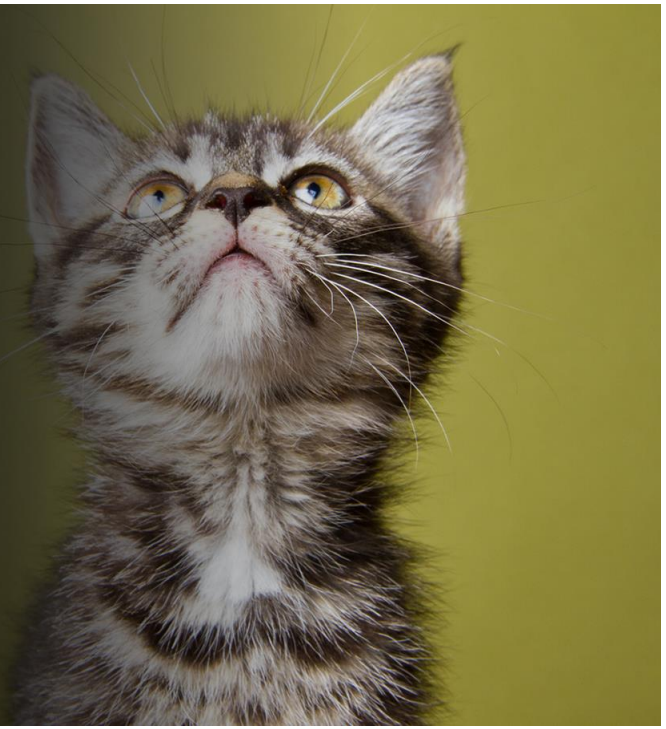
Studying comparative Psychology – the journey so far

(based on empirical evidence)



ASAB
The Association for the Study of Animal Behaviour

ASAB has sponsored this workshop.
Do check out www.ASAB.org/education, there are loads of lesson plans, videos, and more – all free!

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Back at the Start

- Cultural norms and beliefs
- They vary !
- Factors include social and religious norms/beliefs, and time as in century or decade
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- Guidelines
- In the UK there were no official or national guidelines on what was/was not acceptable until 1980s when both the British government passed a law (1986) regulating laboratory use of animals, and the BPS published its first guidelines on the ethical use of animals in research in 1985, which became mandatory for all psychologists working in the UK in 1987. Like the guidelines for having human participants this is revised every so often, the latest version being in 2000.

Why did it take so long?

- HISTORY
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THE CHURCH

- SPECIFICALLY , The Establishment and therefore theoretically everyone took the words of the Bible literally.

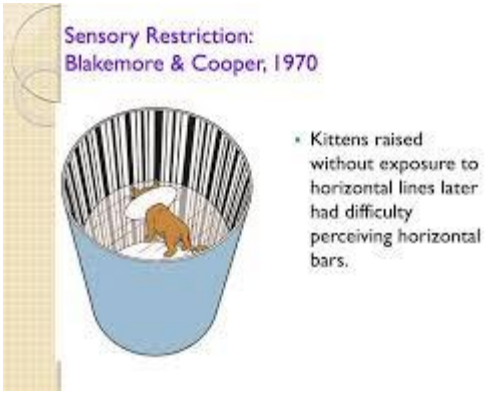
- God made the world in stages over one week
- Top living creation was Man
- Man was given the rest of creation to use for his benefit

Animal Rights 1

- We can research more scientifically if we use animals
  - They can be deprived of their mothers (Harlow, 1950s-1960s)
  - Reared in unnatural environments (Blakemore 1970s)

BUT already many were asking the question

  - **We CAN do this, but SHOULD we be doing this?**



SCIENCE 1

- We can control variables so much better with other animals than if we use only humans

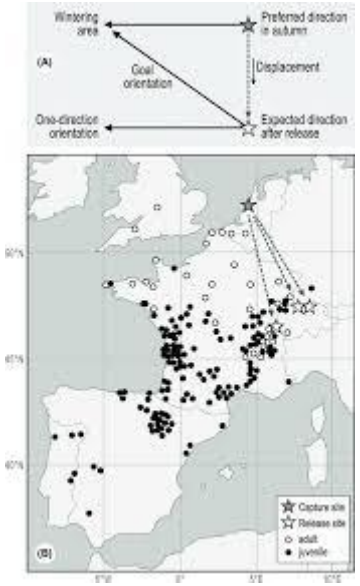
❑ True – amount, quality, frequency of food available for example

❑ This enables better establishment of CAUSE & EFFECT

❑CAN or SHOULD, again?

Our COVENIENCE?

- Choosing certain species with short life spans , short gestation periods and short maturation means we can
  - ✓ observe the whole process of development
  - ✓ From one generation to another
  - ✓ Controlling environments as well
  - ✓ Easy “longitudinal” studies
- Perdeck’s common starlings (1950s, 1960s)



- And gives us the power to differentiate between Nature and Nurture
  - **BUT SHOULD WE … ?**

EVOLUTIONARY THEORIES?

- Comparing ourselves with other animals can help see
    - what we have in common or how we differ, particularly re the brain (more later)

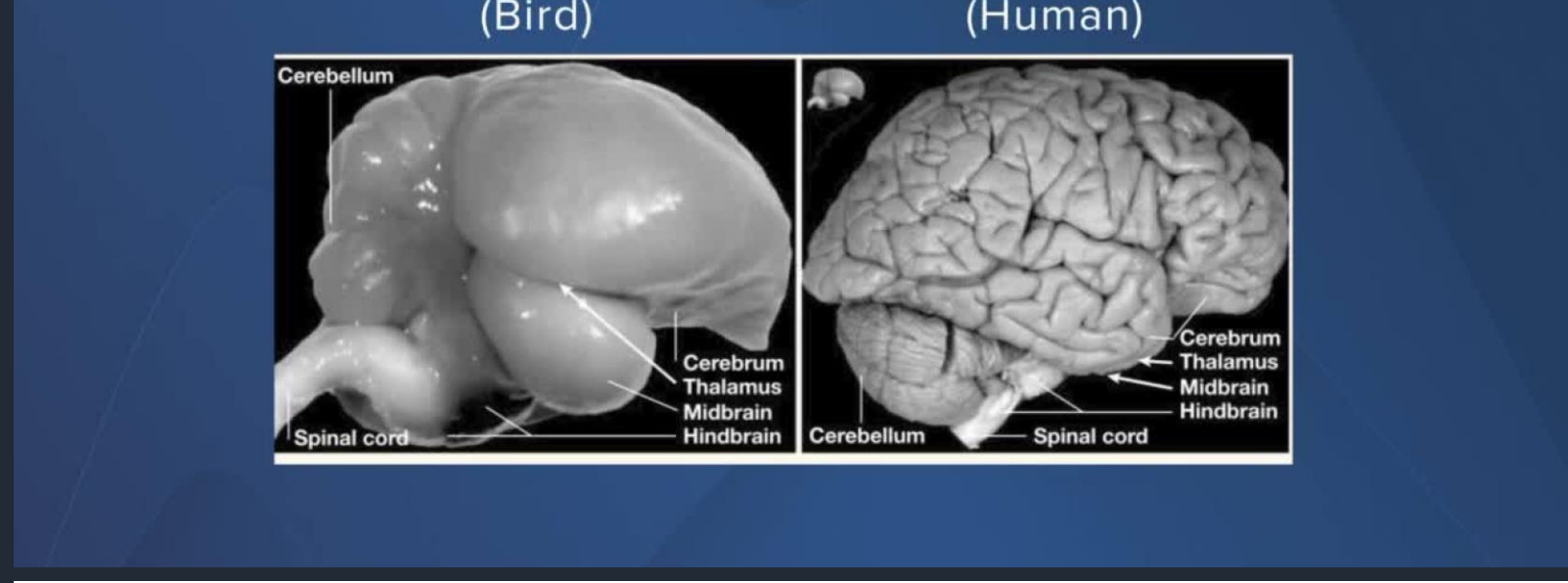
  and, for example, gain understanding about behavioural traits such as Handedness
    - Recent primate observation research suggests

  “coming down from the trees may not be linked with us

  and other ground dwelling primates mainly being right handed.

  Though this has to be theory, until actual evidence such as from the fossil record, is found.
- Leading to new, fresh ideas about ourselves!

The BRAIN 1



- **Ours is**
- **BIGGER!**
- **BETTER!**
- **WE ARE TOP ANIMAL!**

The Brain 2

- Size is not everything
- Brain to whole Body size is more useful
- Density of neurons is important
- Connectivity is important

Humans have on average 0.23 billion brain neurons per kg, with just over 13.3 billion neurons per kg of brain tissue. For African elephants the figures are 0.002billion neurons/kg, and 1.99 billion neurons/kg brain tissue

Human	African Bush Elephant
primate	non-primate
1232 g	2848 g
16.3 billion	5.59 billion

Problem Solving 1

- Once it was accepted that we alone are complex problem-solvers, problems which need solving in stages, whereas other animals almost mindlessly perform trial and error until the problem is resolved.
- Not so – from the classic observations of captive chimps using insight learning to use a small stick to pull a longer one into the cage to then reach a treat/rewards, to BBC film of wild chimps stacking boxes to gain one we can see complex problem solving in other animals including my favourites, New Caledonian crows

Problem Solving 2 and Culture

- Both primates and birds also show what we'd call culture. Last year at the ATP I showed videos of wild chimps drumming, carrying stones to lay them at the foot of certain trees.
- Betty the Crow, who started my engagement with the corvids, though as she was caught in the wild there is no way of knowing what experiences she had before living in captivity
- Decades ago Andrew Whiten at the University of St Andrews' team observed and filmed some African chimps making their young sit, watch and practice getting food, and getting a quick slap if they didn't pay attention. No we are not unique and special in having culture, which varies from group to group, and which is taught to our young.
- Christophe Boesch's article for the British Academy in 1996 is available, see references, specifically addressing culture in chimpanzees

What now?

Different cultures, different times, different norms, different discussions.

In one country all great apes and whales have human-type rights.

- **Many countries have rules, in the UK there are legally binding guidelines on the use of animals in psychological research**
- Citizen Science and Observational studies are more common
- There is widespread agreement limiting research using endangered species
- Knowledge and treatment of animals used must be good
- The fewest number of animals are used and only worthy research is allowed

REFERENCES

- Betty the Crow https://users.ox.ac.uk/~kgroup/tools/tool_manufacture.shtml
- Boesch https://www.thebritishacademy.ac.uk/documents/3956/88p251.pdf
- Blakmore and Cooper's kittens https://www.nature.com/articles/228477a0
- Handedness https://www.newscientist.com/article/2425718-left-handed-monkeys-prompt-rethink-about-evolution-of-right-handedness/
- Harlow's monkeys https://www.psychologicalscience.org/publications/observer/obsonline/harlows-classic-studies-revealed-the-importance-of-maternal-contact.html
- Perdeck's starlings https://www.tandfonline.com/doi/abs/10.1080/00063656709476158

FUN!!!

- **How to walk through a postcard, aka how folding increases surface area enormously.**

- **You need a piece of card and a pair of scissors.**
- **Fold the card lengthways, then make cuts all along the folded edge about 6mm apart stopping about 3 mm short of the free edges. What you have looks a bit like a paper comb.**
- **Turn the card round so the long unfolded edged are facing you and make more cuts inbetween the others also stopping about 3mm of the folded edges.**
- **Then CAREFULLY, cut through all the folded edges EXCEPT THE FIRST AND LAST.**
- **You can now open out the card into a very large sort of ciecular shape, very long surface!**