

DATA AS THE NEW INDUSTRIAL MATERIAL

Constructivism and
Contemporary Data Art

Sophie Ashdown



AGENDA

- Research Question
- Constructivism
- Data Visualisation and Data Art
- Nathalie Miebach
- David McCandless
- Related areas
- Main conclusions
- Questions



RESEARCH TOPIC

Data as a raw material in art.

How contemporary data artists echo the Constructivist use of geometric forms by treating data itself as the modern equivalent of an industrial material.

Comparing specifically how Artist Nathalie Miebach and Data Journalist David McCandless incorporate the design elements of Constructivism in their artistic interpretations of data.

WHY IS THIS RELEVANT

- We live in a data-saturated world
- Information is fed to us relentlessly
- We are constantly measured in data
- Increasingly we need to understand data, but do we engage with it? Do we feel it?
- Art can translate data into experience
- Constructivists translated the industrial revolution into art
- Today's artists use data as a modern material in art



WHAT IS CONSTRUCTIVISM?

- Revolutionary art movement started in Russia from c1915 into 1920s
- Influenced by the dawn of the Russian revolution which saw huge political, social, and industrial change



- Originally started in propaganda posters but soon evolved into a pure abstract style
- Key aesthetics include geometric shapes, primary colours, repetition of patterns, and industrial references

KEY CONSTRUCTIVIST ARTISTS

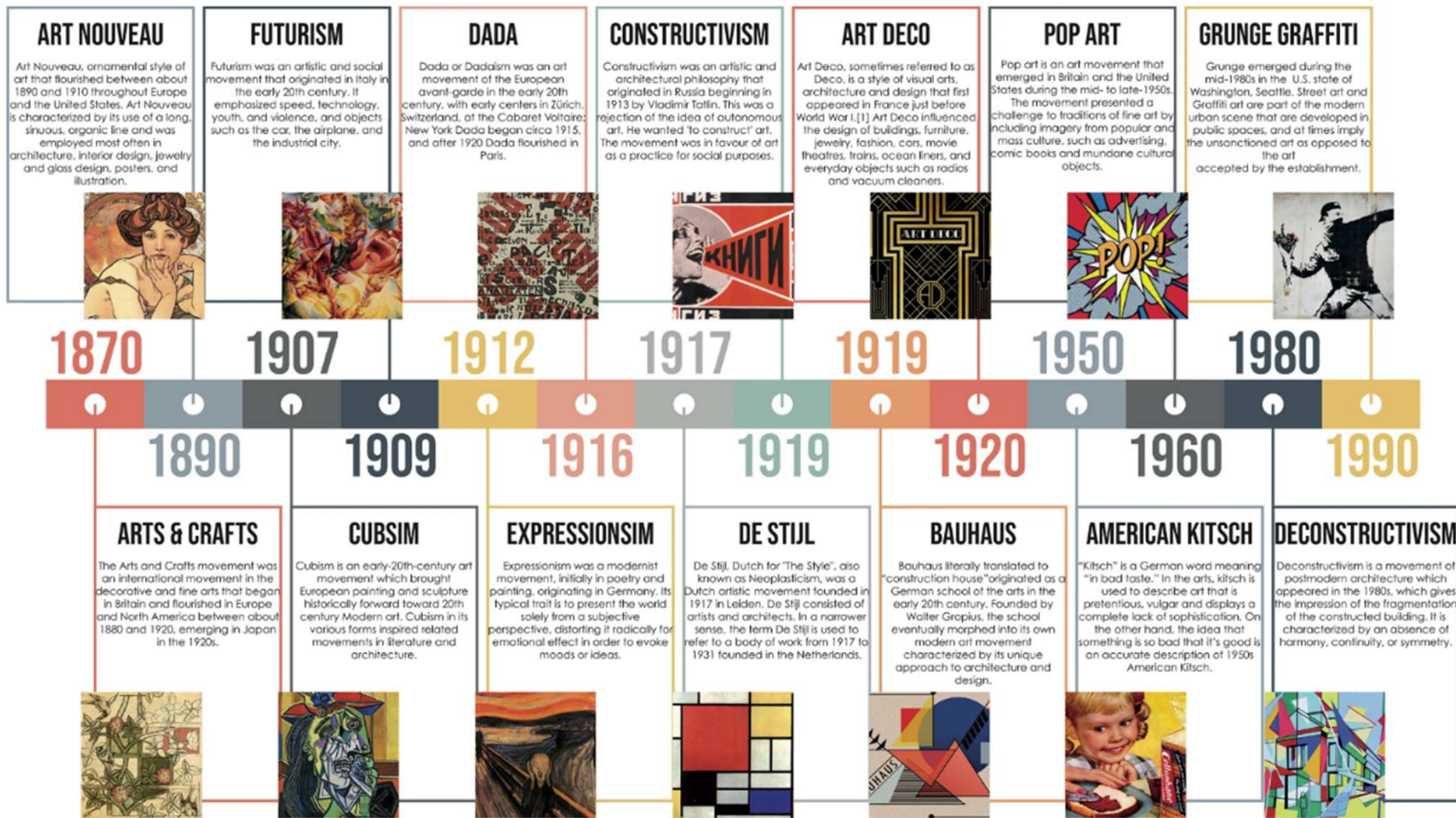
- Founders were Vladimir Tatlin (1885-1953) and Alexander Rodchenko (1891-1956)
- Their intention was to develop a “new style of pure, abstract art that was appropriate for a modern industrial society”



Fig 3 - Madonna, Vladimir Tatlin, 1913



Fig 4 - Composition géométrique, Alexander Rodchenko, 1918



- Part of the abstract momentum in the early 20th century that influenced and inspired the De Stijl, Bauhaus, and Pop Art movements
- Key elements of Constructivism continue to influence and inspire artists of today

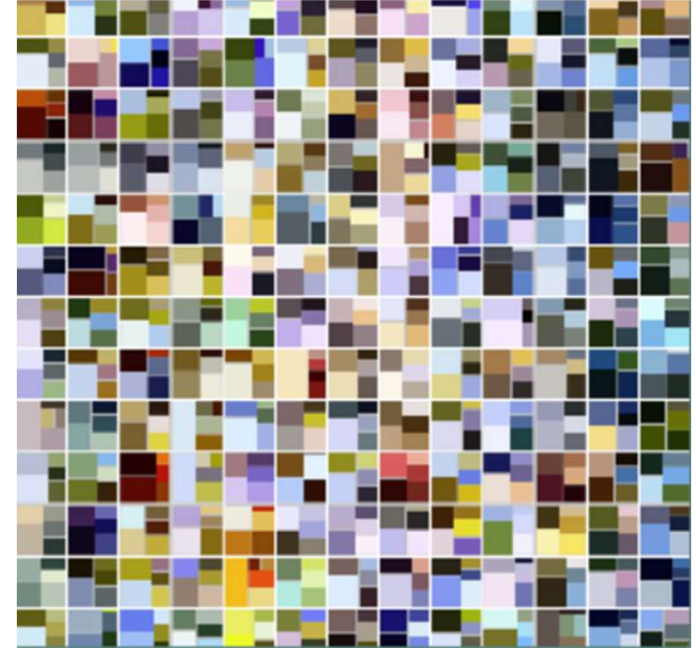
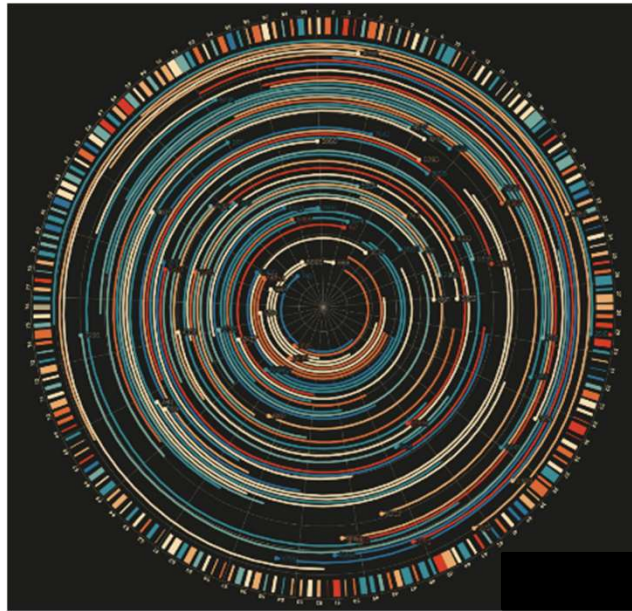
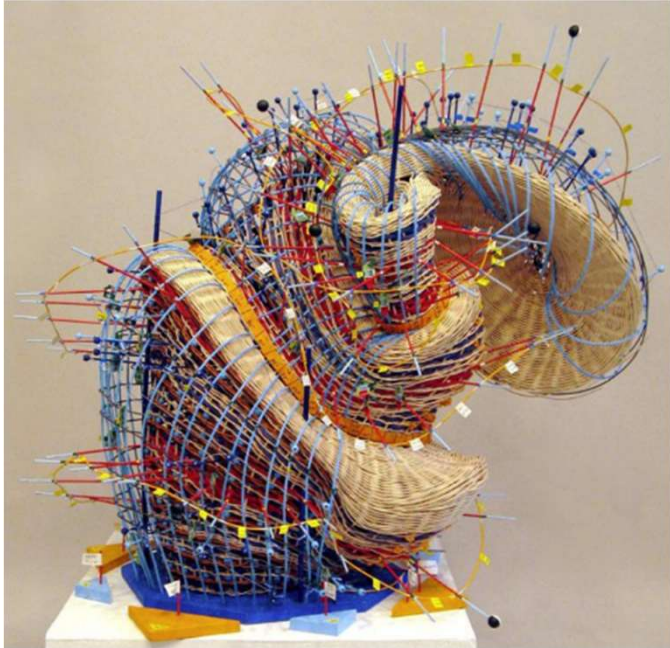
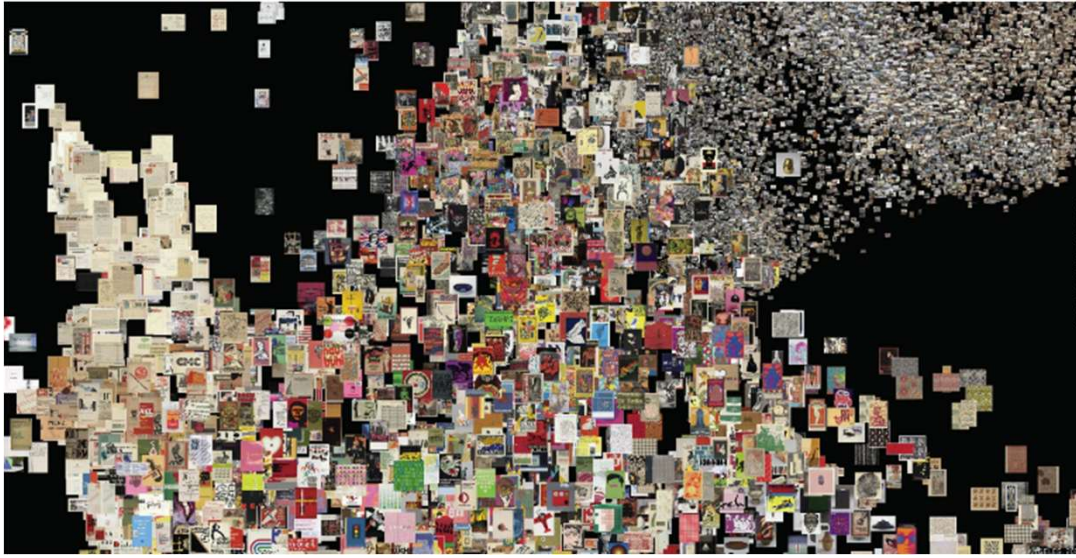


DATA AS AN ART MATERIAL

- Constructivists used geometric forms and industrial materials (steel, glass, print) to reflect the modern world of their time
- Today we are in an information age so data has become the relevant modern material that can be used by artists now
- Art conveys stories, concepts, and emotion, so is a perfect medium to translate data that engages the viewer



QUICK POLL...

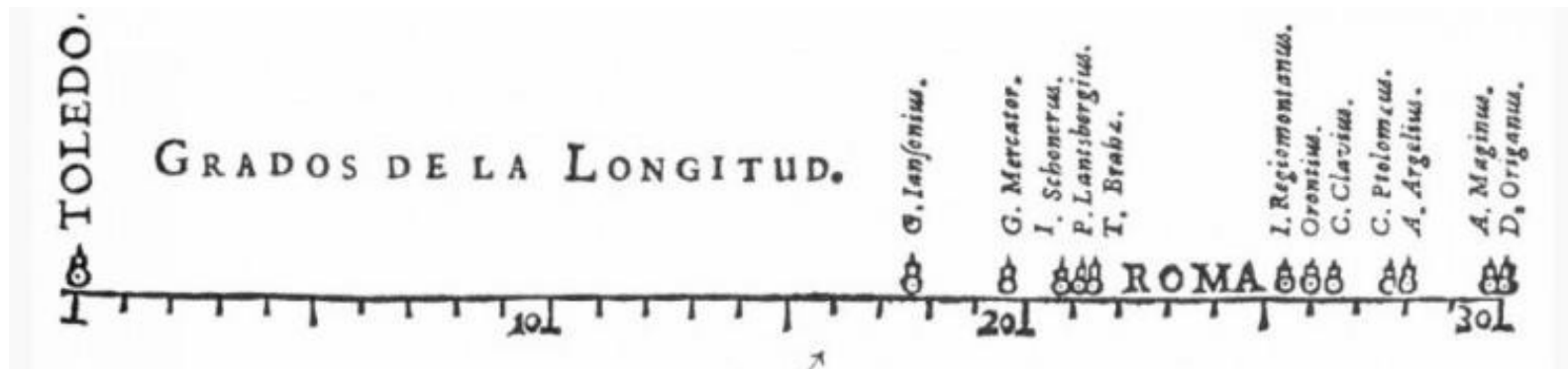


WHAT IS DATA VISUALISATION?

- Defined by IBM as :

“representation of data through use of common graphics, such as charts, plots, infographics and even animations. These visual displays of information communicate complex data relationships and data-driven insights in a way that is easy to understand.”

- Earliest known example of data visualisation from 1644 showing how to measure longitude:



BENEFITS OF DATA VISUALISATION

Makes data more accessible

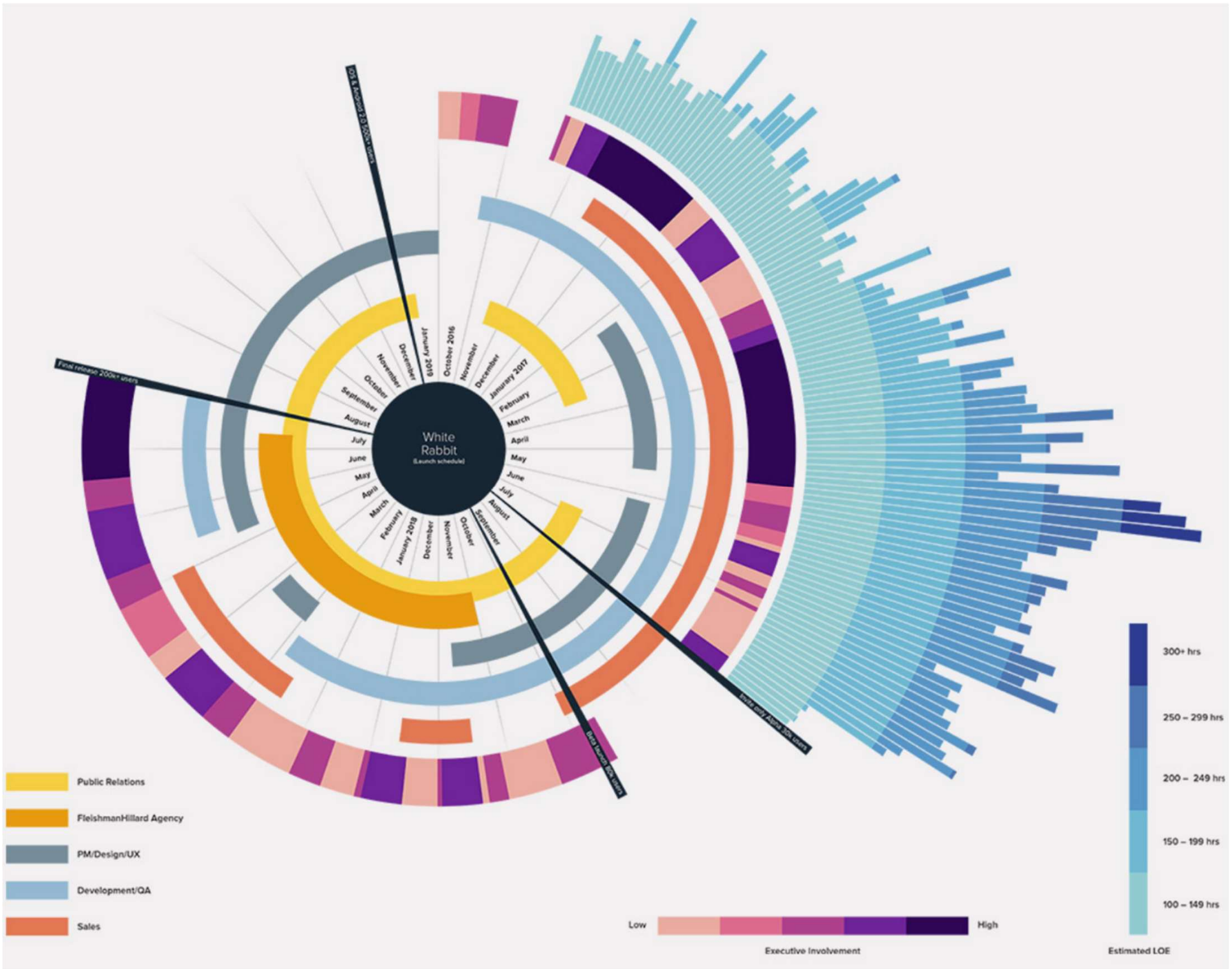
Helps to make comparisons

Exposes relationships

Recognises patterns

Tells a story with the data

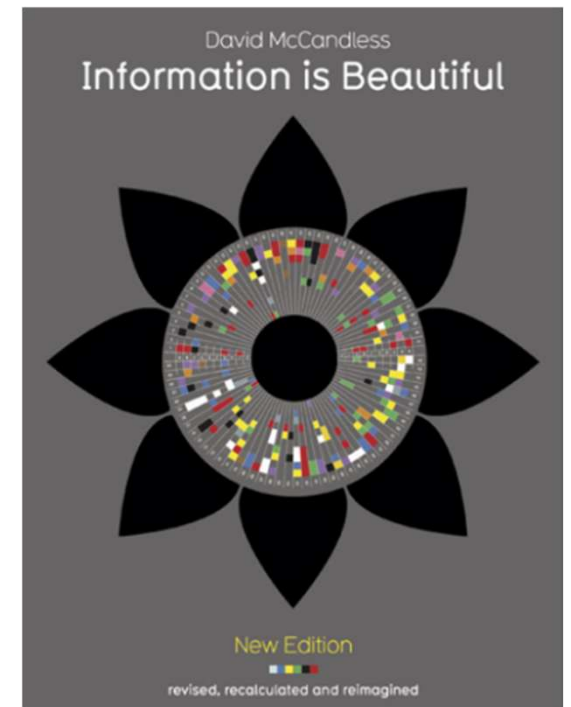




DAVID MCCANDLESS

- British author, data journalist and designer
- Founder of 'Information is Beautiful'
- Transforms data into thought-provoking infographics
- Key ideas:
 - Clarity and accessibility
 - Elegant design
 - Data storytelling

“Data feels like a kind of raw material and if you get your hands dirty and dig through it, it starts to come alive. I think data is a great lens we can use to see things in a different light. We can open up new patterns. Information is beautiful. Data is beautiful.”
(McCandless, *Turning Data into Art*, c2020)



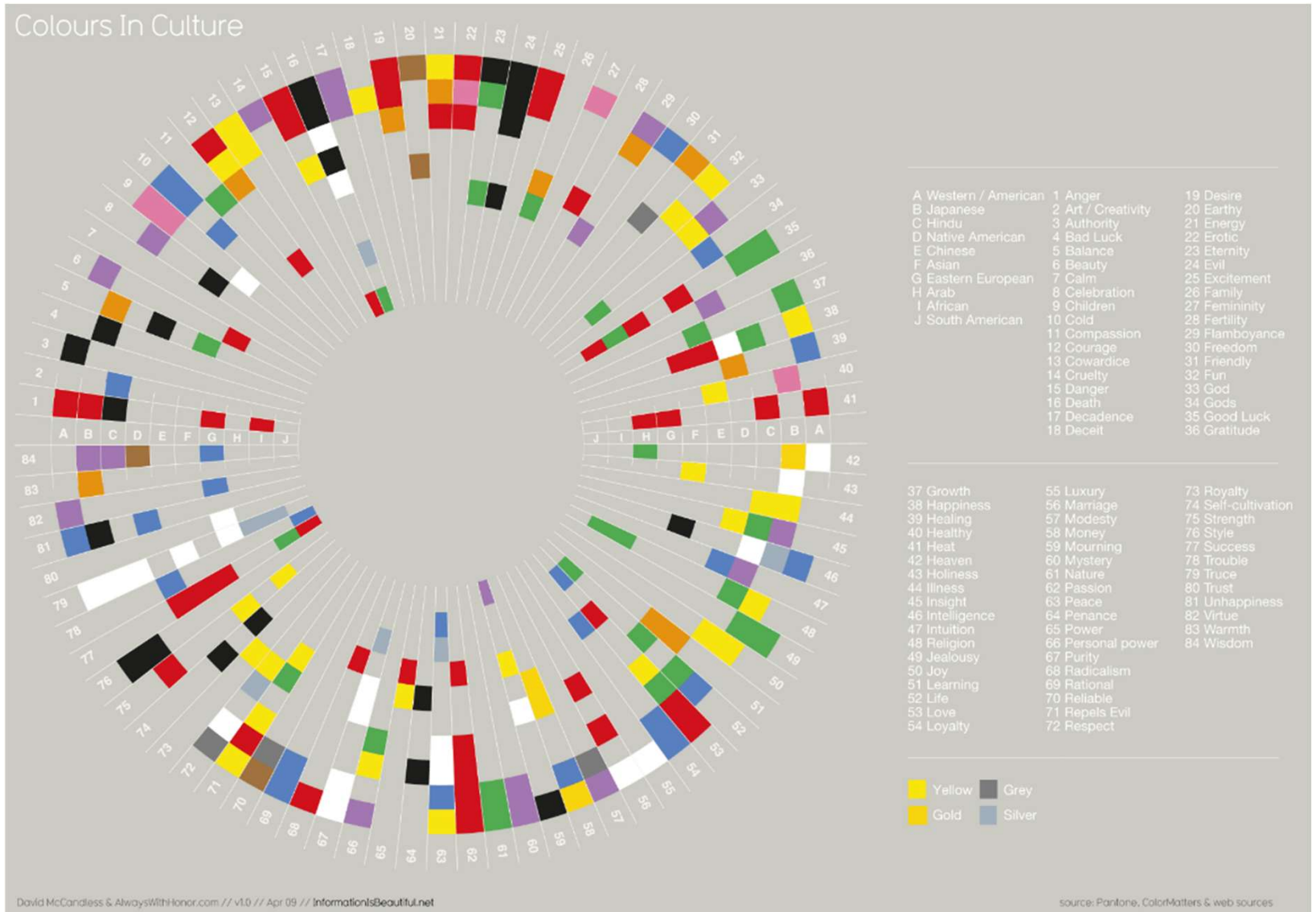


DAVID MCCANDLESS

https://www.ted.com/talks/david_mccandless_the_beauty_of_data_visualization



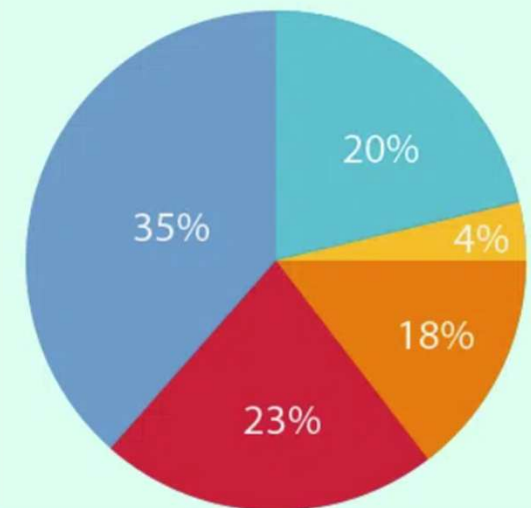
MCCANDLESS – “COLOURS IN CULTURE”



DATA VISUALISATION VS DATA ART

- Both are visual representations of data
- Both use clean lines, bold colours, simple shapes, grids, and patterns
- Both have evolved a long way from the pie chart!
- **Data Visualisation helps us to understand the data**
- **Data Art helps us experience the data**
- Data Art is an evolution of Data Visualisation

Pie Diagram







NATHALIE MIEBACH

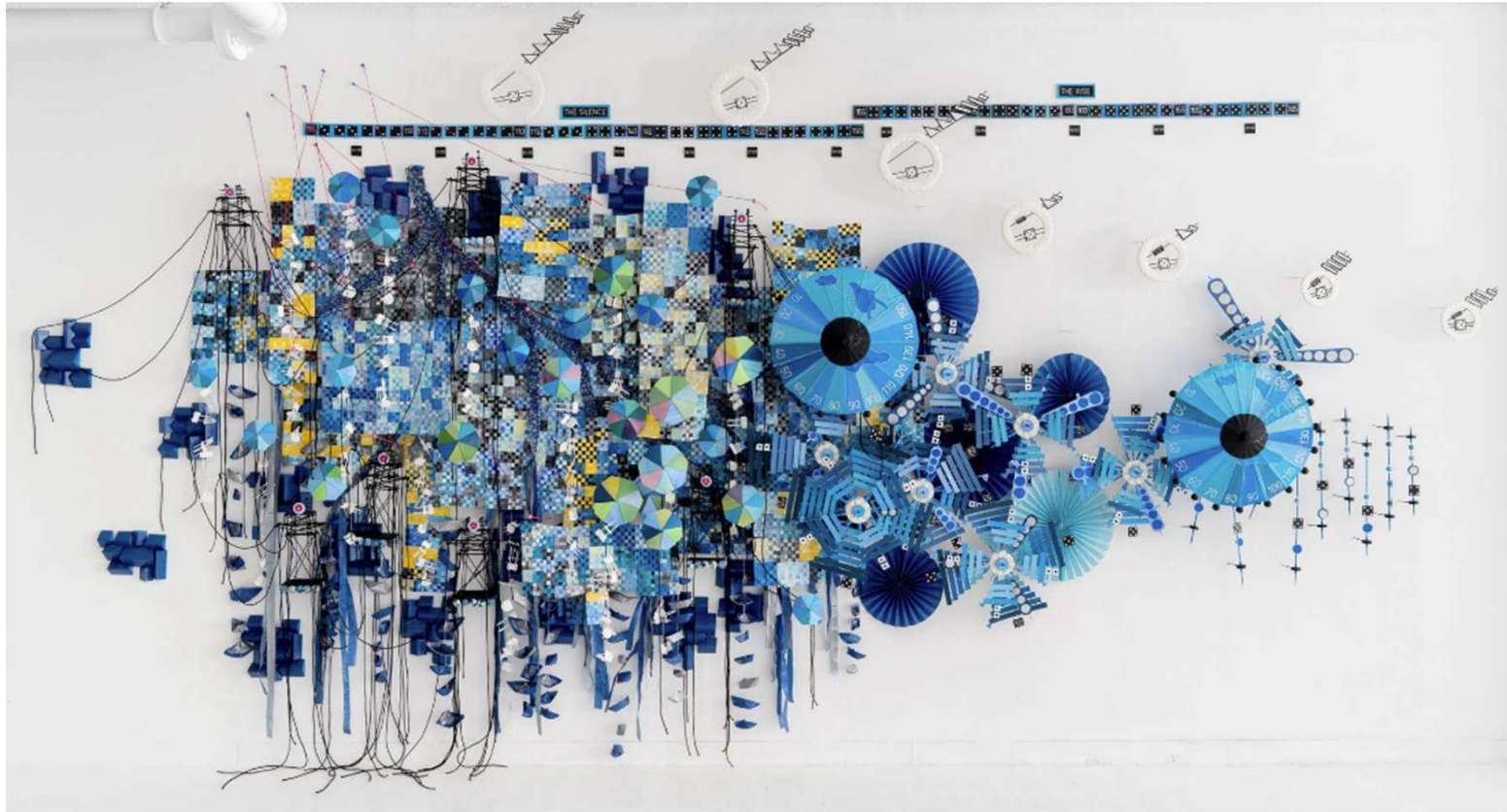
- German/American artist born in 1972 in Germany residing in Boston USA
- Creates large collage wall art pieces, sculptures, and musical scores based on weather data
- Uses data as a physical material
- Key ideas in her pieces:
 - Tactile and immersive
 - Emotional engagement
 - Narrative-driven structures
 - Repetition of geometric shapes reminiscent of Constructivism



NATHALIE MIEBACH

- https://www.ted.com/talks/nathalie_miebach_art_made_of_storms

MIEBACH — “THE FLOODS”

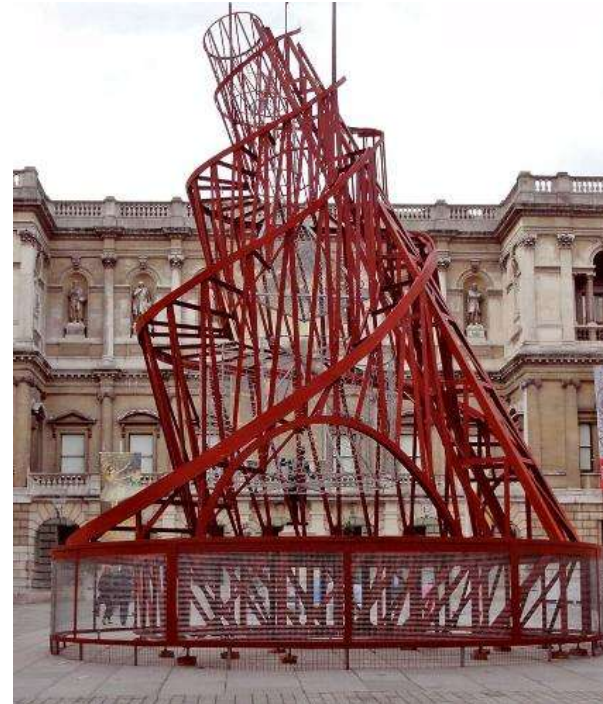


- Based on data about Hurricane Maria that destroyed 95% of homes in Puerto Rico and killed 4600 people in September 2017
- Each component of the collage is tied to a data point
- Miebach invites the viewer to feel like they are part of the storm

COMPARISON WITH CONSTRUCTIVISM



“The Andrea Gail”, Nathalie Miebach 2011
Reed, metal, wood, data



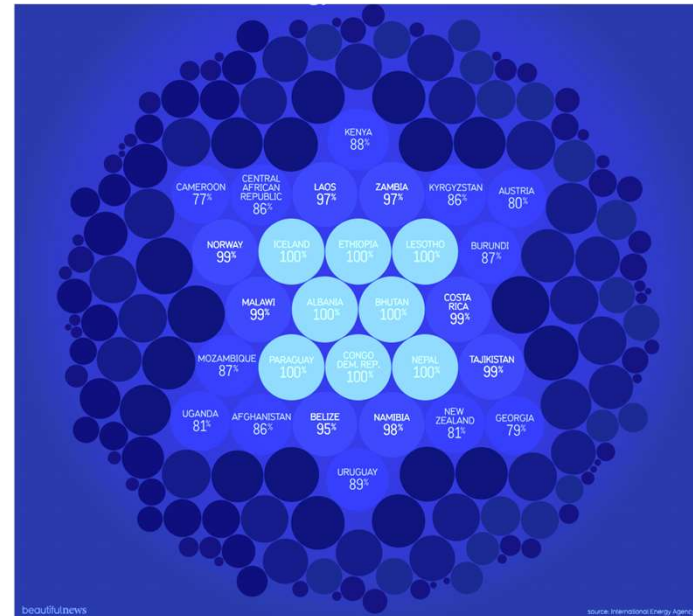
“Tatlin's Tower” (reproduction), Valdmir Tatlin 1920 (original)
Metal and wood

- obvious similarities in shape, structure, movement, and colour
- similar spiral form, geometric construction, and sense of movement
- both merge the themes of art, science, and architecture.

COMPARISON: MIEBACH TO MCCANDLESS



“Lake Michigan”
Nathalie Miebach, 2018



“Renewable Energy Superstars”
David McCandless, 2021

- Miebach: emotional, 3D, experiential
- McCandless: logical, 2D, analytical
- Both use geometric structures and shapes



RELATED AREAS TO EXPLORE

- Growing relevance for data art
- Constructivist geometric elements continue to appear in modern art
- Other artists that work with data
- AI and data art



CONCLUSION

Data is a viable artistic material

Constructivist aesthetics persist in modern art

Art helps us experience data

Data can be beautiful





QUESTIONS

- What value do you think data can contribute to art?
- How do you see the inclusion of data in art progressing in the future?
- Where else do you see elements of Constructivism appear in modern artworks or art movements?
- Would you consider using data in your own art?
- What personal data points could you draw upon to create art?



AGENDA – DID WE COVER EVERYTHING?

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THANK YOU