

Mental Abilities

What is intelligence?

- IQ scores (intelligent quotient) relates to something meaningful and it could be reliably measured
- More than one type of intelligence (i.e. Emotional) and there's group differences (i.e. gender)
- Intelligence is determined by genes (i.e. from parents) and by environment (i.e. social groups)

General theories of intelligence: implicit theories

Implicit theories are there in our heads e.g. 'boy, he is dumb' makes sense to use. These theories are the basis of explicit theories

- Our notions of intelligence suggests 'there's more to IQ than solving abstract puzzles!', saying that intelligence is more than what it measures
- E.g. Implicit theories of cognitive modifiability
- E.g. Entity theorist (believed abilities are fixed- innate and cannot be changed)
- E.g. incremental theorists (believed abilities are changeable- one comes across challenges, they see it as an opportunity, thus invests more effort achieving better educational outcomes)
- Dependent on an individual's beliefs: if fixed→ they believe they cannot improve and have reached their limit and this causes a withdrawal from the learning process resulting in a poor performance
- Intelligence relates to success in cognitively demanding tasks (but not necessarily highly related)

Experts discarded ones they disagreed with- Remainder 3 factors

- Verbal intelligence: good vocabulary, converses easily on lots of subjects, updated
- Problem solving: makes good decisions, poses problem in optimal way, plans ahead
- Practical intelligence: sizes up situation well, determines how to achieve goals, displays an interest in the world, thus how to function in different social contexts

General theories of intelligence: explicit theories

These are theories that scientists had come up with and it uses data collected from people performing tasks that require intelligent cognition

- Theorist defines the psychological construct through either the whole domain (intelligence), or useful subsets (i.e. verbal performance)
- Theories supported by indirect evidence (i.e. SES, geographical location), taking into account the internal consistency of the measure (i.e. within-measure) and the correlation with other behavioural measures
- How one conceptualises intelligence will influence how it will be assessed

Theories of intelligence (Metaphors of Mind- Sternberg, 1990)

Geographical (psychometric)- use of the map as a metaphor

- Mapping the relationship between different cognitive abilities and their correlation
- Structure of intelligence (rather than process) thus factor analysis
- Data considers sources of individual differences
- i.e. Age related cognitive decline: knowledge is acquired through time and plateaus as we age

Epistemological (developmental)- philosophy of knowledge in its development

- Primarily based on the cognitive development work of Piaget

Computational (information processing)- mind as a computing device

- Process of intelligence/cognition (rather than structure) (i.e. input- process- output)
- Data considers commonalities across people and differences across stimuli

Contextualist- impact of different contexts on learning and assessment (defined by environment)

- Influence of experience and acquired knowledge on performance

Other approaches:

- Biological- functioning of the brain, localisation of specific abilities/intellectual functions
- Anthropological- intelligence as a cultural invention (i.e. western different from eastern)
- Sociological- socialisation and the development of intelligence, cognitive development occurs through active social interaction (Lev Vygotsky)
- Systems- interaction of multiple systems/intelligences

Historical foundations:

In the late 1800s- there was a move around the world to collect skulls from different cultures, measuring the volumes and classifying the skulls (i.e. by race) with the view that a Caucasian skull had larger brains/skulls thus a higher intelligence

- This is evidence for the act of slavery whereby people treated others like slaves due to group differences to support pre-existing expectations

Alfred Binet (1900s)

French, he was approached by the government to develop a test for a child's intelligence thus developing IQ as known as Binet's scale

- Techniques to identify children who lack success in normal classrooms and needed special ed
- Used a series of reasoning tasks related to everyday problems of life but involving basic reasoning processes
- Learned skills like reading were not treated explicitly

Alfred Binet's goal:

- Identification and education- the scale was devised only to identify students in need of remedial education (i.e. to help and improve)
- Modifiability of intelligence
- Intelligence in any meaningful sense of the word, can be augmented by good education; it is not a fixed and inborn quantity

Binet's stipulations

- The scores are a practical device (does not interfere with any theories of intellect, does not define anything innate)
- The scale is rough (guide to identify mildly-retarded children, not a device to rank normal children)
- Low scores shall not be used to mark children as innately incapable

H.H. Goddard introduced Binet's test to USA

- Goddard used it to prevent immigration and propagation of 'morons'
- i.e. Testing at Ellis Island for feeble-mindedness women- concerned that they will degenerate stocks and cause social problems

- Goddard regarded the scores as measures of a single, innate entity