

Psychology & Report Design

Jon Lunn



About Me



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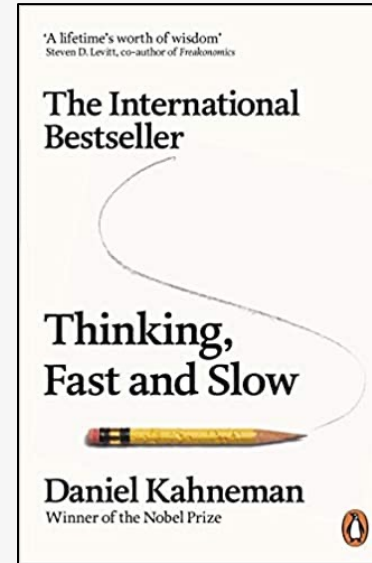
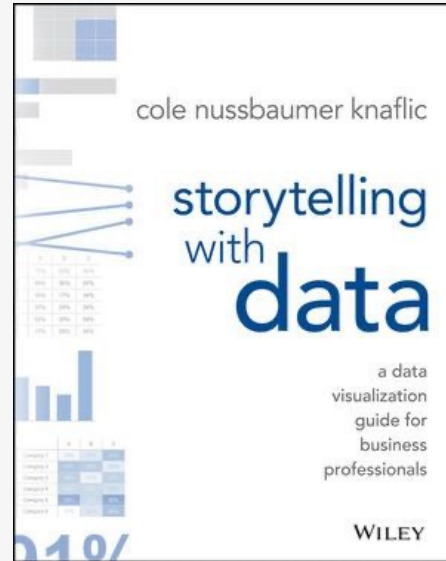
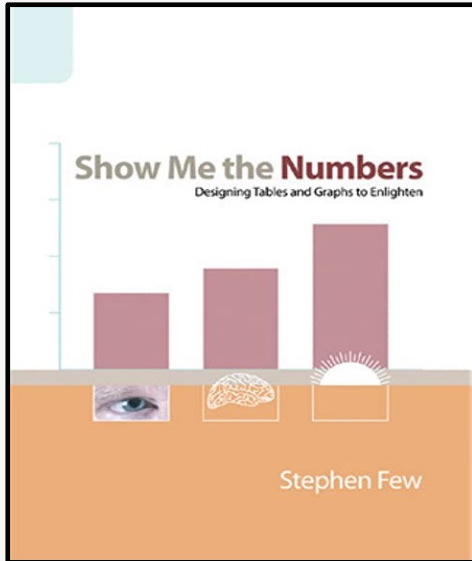
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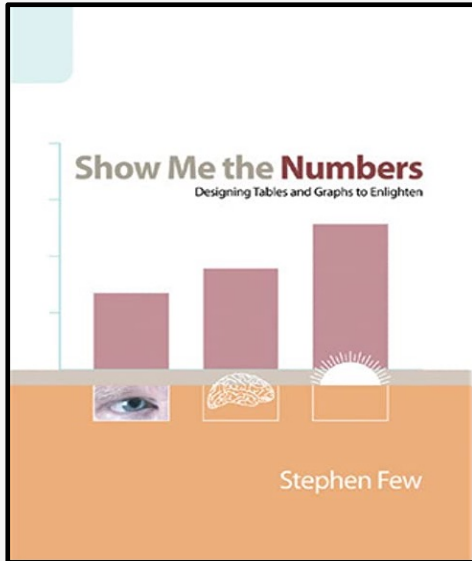
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Sources



Sources



cate effectively.

You see with your brain

Let's look at a simplified picture of how people see, depicted in Figure 4.1. The process goes something like this: light reflects off of a stimulus. This gets captured by our eyes. We don't fully see with our eyes; there is some processing that happens there, but mostly it is what happens in our brain that we think of as visual perception.

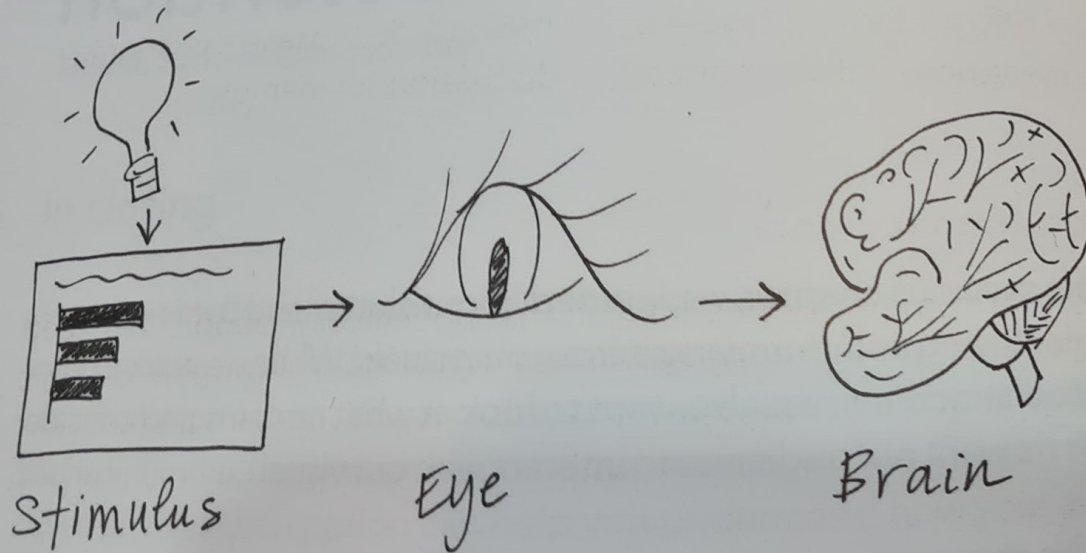


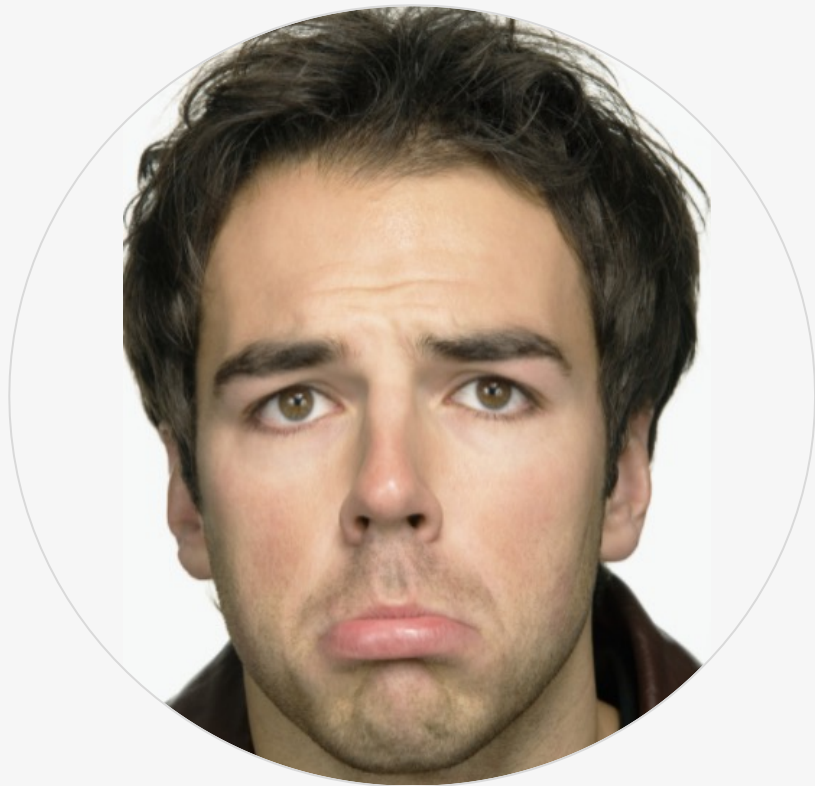
FIGURE 4.1 A simplified picture of how you see

Interactive Bit



Happy

Interactive Bit



Sad

Interactive Bit



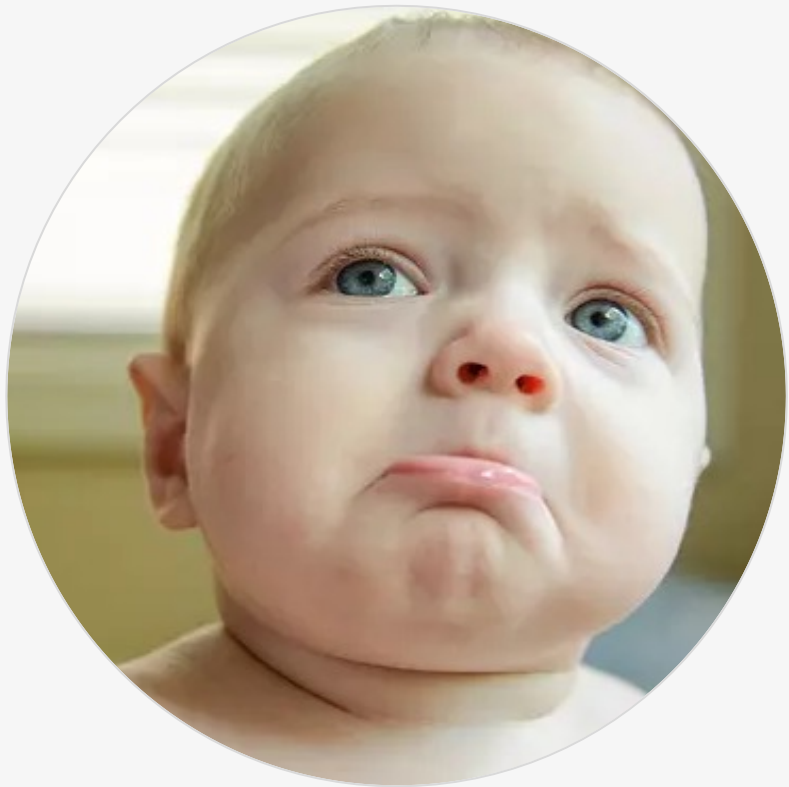
Happy

Interactive Bit



Angry

Interactive Bit



Sad

Interactive Bit

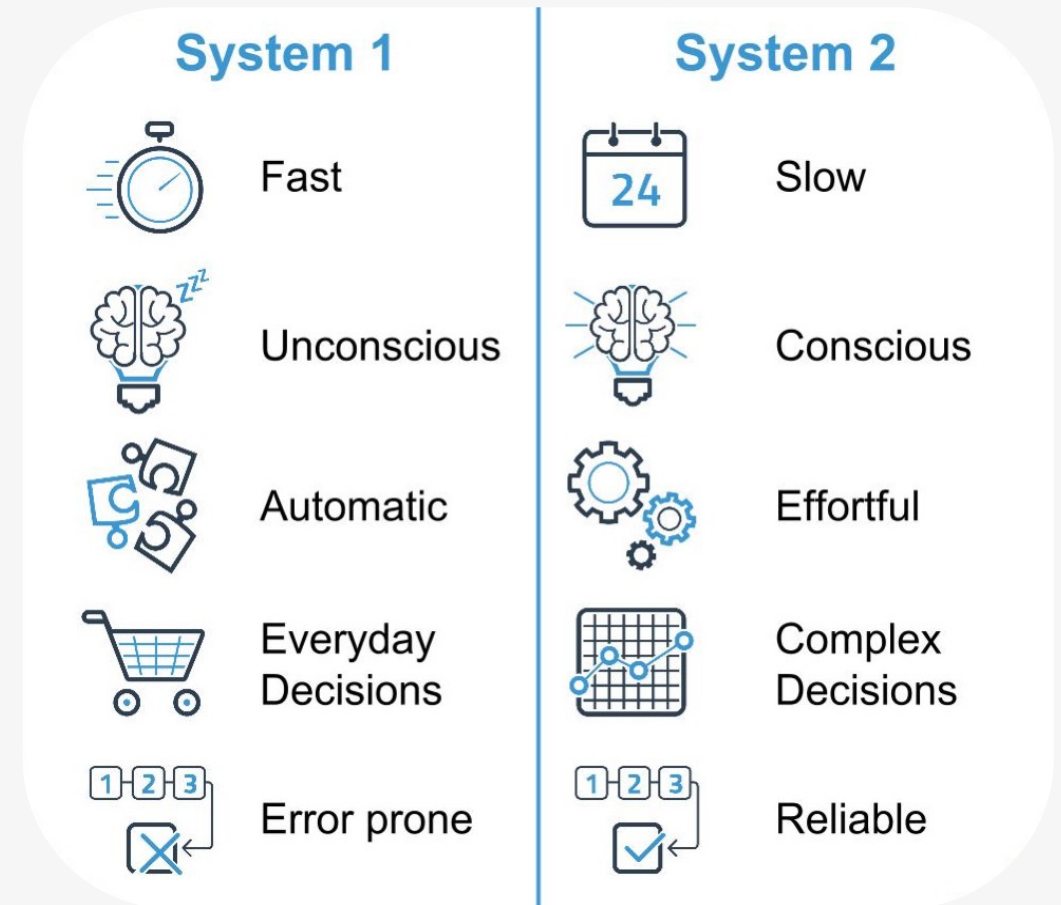
$$2 + 10 + 5 + 10 + 100 = ?$$

$$= 127$$

$$100 + 10 + 10 + 5 + 2 = 127$$

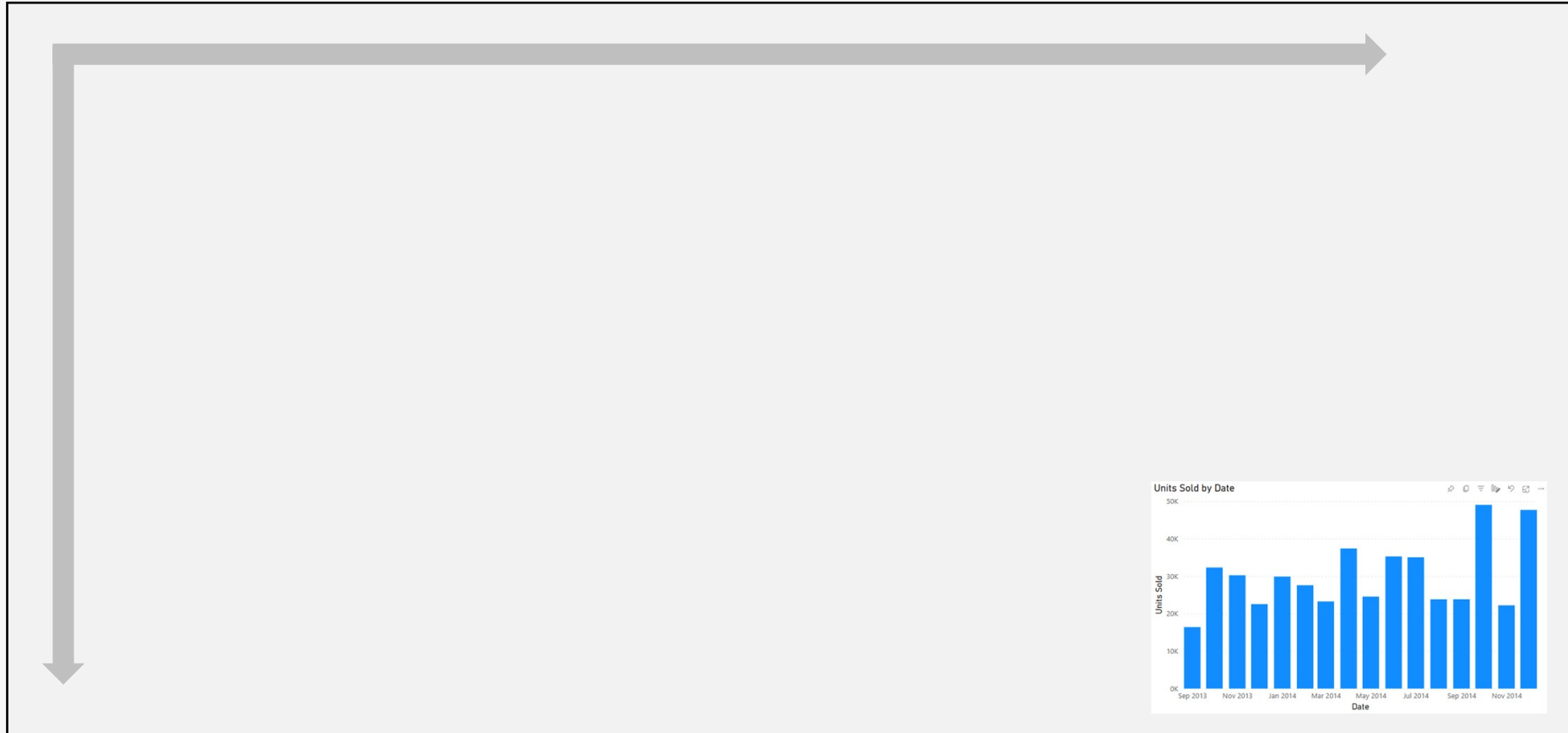
Dual Process Theory

- Intuitive (System 1)
 - Lower mental effort, automatic and effortless
 - System 1 will pass items to System 2, if they break the rules
- Attentive (System 2)
 - Higher mental effort
 - Physical responses – Pupil dilation, heart rate increase, glucose levels drop
 - Familiar tasks in System 2 may become System 1 tasks



[Image Source: System 1 vs System 2 Thinking \(researchgate.net\)](https://www.researchgate.net/publication/312111111)

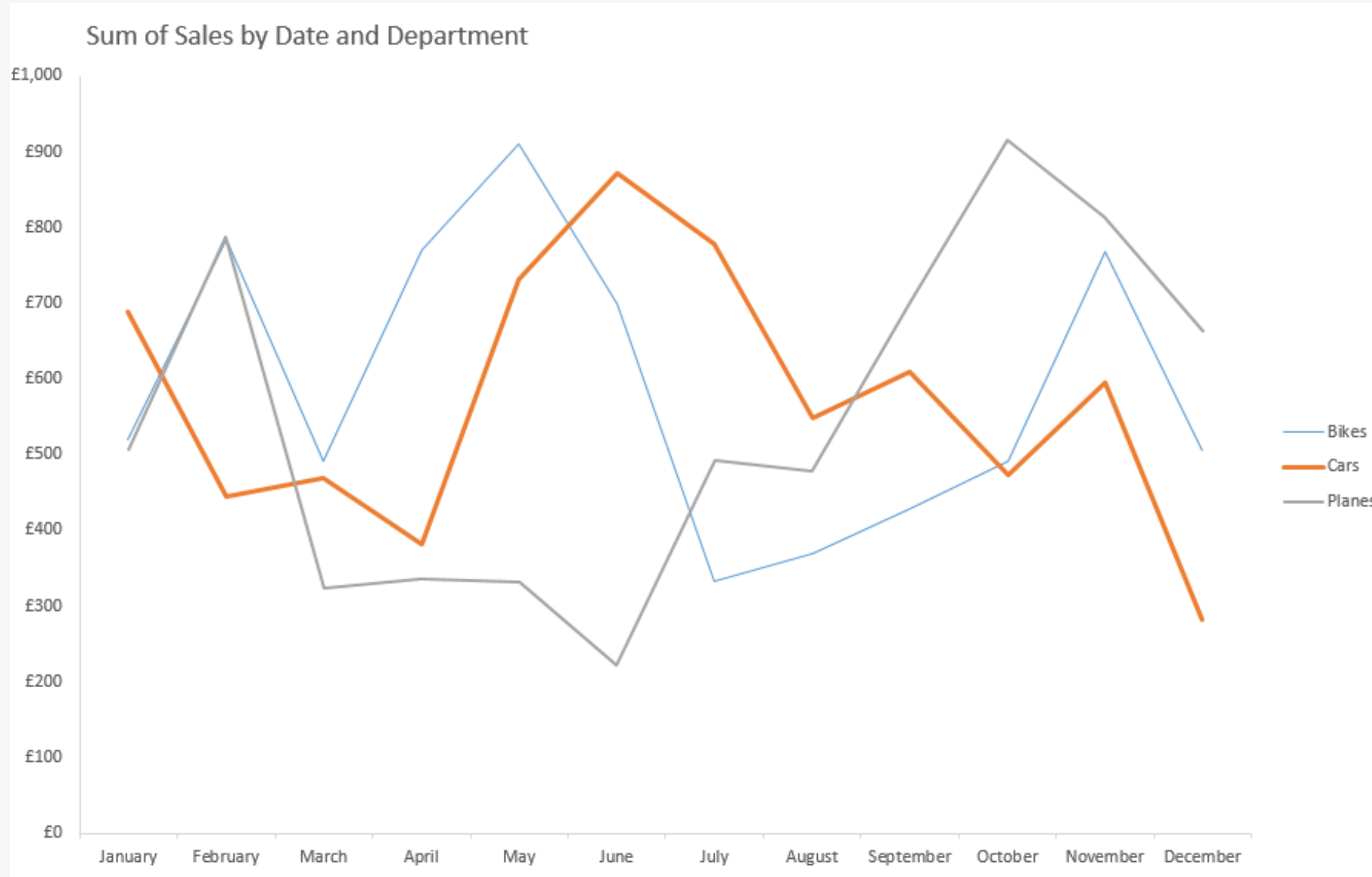
Layout



Initiative – Read from left to right, top to bottom

Note: Other languages may do it differently!

Remove distractions



Abstract numbers

How can you visualize or relate to numbers?

Try to visualize 15 dots (Tip - use dice patterns)

Initiative vs Attentive - When do you stop counting the dots as a child, then start recognizing the pattern?

Frequency Format

- Ratios are relative frequencies (how many)
- Percentages are 'chances', 'risk' or 'probability' (how likely)

5%

1 in 20

10%

1 in 10

You intuitively understand 'how many' more than 'how likely'

25%

1 in 4

33%

1 in 3

Abstract numbers – Frequency Format

Intuitive (System 1) can be prone to errors and bias

Which is worse?

- A disease that kills 1,286 people out of every 10,000
- A disease that kills 24.14% of the population
- Defense Lawyer: DNA will falsely match in 1 in 1,000 cases of capital cases
- Prosecution Lawyer: DNA will only be wrong in 0.1% of cases

Abstract numbers

Is there a best ratio to use?



Whiskas cat food 70/80's advertisement

- 8 out of 10 cats preferred it
- 4 out of 5 cats preferred it
- 80% of cats preferred it

Use the power of 10's

Round up or down, don't do '1.5 in 17'

Framing - Positive or negative context

Cat food

- 2 out of 10 cats refused it
- 1 out of 5 cats refused it
- 20% of cats refused it

Seeing the doctor

- 9 out 10 ten people will have no complications after surgery
- 1 in 10 ten people will have complications after surgery

References and Further Reading

Slide 1: Image [Master Of Science Degree - Psychology Icon Png PNG Image | Transparent PNG Free Download on SeekPNG](#)

Slides 18 -20: Thinking, Fast and Slow, Chapter 'Rare Events'

Further Reading

Storytelling with Data: A Data Visualization Guide for Business Professionals - Cole Knafllic

Show me the numbers – Stephen Few

Thinking, Fast and Slow – Daniel Kahneman