

The Lexical Approach to Personality Traits (Cattell and the 16PF)

The Lexical Hypothesis →

- If individual differences (personality) are important (for survival), they should be encoded in language through *trait-descriptors* (words that refer to elements of personality)
- *The Lexical Hypothesis* → All important individual differences have become encoded within the natural language over time
- **Assumptions:**
 - *Frequency of Word Use* → indicates importance of trait
 - *Number of Synonyms* → indicates importance of difference (subtle differences/hues of the trait)
 - *Cross-Cultural Presence* → indicates universality of traits and thus their importance
- A *descriptive* approach (rather than explanatory) → describes this conceptual

Raymond Cattell and the Factor Analytic Approach to Personality →

- *“Psychology appears to be a jungle of confusing, conflicting and arbitrary concepts... These pre-scientific theories doubtless contain insights... But who knows, among the many brilliant ideas offered, which are the true ones? There is no objective way of sorting out the truth except through scientific research”* - Cattell
- Took Allport's basic ideas and operationalised them
- Suggested that the *individual/personality differences* that are the *most salient and socially relevant* in people's lives will eventually become *encoded in their language*; **the more important such a difference, the more likely is it to become expressed as a single word**
 - By sampling language, it would be possible to derive a comprehensive taxonomy of human personality traits
 - Allport and Odbert thus worked through the two most comprehensive English dictionaries and extracted 18,000 personality-describing words
 - From this, 4500 adjectives describing non-physical individual differences which are directly observable and relatively permanent (personality traits)
- **Core Ideas in Cattell's Theory:**
 - **Personality** → the characteristics of the individual that allow predictions of how they will behave in a given situation (measurable)
 - **Traits** → the relatively stable and long-lasting building blocks of personality that possess predictive value
 - Combined actions of traits result in individual and group differences (*syntality* → refers to condition when group differences are a result of individual differences/personality)

- Both environment and genetics are important in the development of personality (placed traits on a *genetic-environmental continuum* → similar to heritability)
 - **Constitutional Traits** (*genetically* determined)
 - **Environmental-Mold Traits** (*environmentally* determined)
- Came up with *Multivariate Abstract Variance Analysis (MAVA)* to measure personality traits

- **Types of Traits:**

- **Ability Traits** (*what we do*)
 - Traits we utilise to complete tasks/reach goals
 - Relate to how we deal with specific situation/how well we reach our goals (determine success/failure)
 - E.g. intelligence, memory, talents
- **Temperament Traits** (*how we do it*)
 - Determine the individual *styles/behaviours* we adopt when pursuing our goals (highly heritable)
 - E.g. easygoing, anxious, laidback
- **Dynamic Traits** (*why we do it*)
 - Personality elements that guide our *motivation* (e.g. ambitious, competitive, cooperative, altruistic etc.)
 - **Dynamic Trait Components (hierarchical)** →
 - **Attitudes** → Constructs that express our particular interests in people/objects in specific situations
 - ❖ Volatile/unstable
 - ❖ Observable/reflected in behaviour
 - **Sentiments (metaergs)** → Complex (deeper) aggregates/composites of attitudes (e.g. interests, values, patriotism, religiosity)
 - ❖ More stable than attitudes
 - **Ergs** → Innate drives (related to instincts) that cause us to attend to stimuli more readily than others (e.g. parental care, hunger, curiosity, fear, pride)
 - ❖ Considered the most stable space
 - **Dynamic Lattice:** The organised complexity and interrelation of dynamic traits (*subsidization* → *the process where ergs becomes sentiments, which become attitudes, which become overt actions*)
- **Surface Traits**
 - Possess phenotypically observable/directly measurable expressions
 - Relate to an individual's overt behaviours → traits that are a result of other traits/personality (e.g. worry, anxiety)
 - Cluster together and thus should have high correlations
 - *First Order* traits (hierarchical arrangement of personality)

- **Source Traits**
 - Major dimensions of personality (*Second Order Traits/Dimensions/Primaries*)
 - Consist of constellations (clusters) of surface traits
 - E.g. apprehension, neuroticism, extraversion, guilty, self-blame

- **Cattell's Specification Equation:**
 - How to predict individual behaviour in any given situation:
 - $P(ij) = S(1j)T(1i) + S(2j)T(2i) + S(3j)T(3i)...$
 - ❖ **P** = performance/behaviour of a person (i) in a given situation (j)
 - ❖ **S** = *situational indexes/roles* unique to each source trait in this situation
 - ❖ **T** = *source traits* involved in this situation
 - *Outcome of behaviour* in a given situation is dependent on *each source trait* and the *role this source trait plays in any given situation* (level of importance/influence)

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 - **Cattell's Trait Development** (*reducing in an attempt to make measurable*):



- Ended up with **46 surface traits** loading onto **16 dimensions/source traits**
- **Sources of Data** →
 - **L-Data (life record data)**: behavioural records collected primarily from *peer-ratings* (e.g. school reports)
 - **Q-Data (questionnaire data)**: psychometric self-report assessment
 - **T-Data (test data)**: objective tests in standardised conditions (e.g. physiological tests, IQ tests)

Evaluating Cattell's Theory →

- **Negatives:**
 - Relative inability to replicated 16F structure
 - Almost absolute reliance on FA and statistics
 - Made some rather controversial comments
 - *Beyondism* (a rational *religion* based on evolutionary theory → says that the fittest should inherit the earth)
- **Positives:**
 - Major contribution to the area of personality and intelligence
 - Developed the first viable psychometric assessment of personality
 - Major contribution to Mathematical psychology, Behavioural Genetics and measurement (e.g. Scree plot, Procrustian rotation in FA, MAVA, founder of the field of Multivariate Experimental Psychology)
 - Proposed the State-Trait dichotomy
 - His data largely *gave part* to the *rise of the 5-factor model*

The Big-5 Model of Personality

The Big-5 is the most commonly used lexical approach to personality

Psychometric issues with Cattell's 16PF →

- **Inability to Replicate Factor Structure**
 - **Donald Fiske (1949)** → used 22 of Cattell's *46 surface traits* (the most psychometrically sound traits) in an attempt to replicate, found **five** major recurrent factors/dimensions:
 - *Social Adaptability*
 - *Emotional Control*
 - *Conformity*
 - *Inquiring Intellect*
 - *Confident Self-Expression (Will to Achieve)*
 - **Tupes and Christal (1958)** → reanalysed Cattell's and Fiske's correlation matrices (increasing sample size) and identified **five** (orthogonal) factors
 - *Extraversion*
 - *Agreeableness*
 - *Conscientiousness*