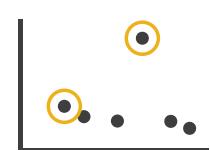


➔ Search

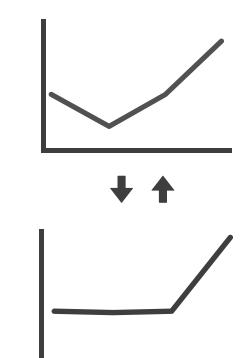
	Target known	Target unknown
Location known		
Location unknown		

➔ Query

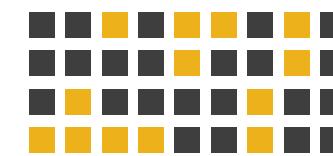
→ Identify



→ Compare



→ Summarize



Consuming analysis
vs.
Producing analysis

Actions

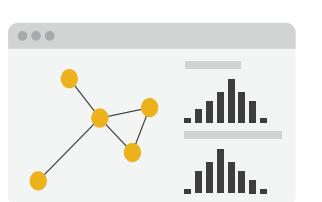
Analyze

→ Consume

→ *Discover*



→ Present

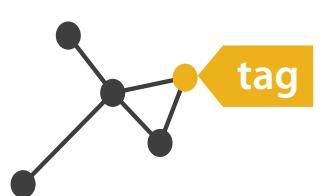


→ *Enjoy*



→ Produce

→ *Annotate*



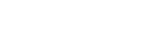
→ Record



→ *Derive*

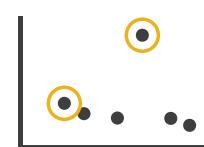


Search

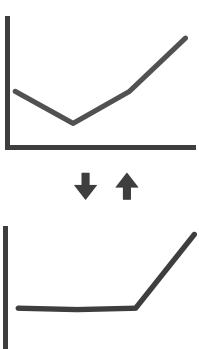
	Target known	Target unknown
Location known	 <i>Lookup</i>	 <i>Browse</i>
Location unknown	 <i>Locate</i>	 <i>Explore</i>

Query

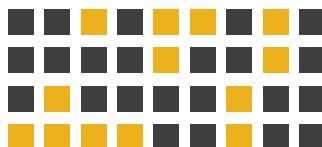
→ Identify



→ Compare



→ Summarize



Search: goal-directed vs non-specific goals**

Actions

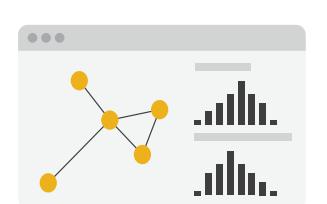
➔ Analyze

→ Consume

→ Discover



→ Present



→ Enjoy

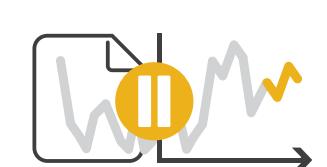


→ Produce

→ Annotate



→ Record



→ Derive

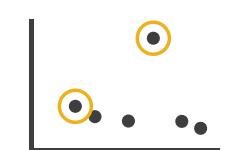


➔ Search

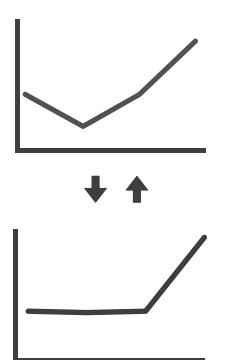
	Target known	Target unknown
Location known	• • • <i>Lookup</i>	• • • <i>Browse</i>
Location unknown	◁ 🔎 ▷ <i>Locate</i>	◁ 🔎 ▷ <i>Explore</i>

➔ Query

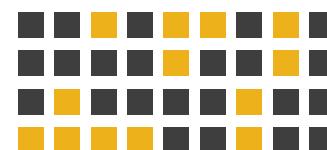
→ Identify



→ Compare



→ Summarize



Query: lowest level
1, 2, 2+ item
operations