

Chapter 4, Episode 2: Beyond “access:” from designing *for* to designing *with*

Involving people with disabilities in the design process

Disability-led motivation/problem definition



Ideation

Design

Prototype
(involves
building and
testing)

Evaluate
(final)

Source: [“How not to make bad AT” by Iman et al](#)

Involving people with disabilities in the design process

Co-design or participatory design



Ideation

Design

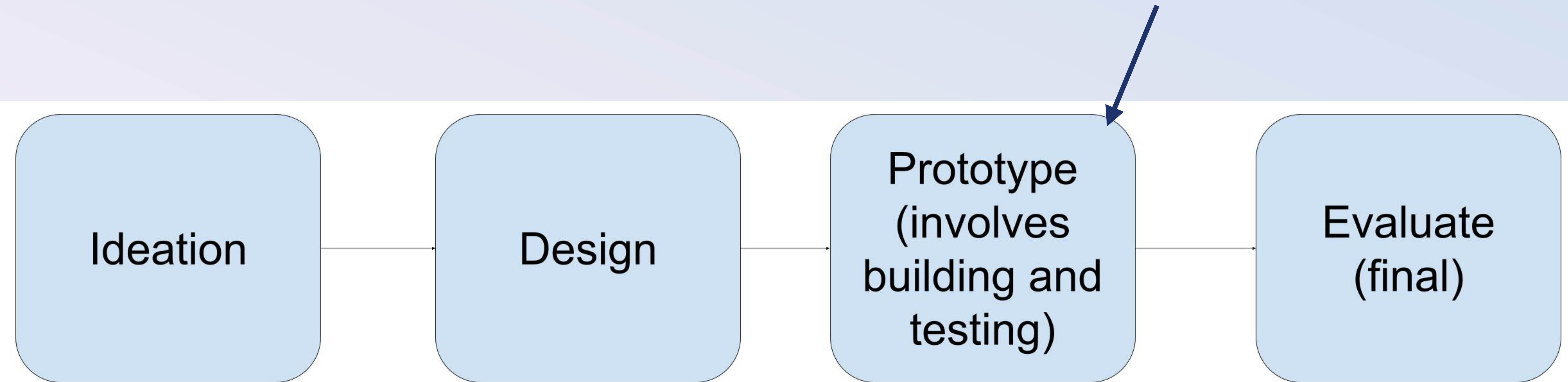
Prototype
(involves
building and
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Evaluate
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Source: [“How not to make bad AT” by Iman et al](#)

Involving people with disabilities in the design process

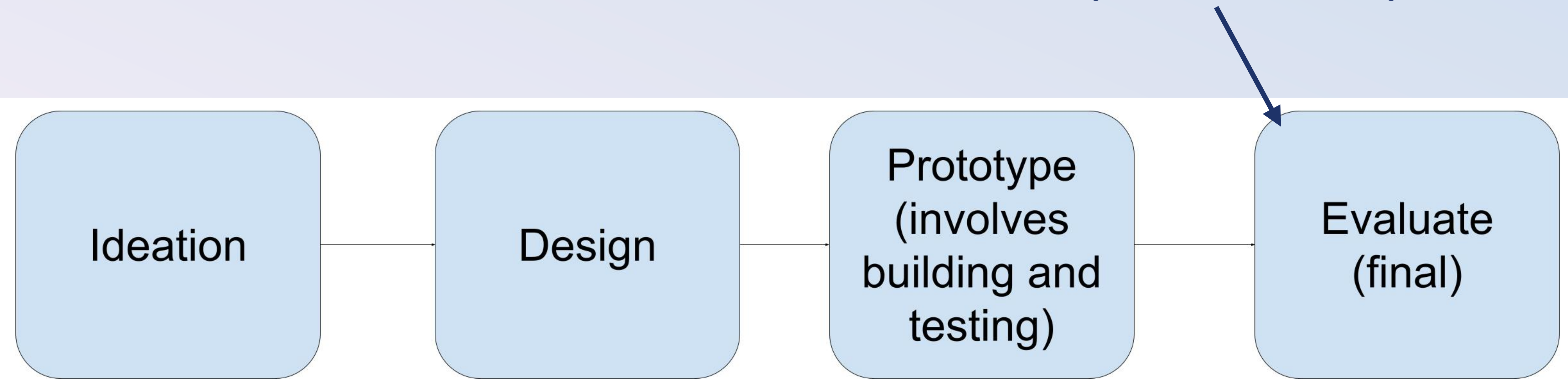
Auto-innovation, or
the researcher-as-maker



Source: [“How not to make bad AT” by Iman et al](#)

Involving people with disabilities in the design process

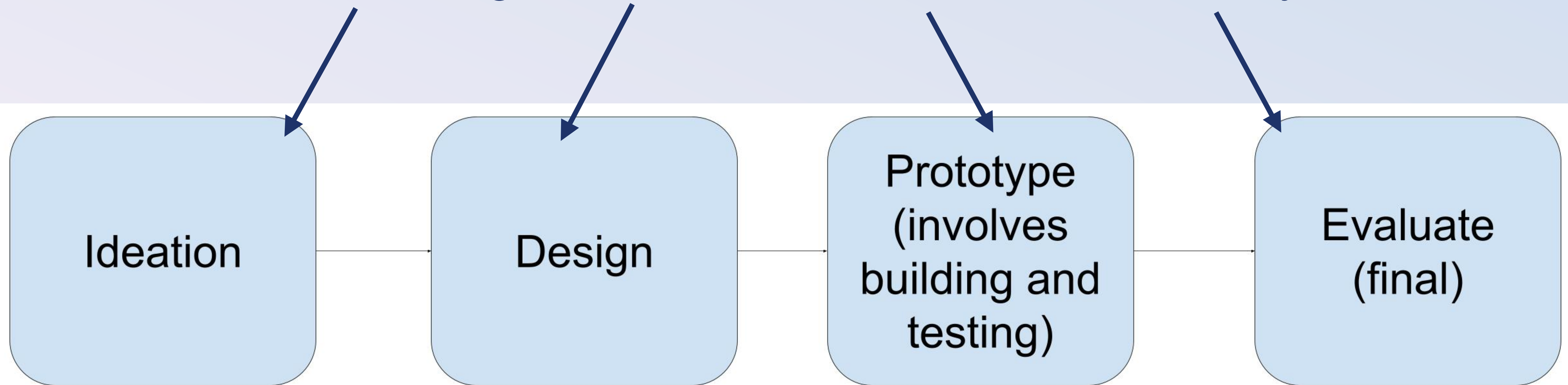
Community-driven deployment



Source: [“How not to make bad AT” by Iman et al](#)

Involving people with disabilities in the design process

Paid design/research consultant, with a disability



Source: [“How not to make bad AT” by Iman et al](#)

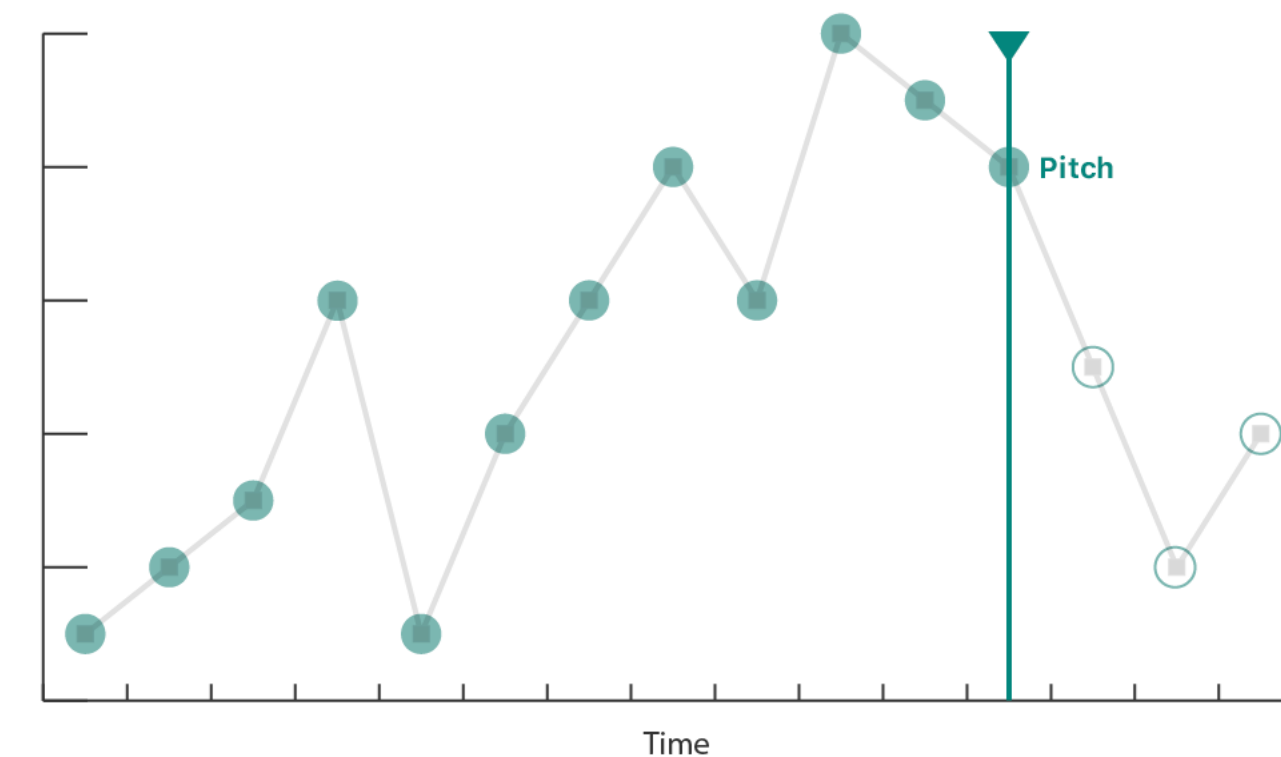
Co-designing audio graphs

Audio graphs

Define an accessible representation of your chart for VoiceOver to generate an audio graph.

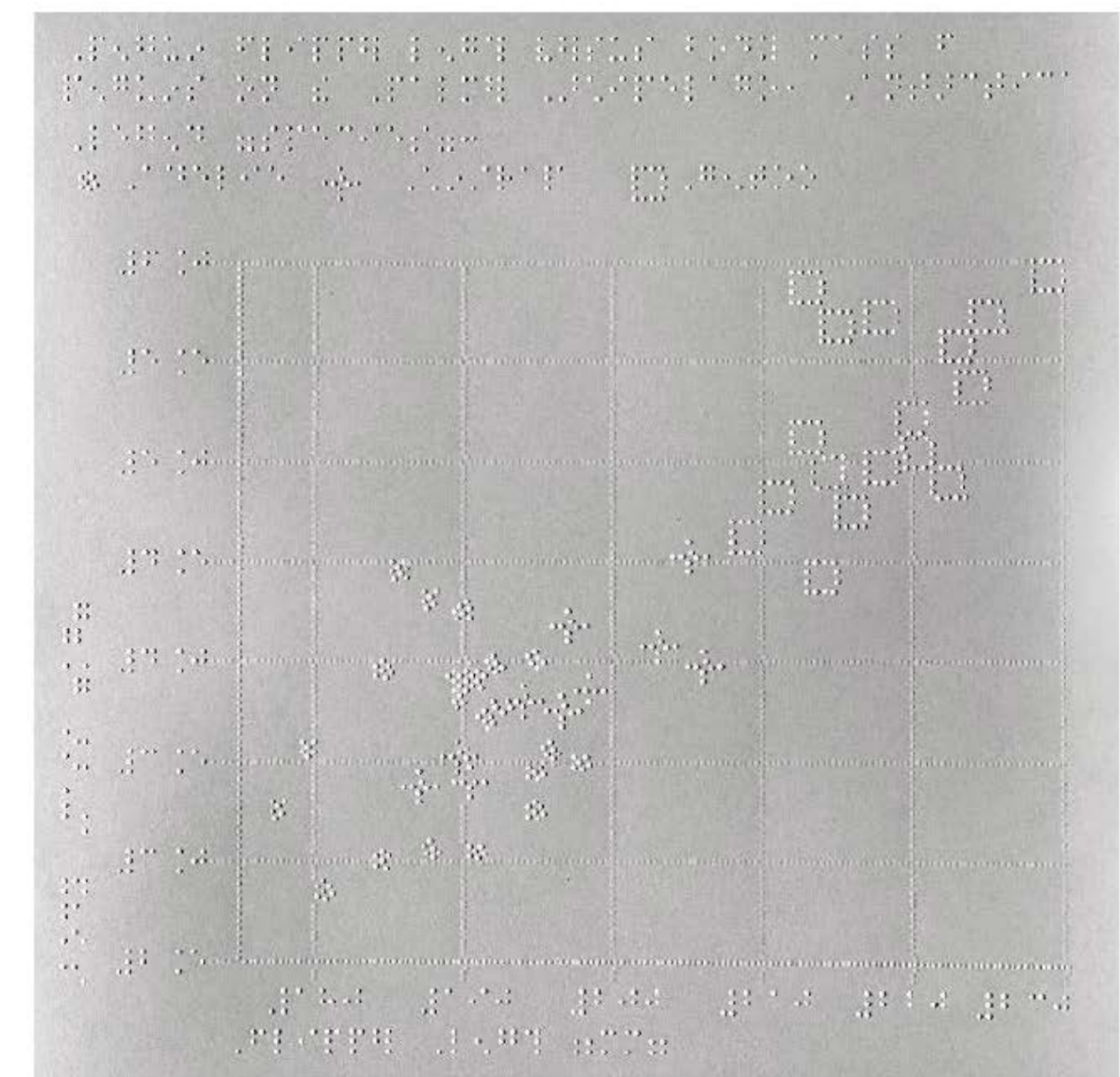
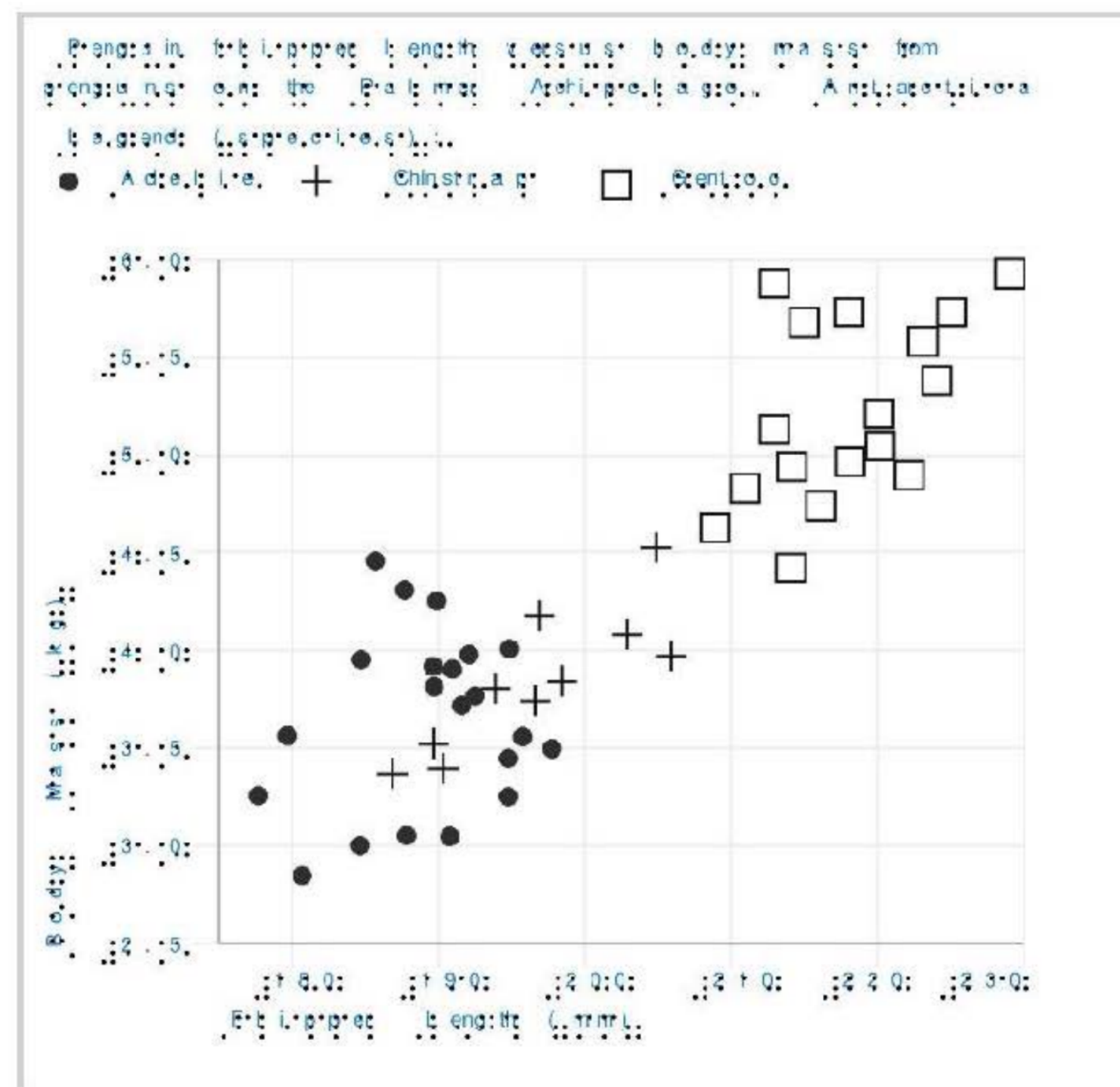
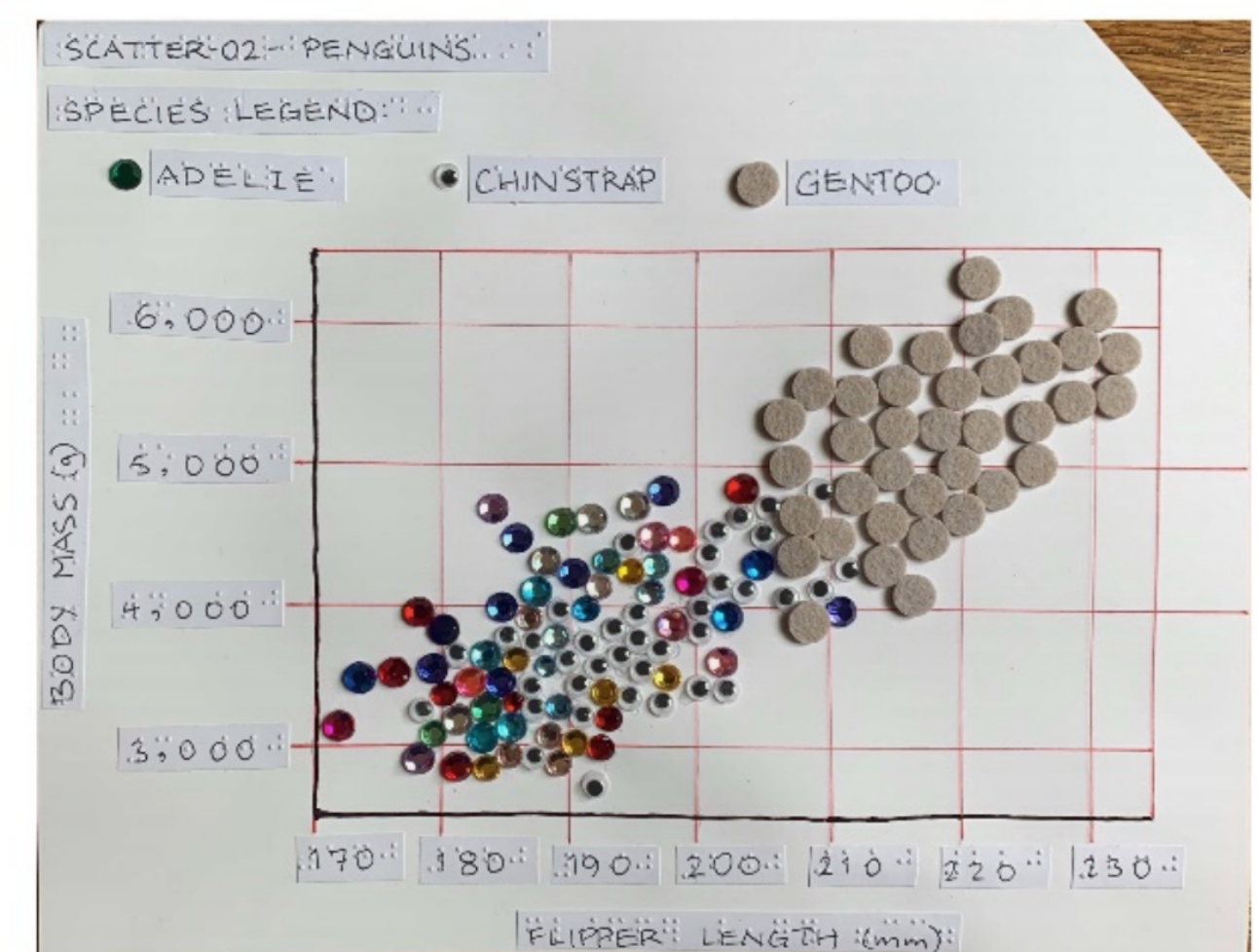
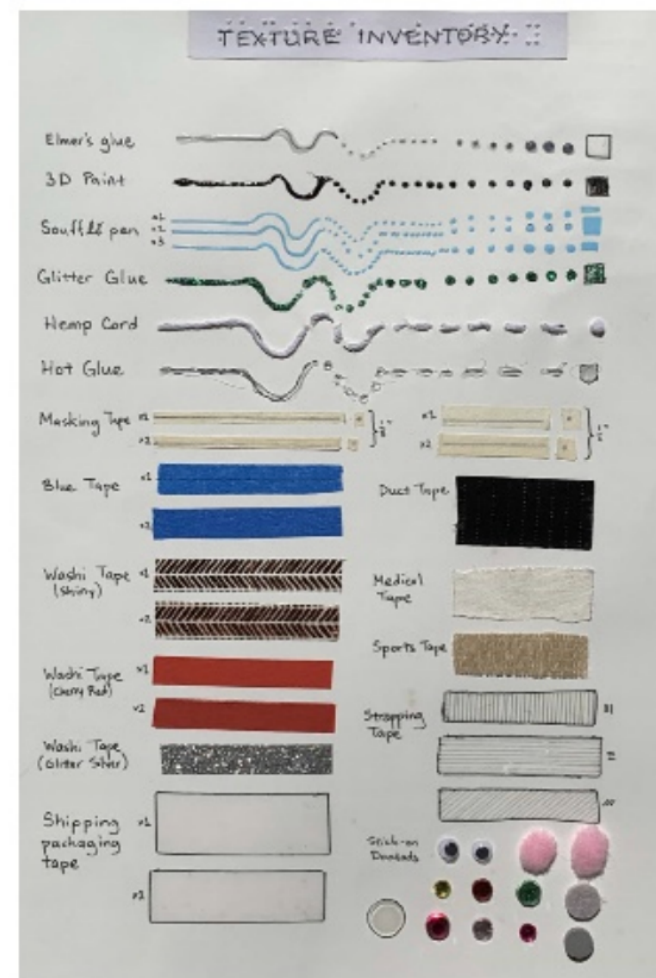
Overview

Charts and graphs help users quickly identify important features and trends in data. Use the audio graphs API to provide all the information that VoiceOver needs to construct an audible representation of the data in your charts and graphs, making the data accessible to people who are blind or have low vision.



Source: [Apple's Audio Graphs](#)

Co-designing audio graphs



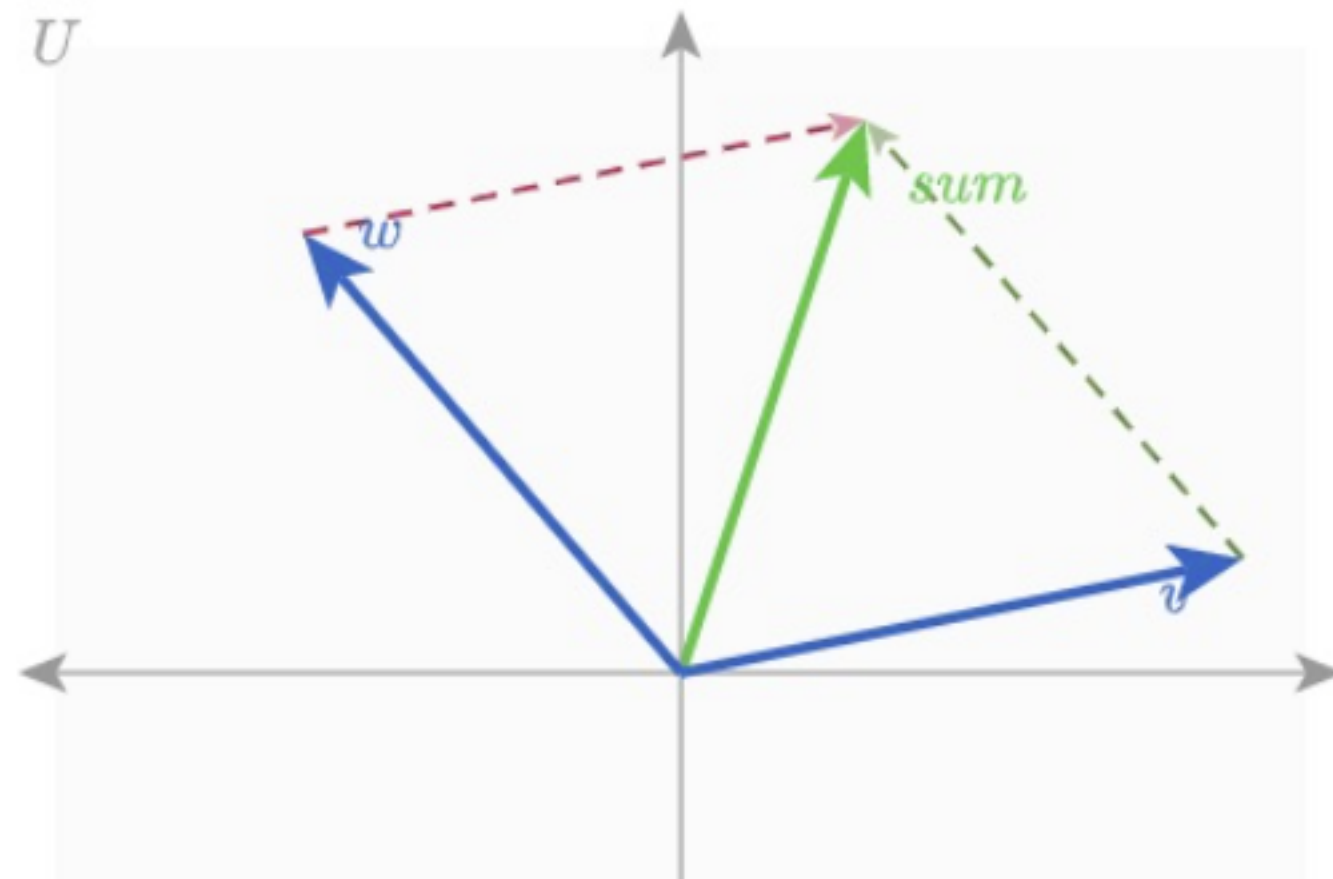
"Interdependent variables" by de Greef et al

Refreshable tactile displays

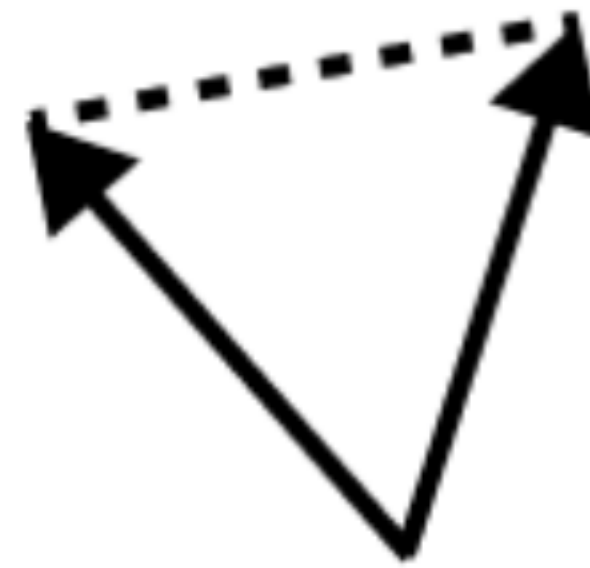


Co-designing tactile experiences

A. Reference parallel vector diagram



B. Traced portion



C. Braille pin array output



Source: [Data Navigator](#), by Elavsky et al

Co-designed *set diagram* navigation

