

Paul Rosen

paul.rosen@utah.edu
@paulrosenphd
<https://cspaul.com>



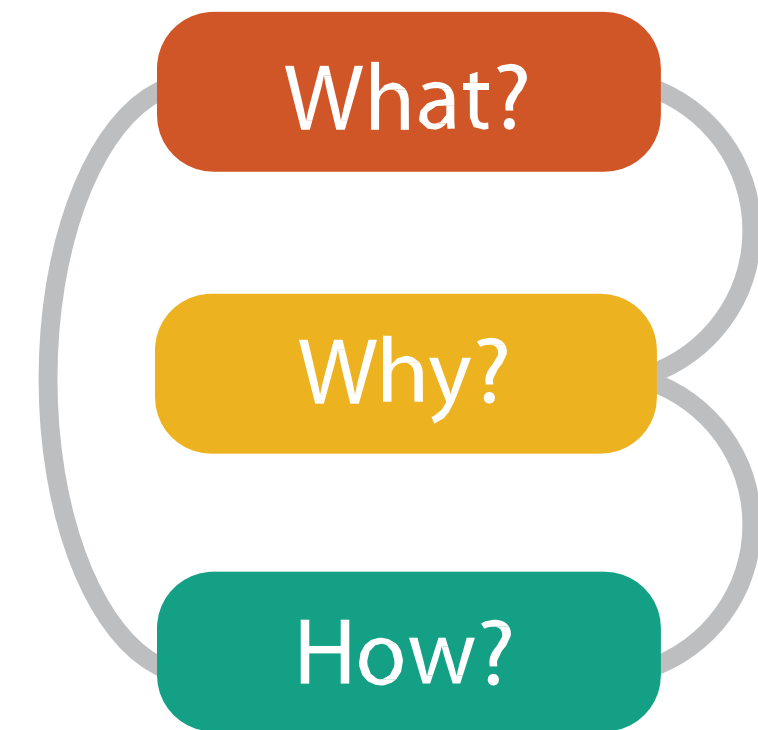
Visualization for Data Science

DS-4630 / CS-5630 / CS-6630

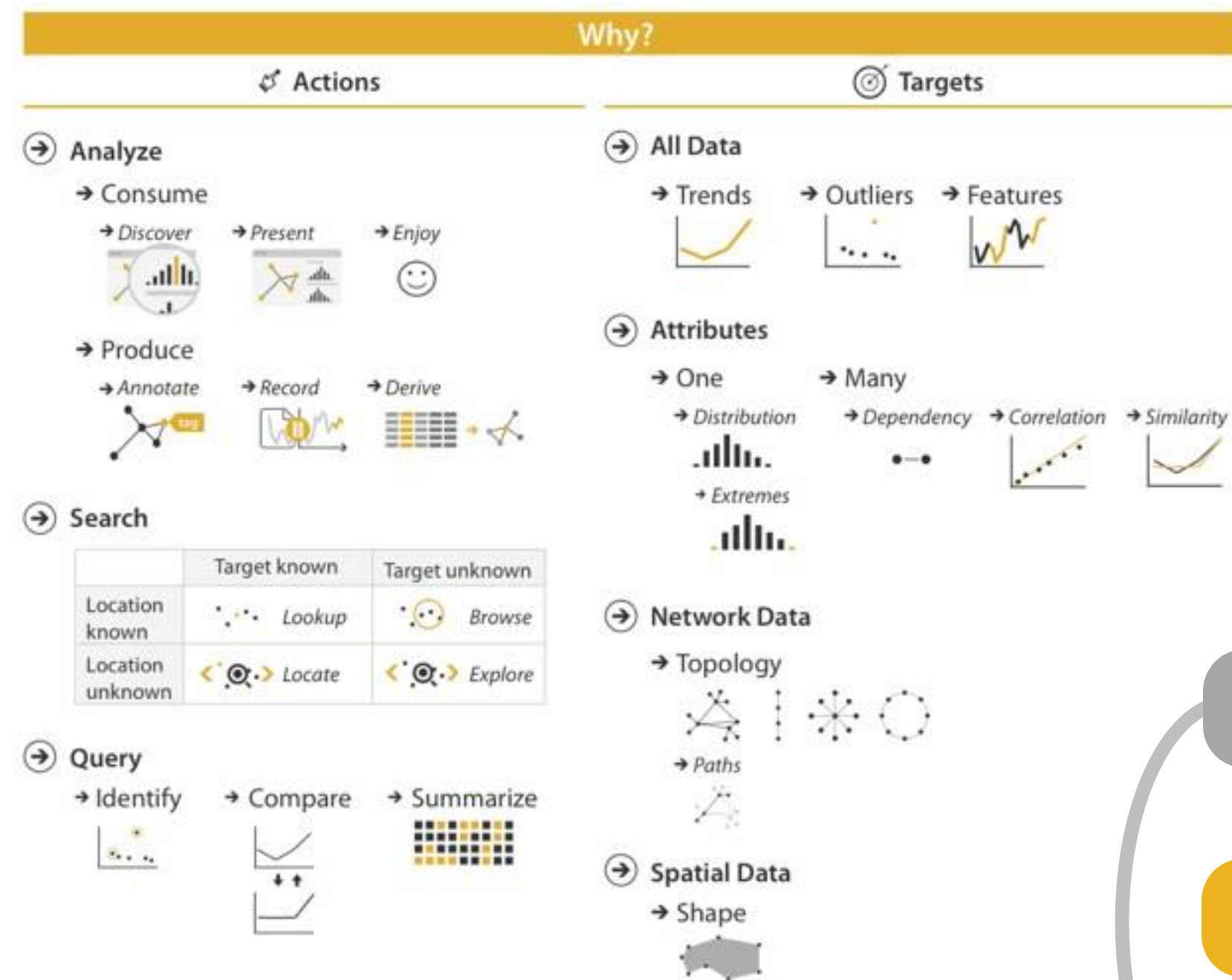
TASKS & INTERACTION

High-level Task Taxonomy: what, why, and how

- **what** is shown?
- **why** is the user looking at it?
- **how** is it shown?
 - abstract vocabulary avoids domain-specific terms
 - what-why-how analysis framework as scaffold to think systematically about design space



task abstraction



What?

Why?

How?

{action, *target*} pairs

- discover distribution
- compare trends
- locate outliers
- browse topology

→ Analyze

{action, target}

→ Search

→ Query

{action, target}

→ Analyze

→ Consume

→ Discover



→ Present



→ Enjoy



→ Search

→ Query

annotate & record



{action, target}

→ All Data

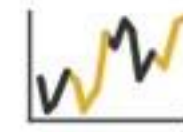
→ Trends



→ Outliers



→ Features



{action, target}

→ All Data

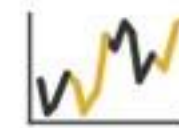
→ Trends



→ Outliers



→ Features



→ Attributes

→ One

→ *Distribution*



→ *Extremes*



→ Many

→ *Dependency*



Using Interaction

- Change Over Time
- Rearranging
- Selection & Highlighting
- Linking
- Filtering
- Navigation

CHANGE OVER TIME

Rearranging

SELECTION & HIGHLIGHTING

Linking

Filtering

