

Towards an understanding of animal personality

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1. Lorenz, Tinbergen and von Frisch
2. Assessment of human personality
3. "Objective animal behaviour science
4. "Personality" in cattle

1 Lorenz, Tinbergen and von Frisch

Lorenz, Tinbergen and von Frisch

- Shared Nobel Prize 1973
- Wanted to turn ethology “respectable”
- No joy in human psychology research
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 - ontogeny

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-evolution

2

Assessment of human personality

Greco-Roman assessment of human personality

- Four humours

Hippocrates' four humours

(Approx 400BC)

Blood **Yellow** **Black bile** **Phlegm**

bile

Produced in **Liver** **Gall** **Spleen** **Brain, lungs**

bladder

Season **Spring** **Summer** **Autumn** **Winter**

Element **Fire** **Water** **Earth** **Air**

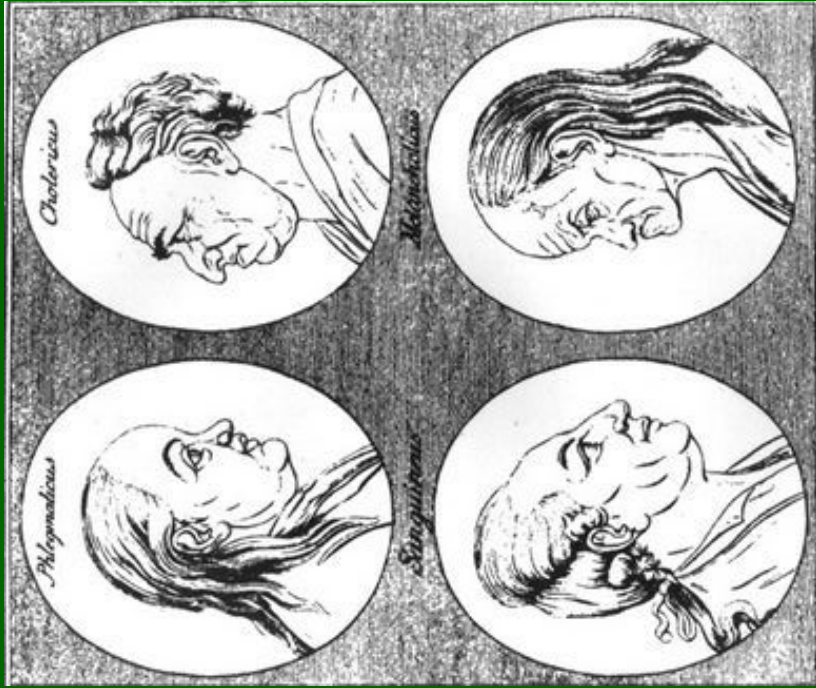
Characteristic **Courageous, Easily** **Despondent, Calm,**
amorous **angered** **sleepless** **unemotional**

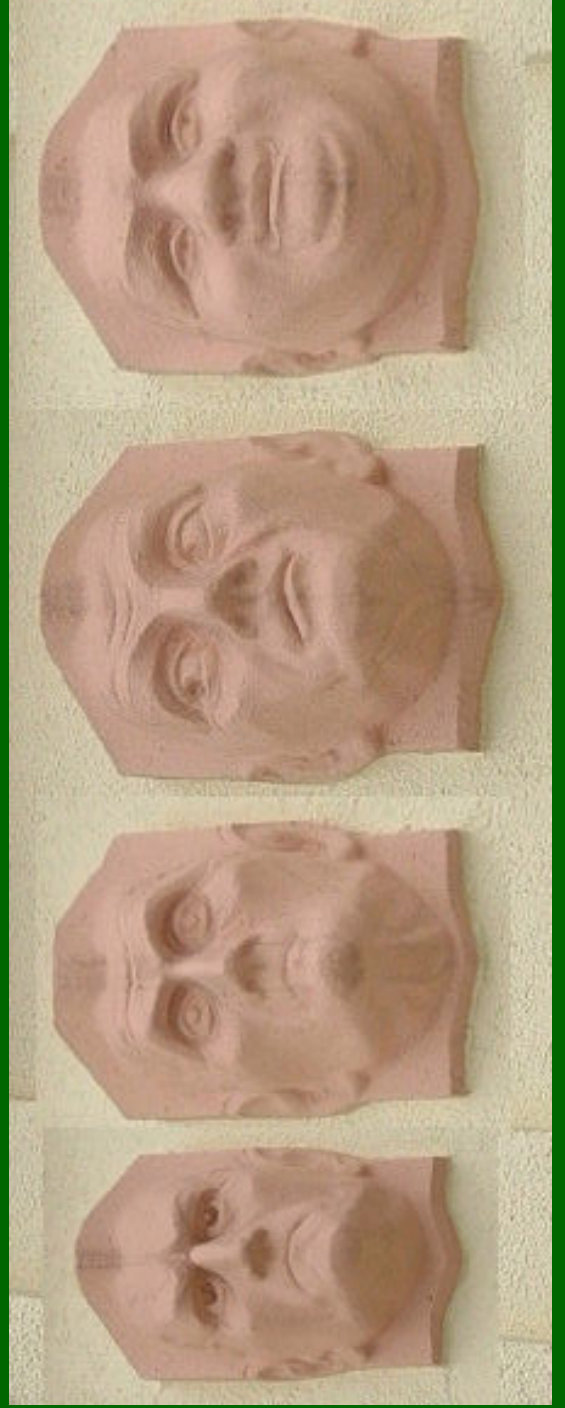
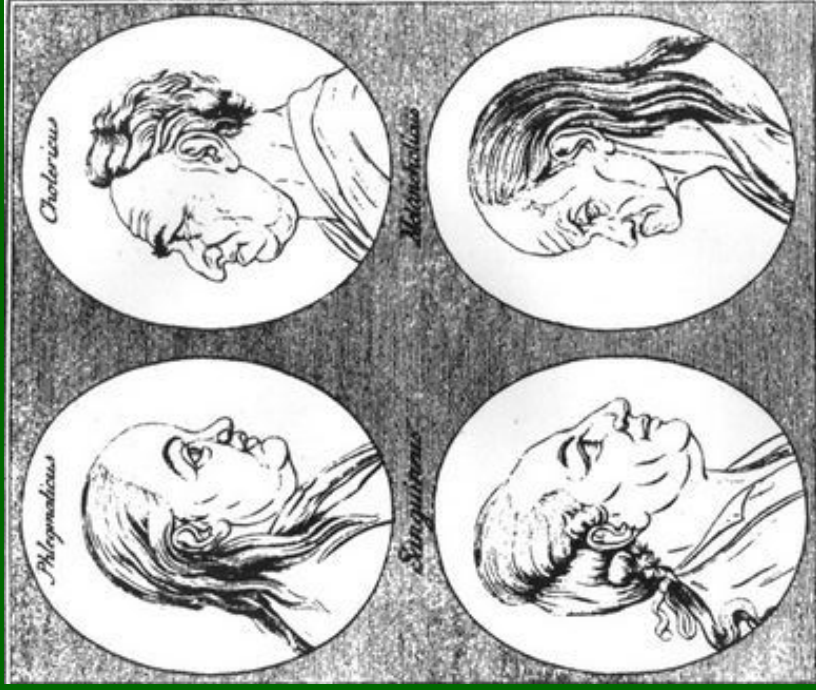
Hippocrates' four humours

Blood	Yellow	Black bile	Phlegm
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Aristotle	Sensuous	Moral	Acquiring	Logical
	pleasure	virtue	property	investigation

Galen	Sanguine	Choleric	Melancholic	Phlegmatic
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More recent approaches

- Innovative, doctrinaire, traditional, sceptical (*von Adicke, 1905*)
- Social useful, ruling dominant, avoiding, getting of learning (*Adler, 1912*)
- Artistic, religious, economic, theoretic (*Spränger, 1914*)
- Hypomaniac, hyperaesthetic, depressive, anaesthetic (*Kretschmer, 1920*)

More recent approaches

- Exploitative, receptive, hoarding, marketing (*Fromm, 1947*)
- Sensory-perceptive, intuitive-feeling, sensory-judgemental, intuitive-thinking (*Myers 1958*)
- Artisan, idealist, guardian, rational (*Keirsey, 1998*)

More recent approaches

- Lexical hypothesis

Lexical hypothesis

- Basic premise: personality differences will be reflected in people's language
- Allport and Odbert (1936)
 - 18,000 personality-describing words
 - reduced to 4,500
- Cattell (1957)
 - eliminated synonyms
 - reduced total to 171
- Several studies applied this lexical approach and distilled it into five factors

More recent approaches

- Lexical hypothesis
- The "Big Five"

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 - Neuroticism

The "Big Five"

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 - cooperative
- Neuroticism
 - angry, anxious, vulnerable

More recent approaches

- Lexical hypothesis
- The "Big Five"
 - Openness to experience
 - Conscientiousness
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 - Agreeableness
 - Neuroticism
- Samuel Gosling has applied these to animals (dogs, cats, ferrets, rabbits, horses, hedgehogs)

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 - Reward dependence
 - Persistence

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- Then added three self-concept dimensions

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 - Self-directedness

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 - Self-directedness
 - Cooperativeness

More recent approaches

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 - Self-directedness
 - Cooperativeness
 - Self transcendence

The Temperament and Character Index

- Novelty-seeking, harm avoidance, reward dependence, persistence are heritable and comprise TEMPERAMENT

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- The mix of these comprises **PERSONALITY**

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- Self-directedness, cooperativeness and self transcendence change over life and comprise **CHARACTER**
- The mix of these comprises **PERSONALITY**
- Standing up to scientific scrutiny

3

**“Objective” animal
behaviour science**

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- Fraser (1957) - 76 bulls in Scottish herds, six behavioural categories

Fraser's categories (examples)

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- irrationally apprehensive ranging from timidity to outright fear

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- Tulloh (1961) - “subjective and represents an anthropomorphic approach”

Tulloh's crush and bail scores

- Entering crush
 - 1 = enters without hesitation

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 - 1 = stands quietly, barely moves ("docile")
 - 6 = wild, violent movement

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- Ratings and Free-Choice Profiling

Ratings and Free-Choice Profiling

- Used extensively in the food and beverage industries

Free-Choice Profiling

- Assessors able to choose their own language

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- Language-specific analysis, generalised Procrustes statistics

Free-Choice Profiling

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- Language-specific analysis, generalised Procrustes statistics
- Experience of assessors not necessary

Ratings

X

Juiciness

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- Used extensively in the food and beverage industries
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Ratings and Free-Choice Profiling

- Used extensively in the food and beverage industries
- Beef CRC work shows people are better discriminators than objective measures
- Both ratings and free-choice profile have been used in the study of animal behaviour

Ratings

x

Shy

Bold

Free-choice profiling

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 - used generalised Procrustes analysis

4

“Personality” in
cattle

"Personality" in cattle

- Kilgour *et al* (2006) have shown three possible "dimensions"

Cattle personality

Crush and bail

Flight time

Flight distance

Open field

Restraint

Lateralisation

Novelty

Startle

Fear of humans

Sorting

Following

Cattle personality

General agitation (25%)

- Restraint
- Open field
- Following
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Reaction to restraint (9%)

- Crush and bail entry

Restraint test



Open field



Following



Fear of humans



Fear of humans



Flight distance



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- TCI approach

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- TCI approach
- Use both objective measures and free-choice profiling

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