

**Data visualisation
and information design at the science-policy interface**
Drawing from the IPCC experience.

**Understanding how
Humans process visual
information is key to
creating accessible
figures to non-experts.**

Gomis M. I.¹, Berger S.¹, Matthews R.¹, Connors S.¹, Yelekci O.¹, Harold J.², Morelli A.³, and Johansen T. G³.

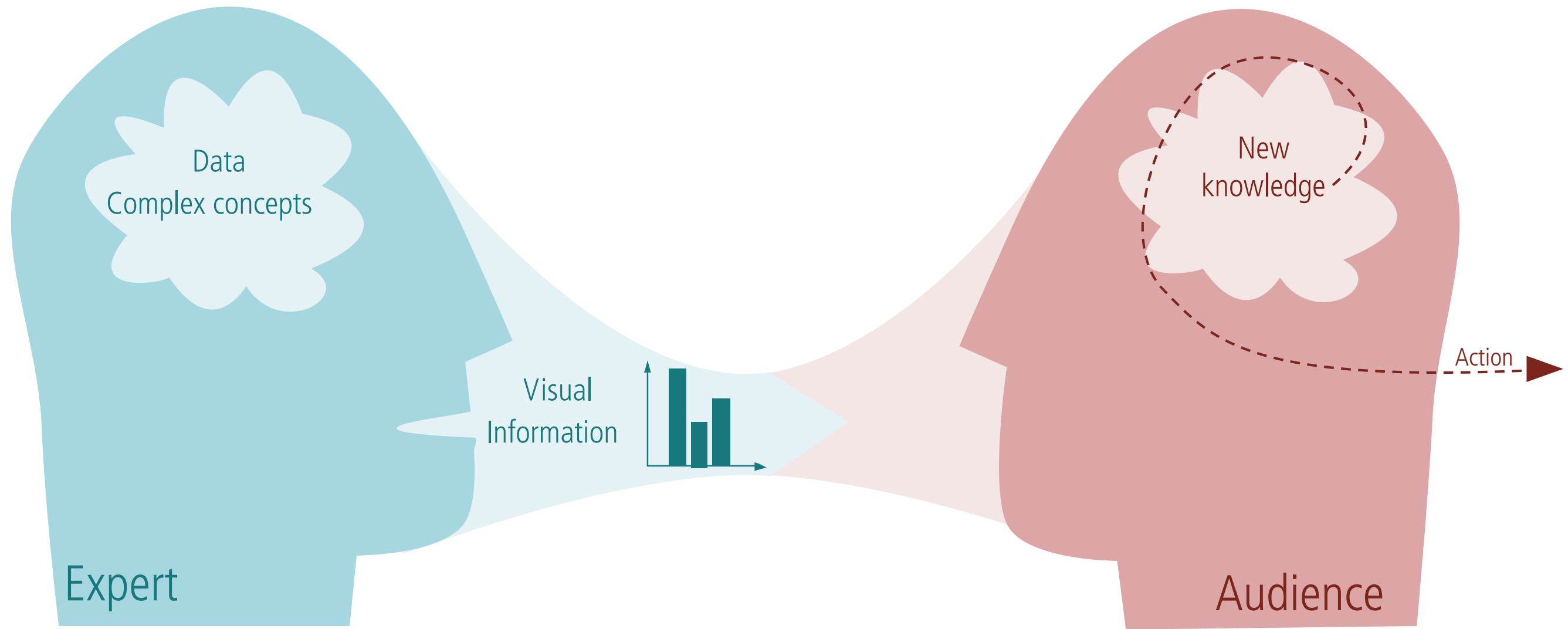
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³ Infodesignlab, Norway.

Understanding precedes action and change

A. Morelli



WHAT IS THE Intergovernmental Panel on Climate Change

1988

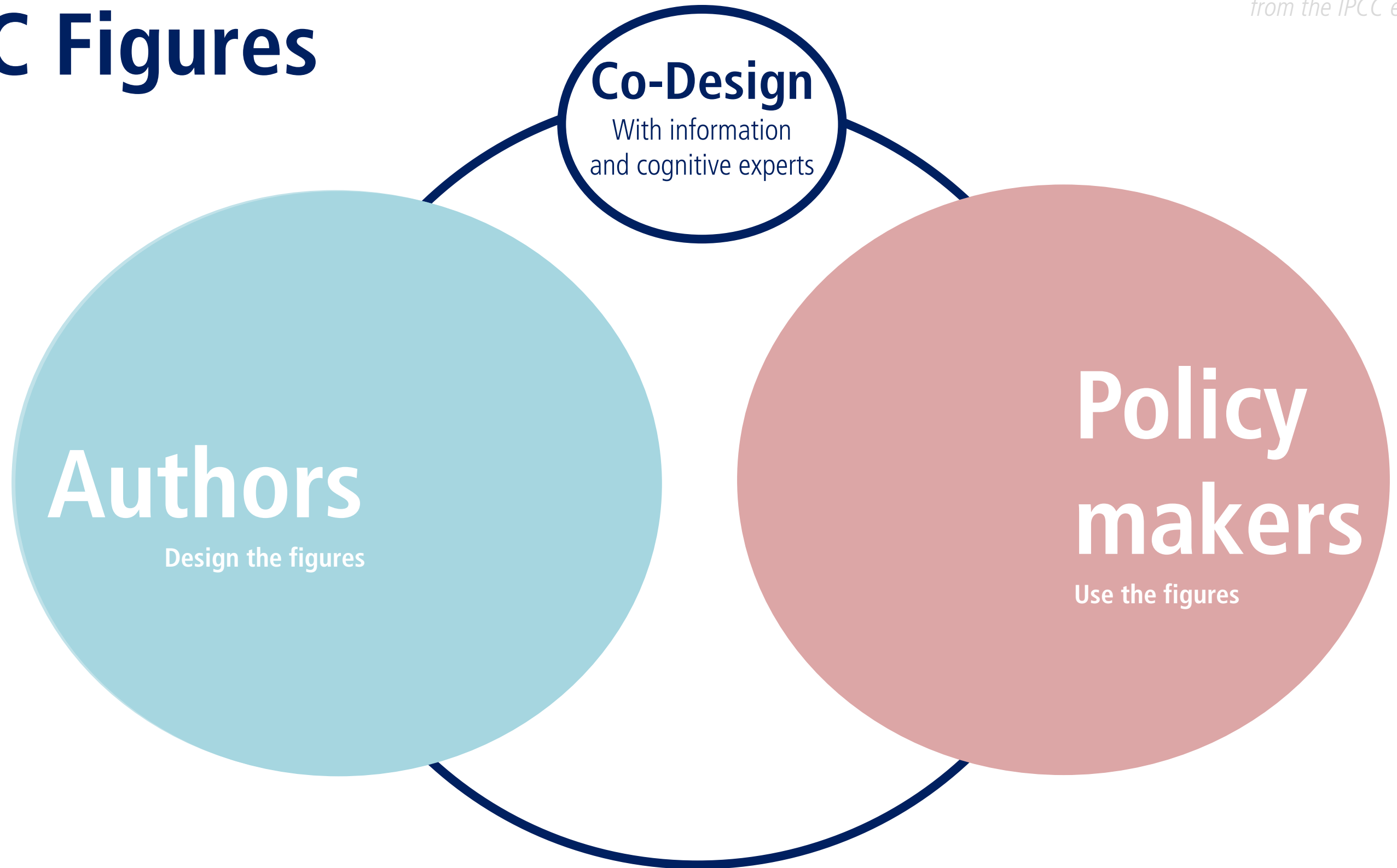
Clear **scientific view** about **climate change**

Support **decision makers**

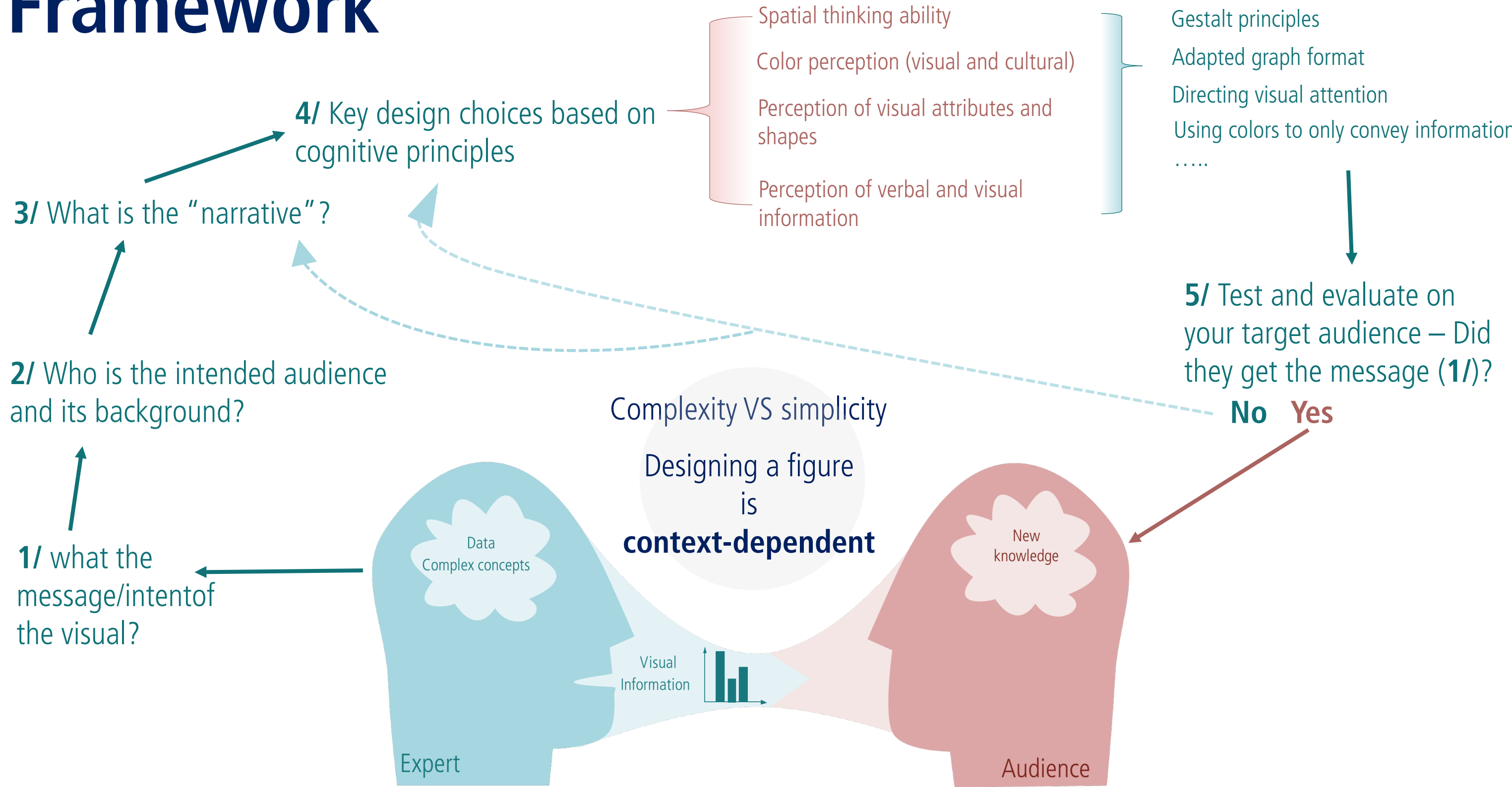
The IPCC **assesses** the science



IPCC Figures



Framework



More?

Books

"The Visual Display of Quantitative Information" by Edward R. Tufte

"Fundamentals of Data Visualization" by Claus O. Wilke

Recommendations to the IPCC and guidance for researchers (Harold et al., 2017)

https://tyndall.ac.uk/sites/default/files/Data_Visuals_Guidance_Full_Report_0.pdf

Peer-reviewed papers

Harold, Jordan, et al. *"Cognitive and psychological science insights to improve climate change data visualization."* *Nature Climate Change* 6.12 (2016): 1080.

Daron, J. D., et al. *"Interpreting climate data visualisations to inform adaptation decisions."* *Climate Risk Management*, 10, (2015): 17-26.

Rodríguez Estrada, F. C., et al. *"Improving visual communication of science through the incorporation of graphic design theories and practices into science communication."* *Science Communication* 37, no. 1 (2015): 140-148.

Grainger, S. et al. *"Environmental data visualisation for non-scientific contexts: Literature review and design framework."* *Environmental Modelling & Software* 85 (2016): 299-318.

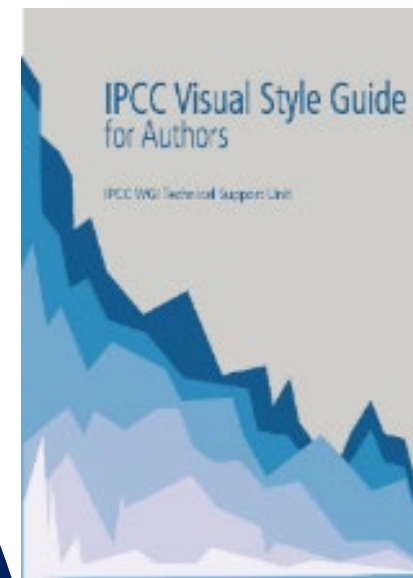
Schneider, B. *"Climate model simulation visualization from a visual studies perspective."* *Wiley Interdisciplinary Reviews: Climate Change* 3.2 (2012): 185-193.

Rougier, N. P., et al. *"Ten simple rules for better figures."* (2014): e1003833.

Data visualisation tools

[Rawgraphs](#) [Quadrigram](#) [tableau](#) [Semiotics](#) [Observable](#)
[plotly](#) [datawrapper](#) post-editing: [Inkscape](#) (like Illustrator but free)

Twitter accounts @AlbertoCairo @Visualisingdata
@DataVizSociety @R_Graph_Gallery
@MelichatGo



<https://www.ipcc.ch/site/assets/uploads/2019/04/IPCC-visual-style-guide.pdf>

Gestalt Principles (principles or grouping) are a set of principles in psychology, first proposed by Gestalt psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects. Gestalt psychologists argued that these principles exist because the mind has an innate disposition to perceive patterns in the stimulus based on certain rules. These principles are organized into five categories: Proximity, Similarity, Continuity, Closure, and Connectedness

Source: [Wikipedia](#)

Gestalt Principles

UX CHEAT.com



Good Figure

Objects grouped together tend to be perceived as a single figure. Tendency to simplify.



Proximity

Objects tend to be grouped together if they are close to each other.



Similarity

Objects tend to be grouped together if they are similar.



Continuation

When there is an intersection between two or more objects, people tend to perceive each object as a single uninterrupted object.



Closure

Visual connection or continuity between sets of elements which do not actually touch each other in a composition.



Symmetry

The object tend to be perceived as symmetrical shapes that form around their center.