

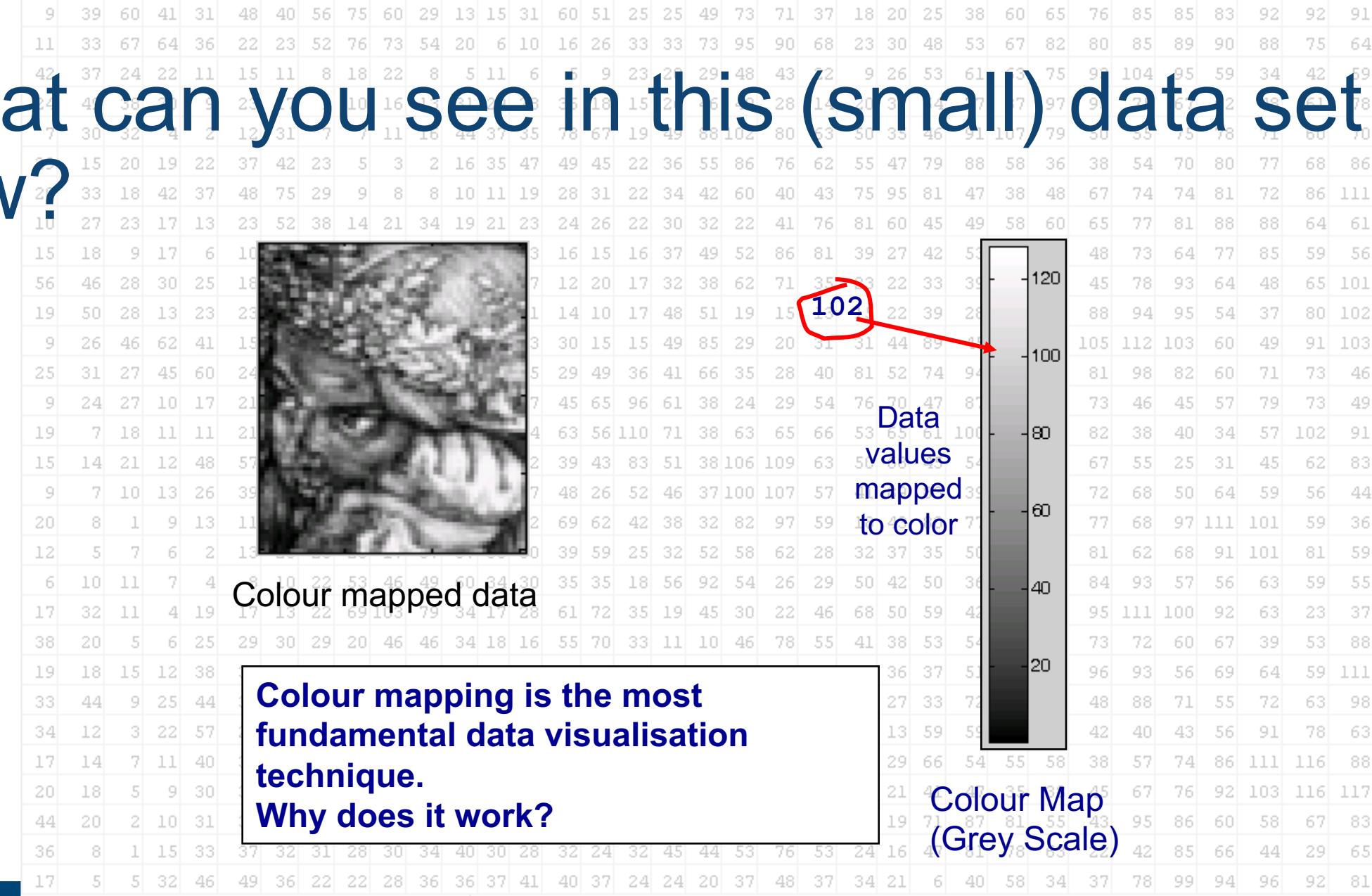
Visualising anything is hard, let alone
complex scientific or engineering
datasets

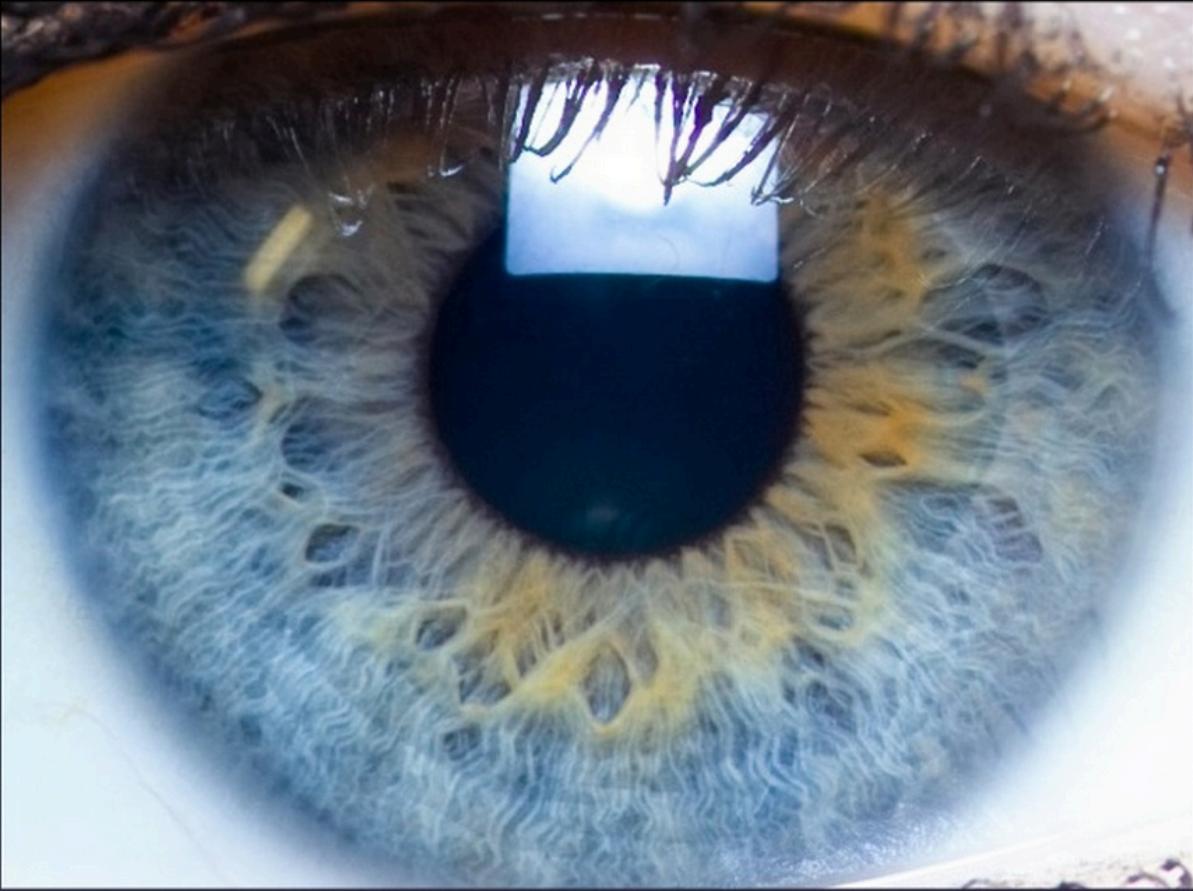


NASA hubble
telescope

What can you see in this (small) data set?

What can you see in this (small) data set now?





80% of the brain is dedicated to
visual processing

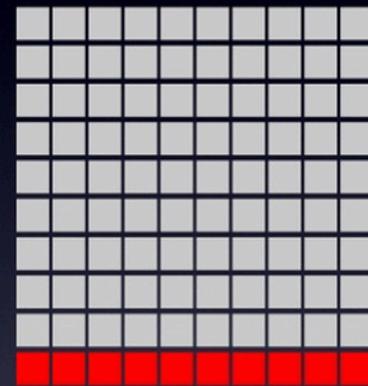
University of Rochester, 2004



The human brain is a
pattern recognition machine

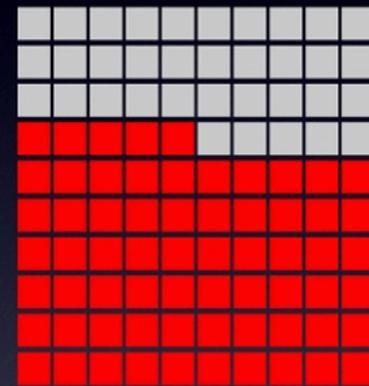
Picture Superiority Effect

Memory retention after 3 days



10%

Text or Audio Only



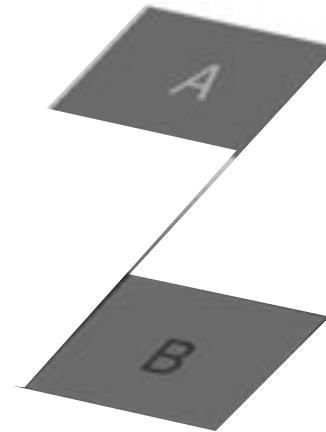
65%

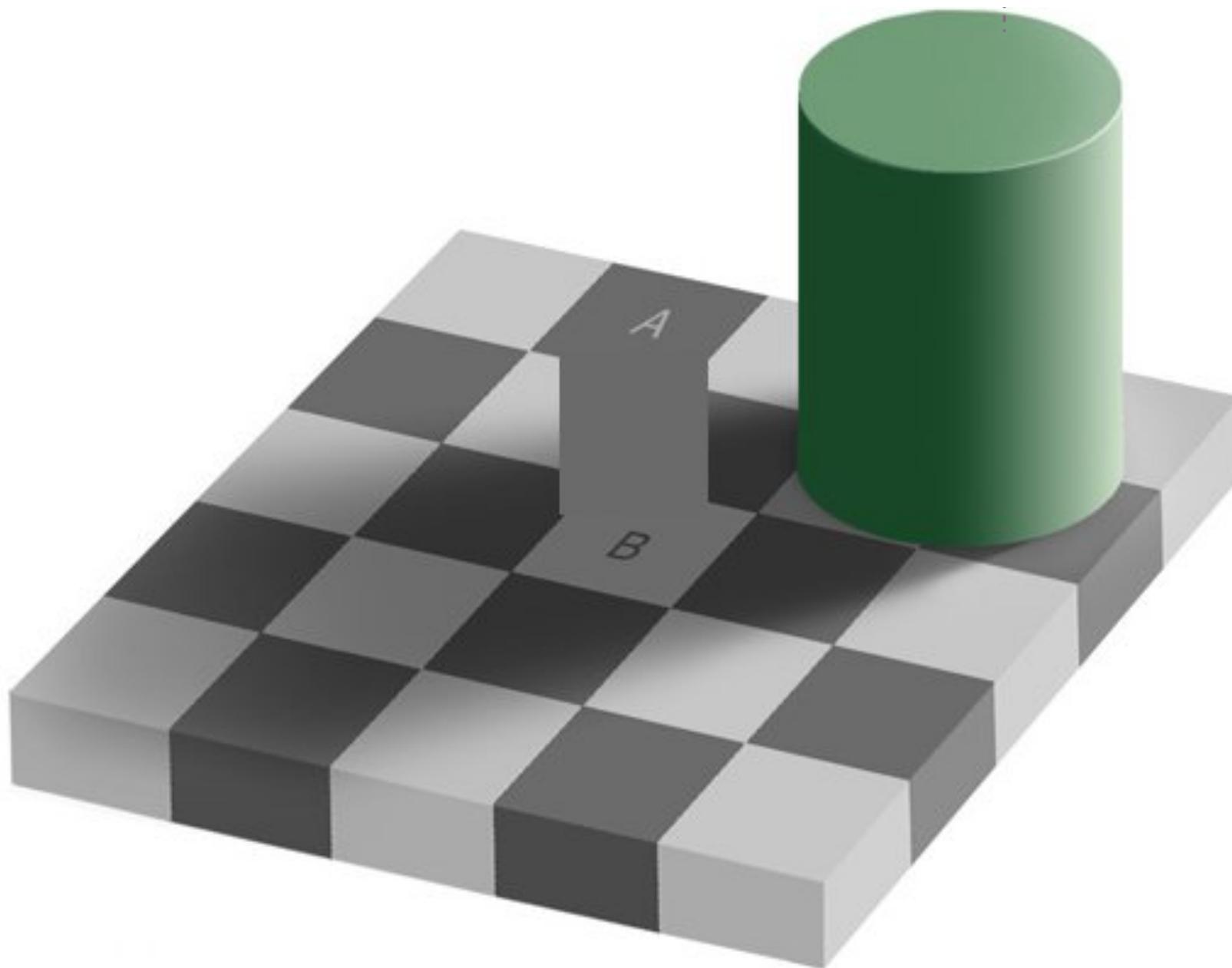
Text + Picture

European Journal of Cognitive Psychology 18(6), 2006

But our eyes, and our brains, can be misled

Which square is darker – A or B?





One gotcha (of many): Simultaneous contrast



Fig. 4. Pixels of the same luminance may look different depending on the surrounding pixels.

Courtesy: Diverging Color Maps for Scientific Visualization (Expanded), Kenneth Moreland, Sandia National Laboratories

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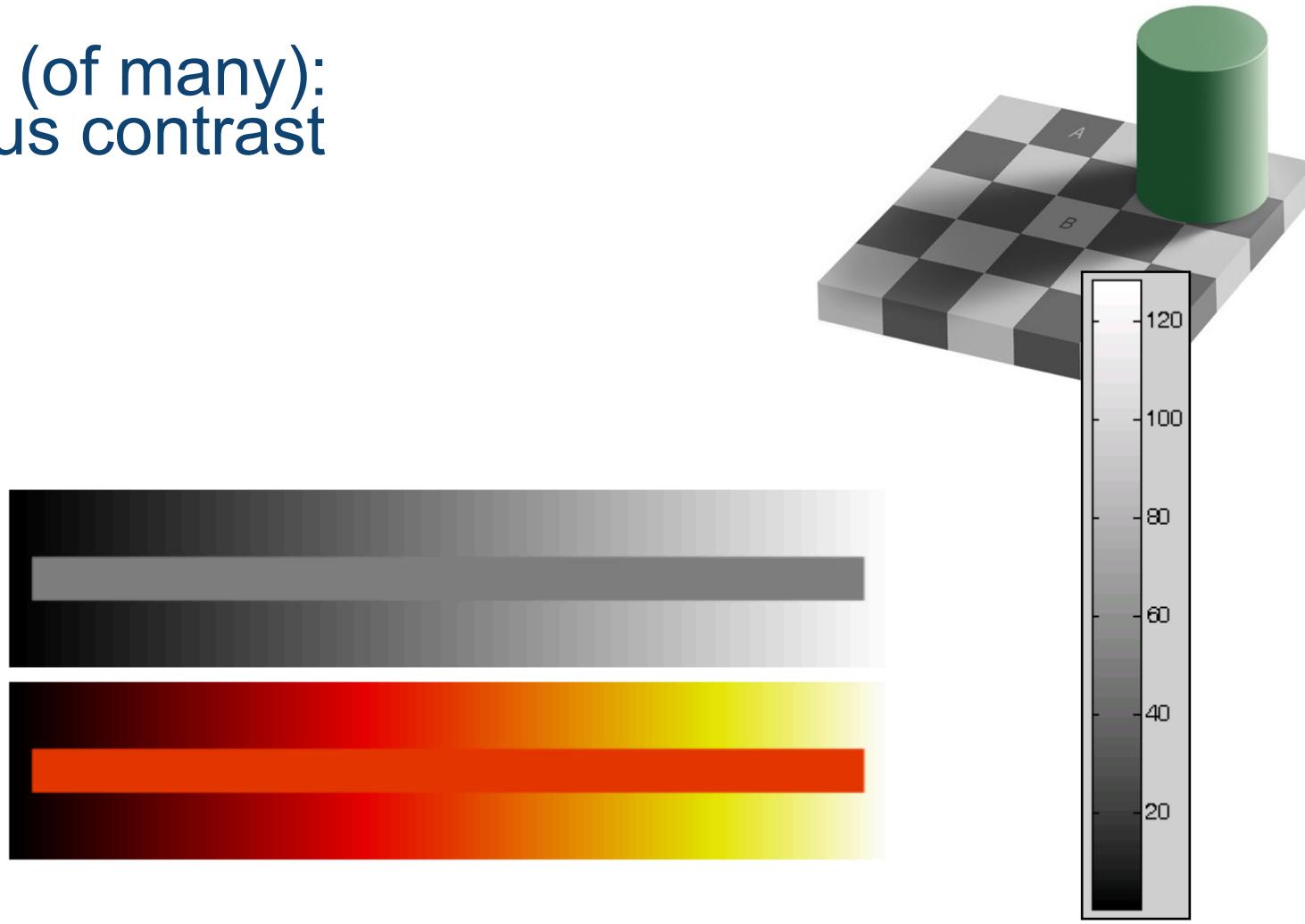
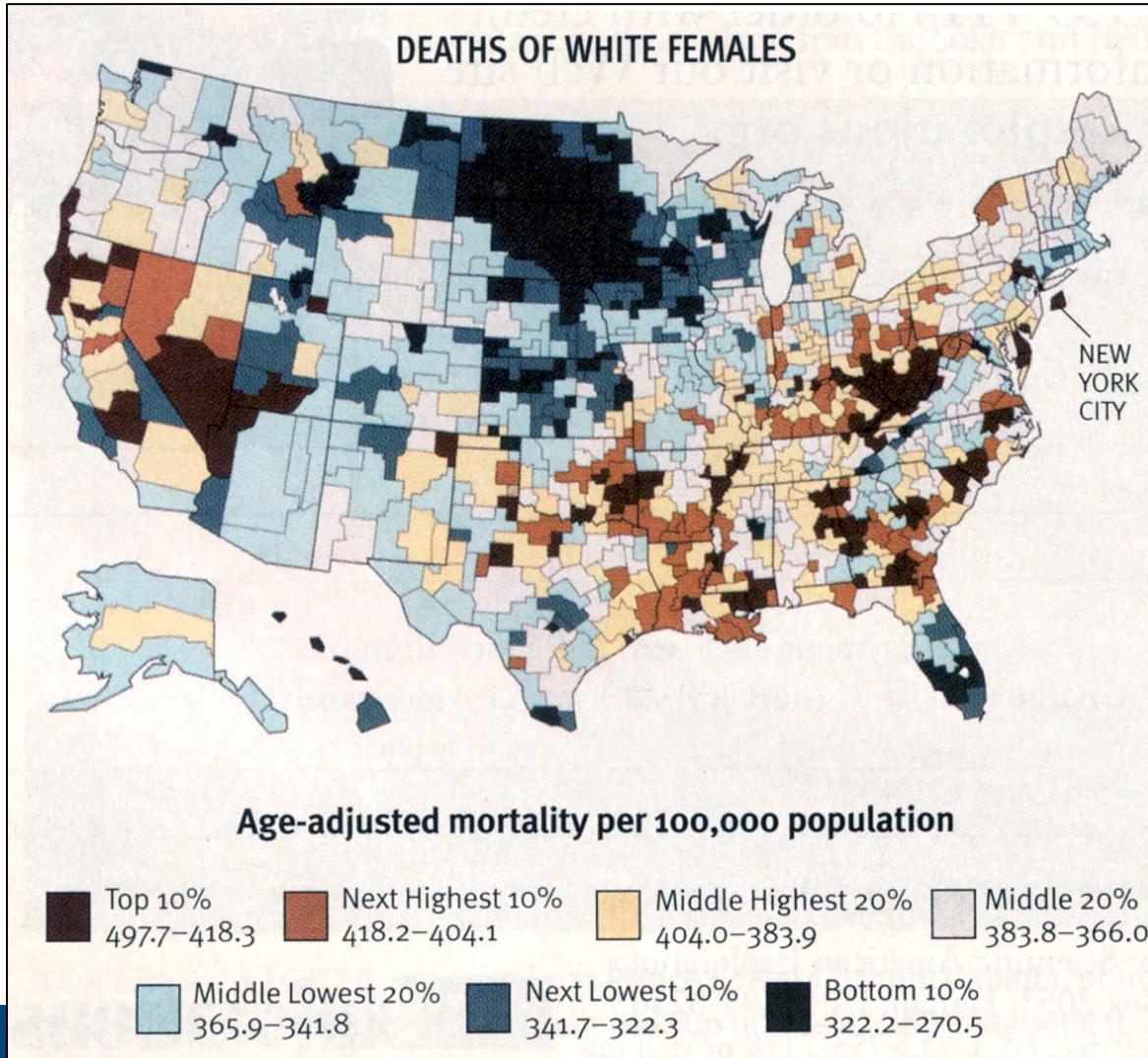


Fig. 4. Pixels of the same luminance may look different depending on the surrounding pixels.

Courtesy: Diverging Color Maps for Scientific Visualization (Expanded), Kenneth Moreland, Sandia National Laboratories

What's wrong with this visualisation?

Source: *Scientific American*, July 2000, p22



Data is tricky – let's not make it trickier

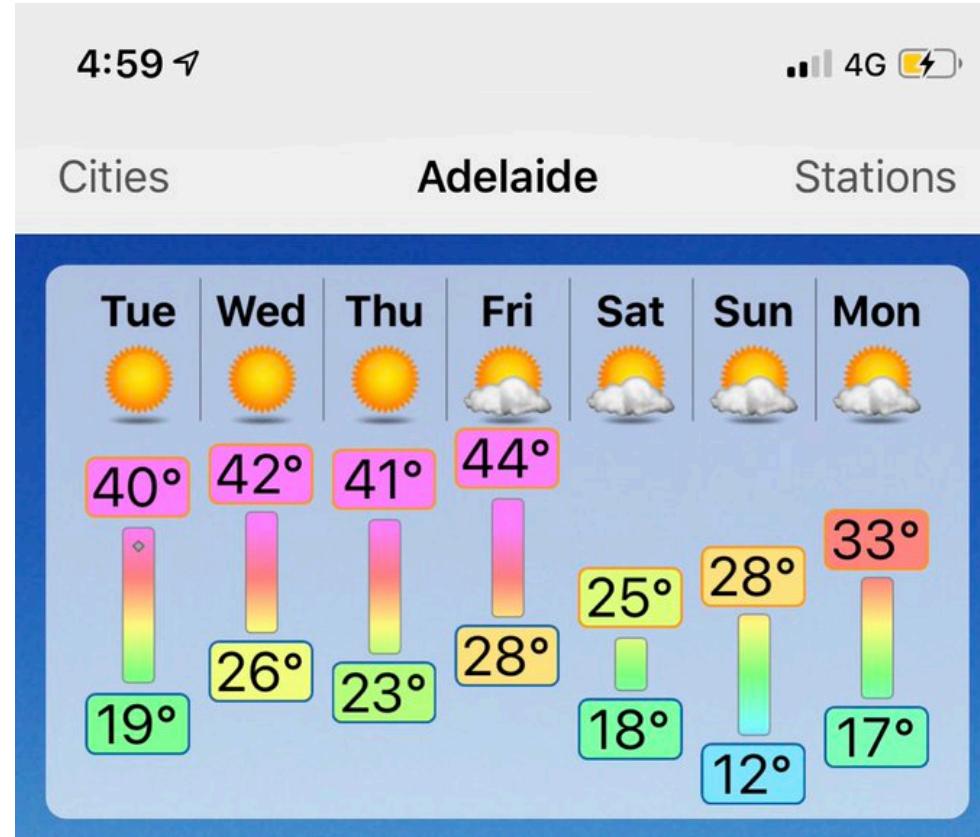


Image credit: A/Prof Amie Albrecht