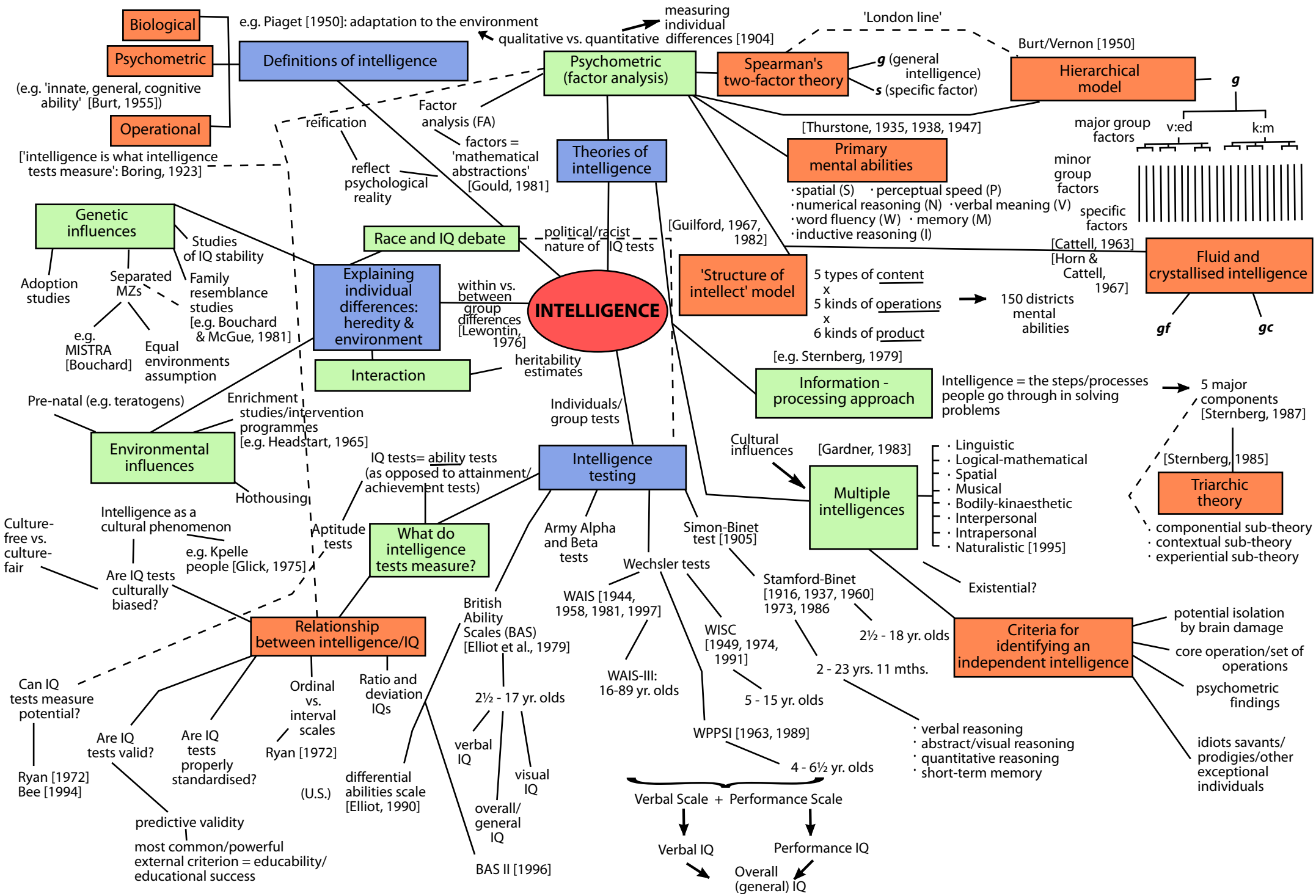
INTELLIGENCE
Definitions of intelligence
Biological
Psychometric
Operational
(e.g. 'innate, general, cognitive ability' [Burt, 1955])
['intelligence is what intelligence tests measure': Boring, 1923]
e.g. Piaget [1950]: adaptation to the environment
qualitative vs. quantitative
measuring individual differences [1904]
reification
reflect psychological reality
Factor analysis (FA)
factors = 'mathematical abstractions' [Gould, 1981]
Psychometric (factor analysis)
Spearman's two-factor theory
g (general intelligence)
s (specific factor)
'London line'
Burt/Vernon [1950]
Hierarchical model
g
major group factors
v:ed
k:m
minor group factors
specific factors
[Thurstone, 1935, 1938, 1947]
Primary mental abilities
·spatial (S) ·perceptual speed (P)
·numerical reasoning (N) ·verbal meaning (V)
·word fluency (W) ·memory (M)
·inductive reasoning (I)
[Cattell, 1963]
[Horn & Cattell, 1967]
Fluid and crystallised intelligence
gf
gc
Theories of intelligence
[Guilford, 1967, 1982]
'Structure of intellect' model
5 types of content
x
5 kinds of operations
x
6 kinds of product
150 districts mental abilities
Genetic influences
Adoption studies
Separated MZs
e.g. MISTRA [Bouchard]
Equal environments assumption
Family resemblance studies [e.g. Bouchard & McGue, 1981]
Studies of IQ stability
Race and IQ debate
political/racist nature of IQ tests
Explaining individual differences: heredity & environment
within vs. between group differences [Lewontin, 1976]
Interaction
heritability estimates
Pre-natal (e.g. teratogens)
Enrichment studies/intervention programmes [e.g. Headstart, 1965]
Environmental influences
Hothousing
[e.g. Sternberg, 1979]
Information - processing approach
Intelligence = the steps/processes people go through in solving problems
5 major components [Sternberg, 1987]
[Sternberg, 1985]
Triarchic theory
· componential sub-theory
· contextual sub-theory
· experiential sub-theory
Individuals/ group tests
Intelligence testing
IQ tests= ability tests (as opposed to attainment/ achievement tests)
Aptitude tests
What do intelligence tests measure?
Cultural influences
[Gardner, 1983]
Multiple intelligences
· Linguistic
· Logical-mathematical
· Spatial
· Musical
· Bodily-kinaesthetic
· Interpersonal
· Intrapersonal
· Naturalistic [1995]
Existential?
Culture-free vs. culture-fair
Intelligence as a cultural phenomenon
e.g. Kpelle people [Glick, 1975]
Are IQ tests culturally biased?
Relationship between intelligence/IQ
Can IQ tests measure potential?
Ryan [1972]
Bee [1994]
Are IQ tests valid?
predictive validity
most common/powerful external criterion = educability/ educational success
Are IQ tests properly standardised?
Ordinal vs. interval scales
Ryan [1972]
(U.S.)
Ratio and deviation IQs
differential abilities scale [Elliot, 1990]
British Ability Scales (BAS) [Elliot et al., 1979]
2½ - 17 yr. olds
verbal IQ
overall/ general IQ
visual IQ
BAS II [1996]
Army Alpha and Beta tests
Simon-Binet test [1905]
Wechsler tests
WAIS [1944, 1958, 1981, 1997]
WAIS-III: 16-89 yr. olds
WISC [1949, 1974, 1991]
5 - 15 yr. olds
WPPSI [1963, 1989]
4 - 6½ yr. olds
Stamford-Binet [1916, 1937, 1960] 1973, 1986
2½ - 18 yr. olds
2 - 23 yrs. 11 mths.
· verbal reasoning
· abstract/visual reasoning
· quantitative reasoning
· short-term memory
Verbal Scale + Performance Scale
Verbal IQ
Performance IQ
Overall (general) IQ
Criteria for identifying an independent intelligence
potential isolation by brain damage
core operation/set of operations
psychometric findings
idiots savants/ prodigies/other exceptional individuals