

Personality Research

Psychology 301: Personality Research

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Northwestern University
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pmc.psych.northwestern.edu/revelle/syllabi/301.syllabus.html

- All people are the same, some people are the same, no person is the same. (Kluckhohn and Murray, 1948)
- “Whatever exists at all exists in some amount. To know it thoroughly involves knowing its quantity as well as its quality” (E.L. Thorndike, 1918)

Personality Research: Goals

- To acquire an appreciation of current research in personality including taxonomic, biological, and cognitive approaches.
- To acquire an understanding of the ways in which personality may be measured using current psychometric techniques.
- To conduct original research in personality.

Personality Research: Requirements

1. Research proposal reviewing relevant prior research and proposing to answer a theoretical question. (Nov 1)
2. A mid term exam covering the theories of personality and methods of research discussed in class and in readings. (Oct 18)
3. A final research project reviewing the relevant literature, experimentally testing a hypothesis, and discussing the implications of the results. Done as a small group project. Individually graded. (Dec 6)
4. A final exam (optional).

Personality Research: Readings

- Readings will be assigned from relevant journals and texts. Most of these will be web accessible.
- Check the syllabus and the associated outline on the web for handouts, course notes, and additional readings. These will be updated at least once a week. Class handouts will become available the day of class.

Personality Research: Syllabus

- I. Introduction to personality research
 - A. Place of personality in psychology
 - B. 5 Basic Questions
- II. Descriptive taxonomies
- III. Causal models of personality
- IV. Psychometric theory
- V. Other current research techniques

Two Disciplines of Psychological Research

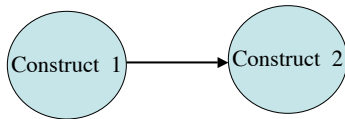
(Cronbach, 1957, 1975; Eysenck, 1966, 1997)

B=f(Personality)	B=f(P*E)	B=f(Environment)
	Darwin	
Galton		Weber, Fechner
Binet, Terman		Watson, Thorndike
Allport, Burt	Lewin	Hull, Tolman
Cattell	Atkinson, Eysenck	Spence, Skinner
Epstein		Mischel

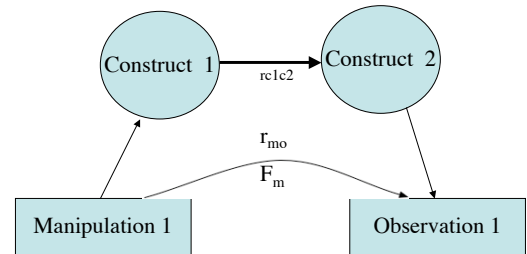
Two Disciplines of Psychological Research

	B=f(Person)	B=f(Environment)
Method/Model	Correlational Observational Biological/field	Experimental Causal Physical/lab
Statistics	Variance Dispersion Correlation/ Covariance	Mean Central Tendency t-test, F test
Effects	Individuals Individual Differences	Situations General Laws
	B=f(P,E) Effect of individual in an environment Multivariate Experimental Psychology	

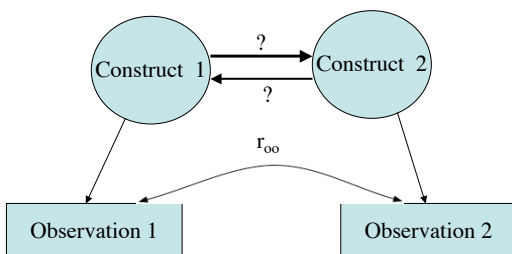
Theory and Theory Testing I: Theory



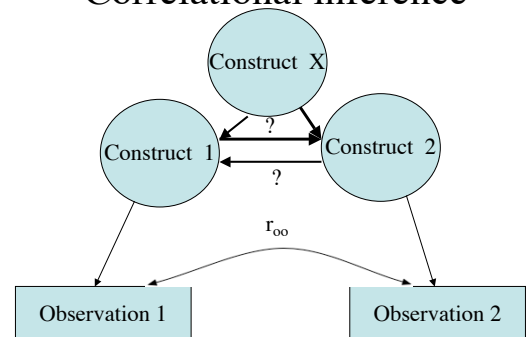
Theory and Theory Testing II: Experimental manipulation



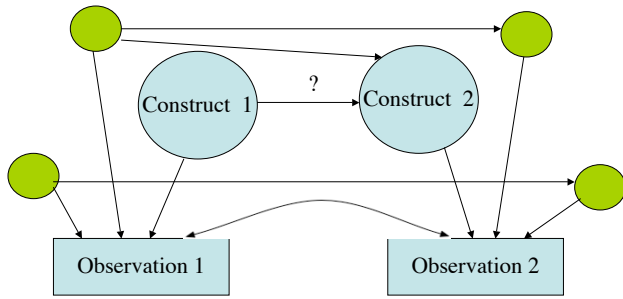
Theory and Theory Testing III: Correlational inference



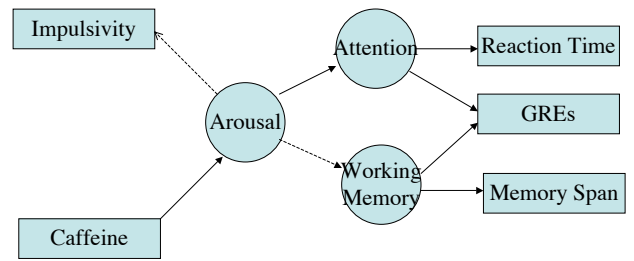
Theory and Theory Testing IV: Correlational inference



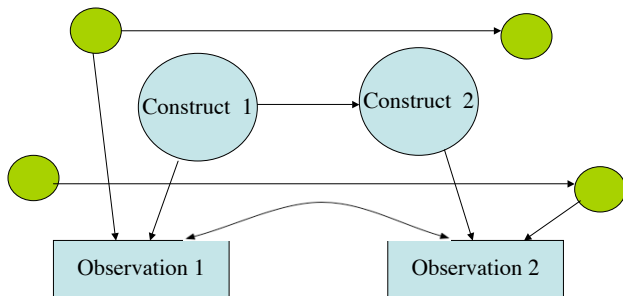
Theory and Theory Testing V: Alternative Explanations



Individual differences and general laws



Theory and Theory Testing VI: Eliminate Alternative Explanations

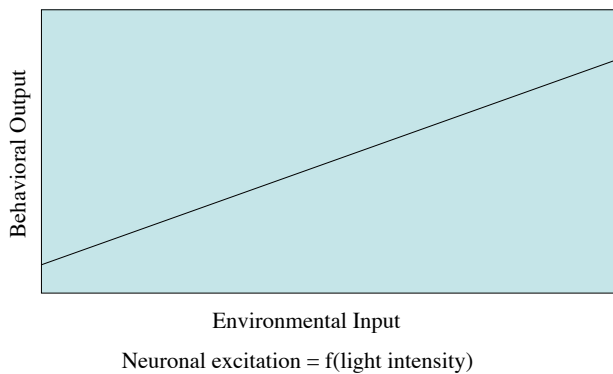


Types of Relationships

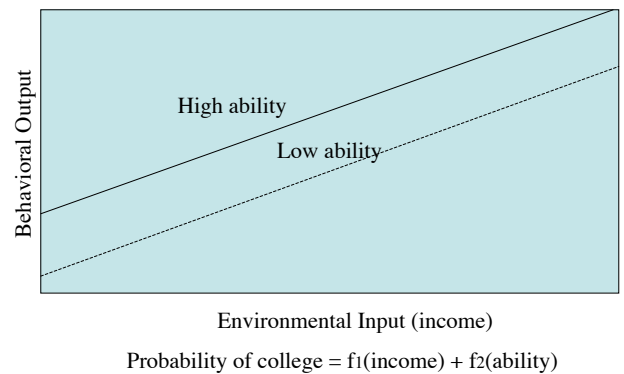
(Vale and Vale, 1969)

- Behavior = $f(\text{Situation})$
- Behavior = $f_1(\text{Situation}) + f_2(\text{Personality})$
- Behavior = $f_1(\text{Situation}) + f_2(\text{Personality}) + f_3(\text{Situation} * \text{Personality})$
- Behavior = $f_1(\text{Situation} * \text{Personality})$
- Behavior = idiosyncratic

Types of Relationships: Behavior = $f(\text{Situation})$

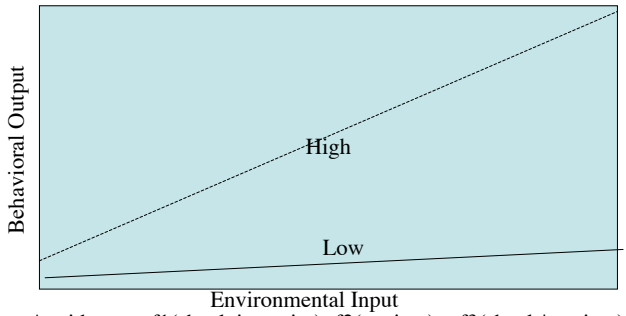


Types of Relationships: Behavior = $f_1(\text{Situation}) + f_2(\text{Person})$



Types of Relationships:

$$\text{Behavior} = f_1(\text{Situation}) + f_2(\text{Personality}) + f_3(\text{Situation} * \text{Personality})$$

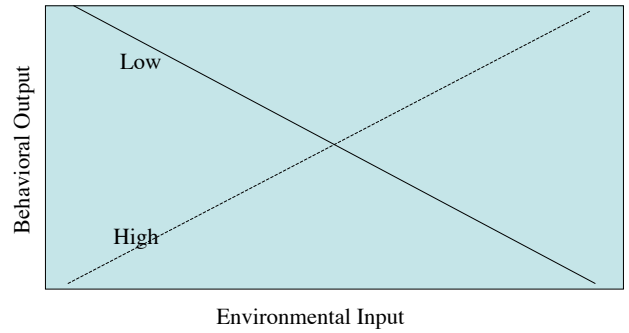


$$\text{Avoidance} = f_1(\text{shock intensity}) + f_2(\text{anxiety}) + f_3(\text{shock} * \text{anxiety})$$

$$\text{Reading} = f_1(\text{sesame street}) = f_2(\text{ability}) + f_3(\text{ss} * \text{ability})$$

Types of Relationships:

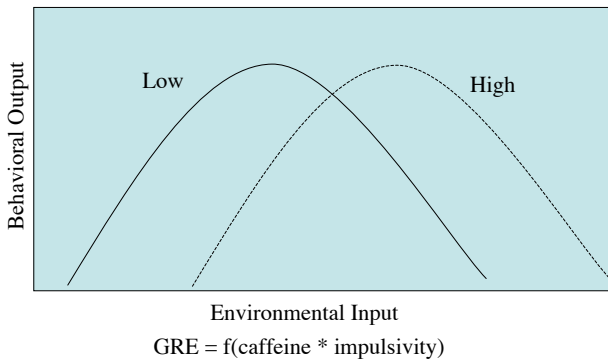
$$\text{Behavior} = f(\text{Situation} * \text{Person})$$



$$\text{Eating} = f(\text{preload} * \text{restraint})$$

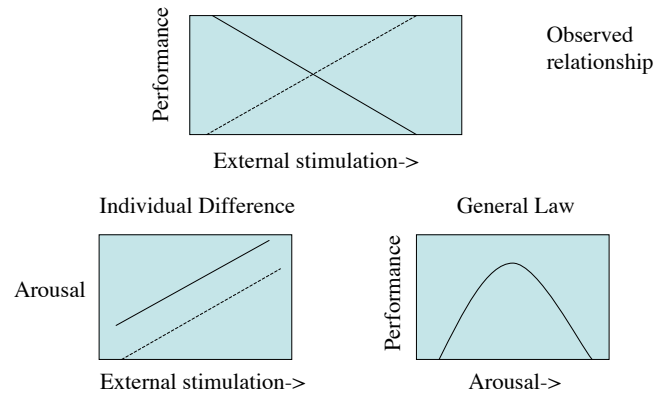
$$\text{GRE} = f(\text{caffeine} * \text{impulsivity})$$

Types of Relationships: Behavior = f(Situation*Person)



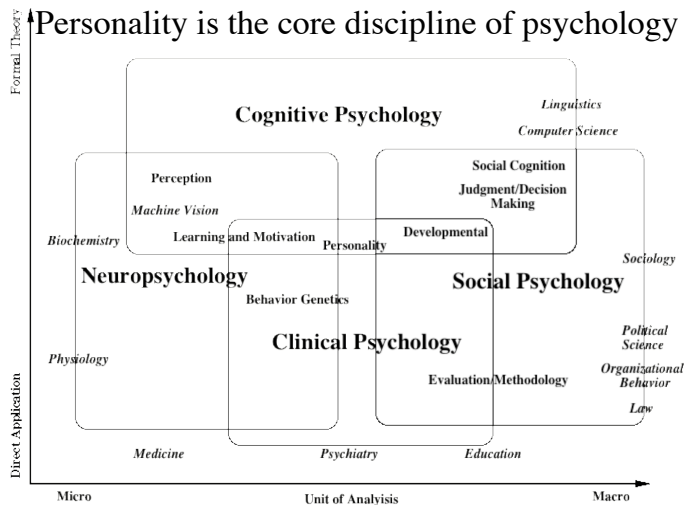
$$\text{GRE} = f(\text{caffeine} * \text{impulsivity})$$

Persons, Situations, and Theory



Place of personality in psychology

- The study of personality is the core discipline of psychology
- Personality is the coherent patterning of affect, behavior and cognition
- Five meta questions asked by personality research
- Two approaches to the field (descriptive vs. causal)
- Personality is the integration of multiple (brain) systems



Personality is the coherent patterning of affect, behavior and cognition

- Personality: Stability and Change
 - How do we recognize an old friend?
 - Are we the same person we were 10 years ago?
 - Are we the same person we will be in 10 years?

Personality: the temporal coherence of affect, behavior and cognition

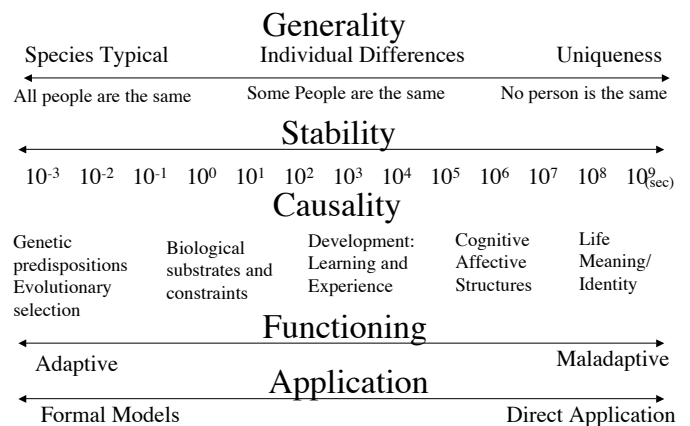
- Personality as music: Recognizing a person is like recognizing a tune
- Recognition of an old tune
 - Notes may be different but if the pattern of notes is the same, it is the same tune
 - Melody
 - Rhythm
 - Lyrics
- Familiarity of an old friend
 - A person's recognizable signature is the pattern of
 - Affect
 - Behavior
 - Cognition

Personality: the temporal coherence of affect, behavior, and cognition

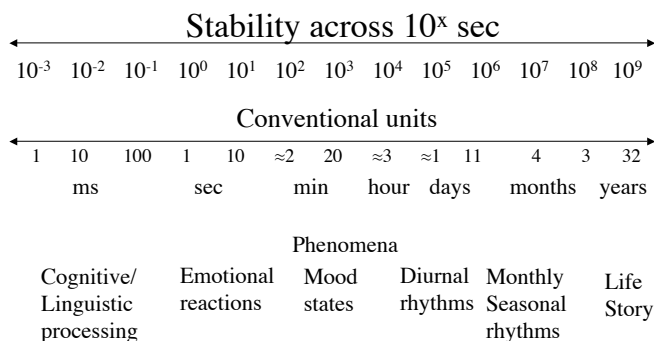
Five questions about personality

1. Generality across situations
2. Stability across time
3. Functioning (adaptive vs. maladaptive)
4. Causality (biological/nature + environmental/nuture)
5. Application (does it make any difference)

Dimensions of Explanation and Analysis



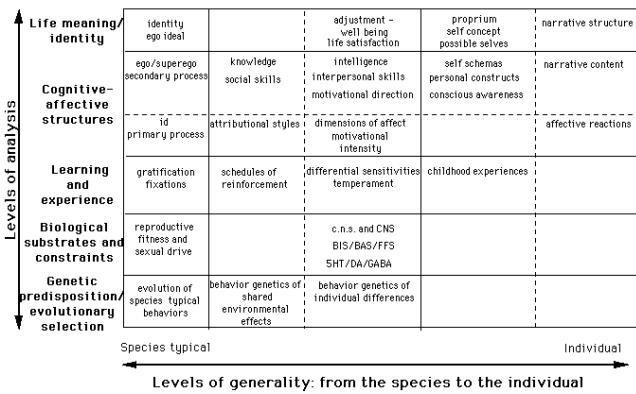
Personality: the temporal dimension



Personality Research: Generality x Levels of Analysis

- Generality
 - All people are the same -- species typical
 - Some people are the same -- individual differences
 - No person is the same-- individual uniqueness
- Levels of analysis
 - Genetic substrate
 - Physiological systems
 - Learning and Experience
 - Cognitive-Emotional structures
 - Life meaning and identity

A conceptual organization of personality theory and research



Multiple approaches to personality

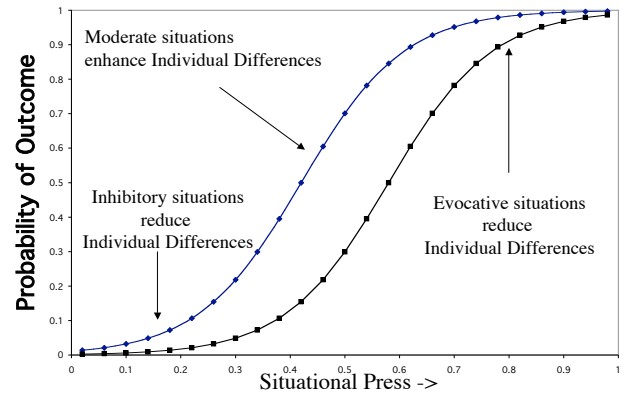
1. Psychology of the individual
 1. Consistency and change in the life of a person
 2. Coherence over situations and time
2. Individual differences
 1. How many dimensions are needed?
 2. What are they?
3. Stability of individual differences over time

Does knowing about individuals in one situation predict anything about other situations?

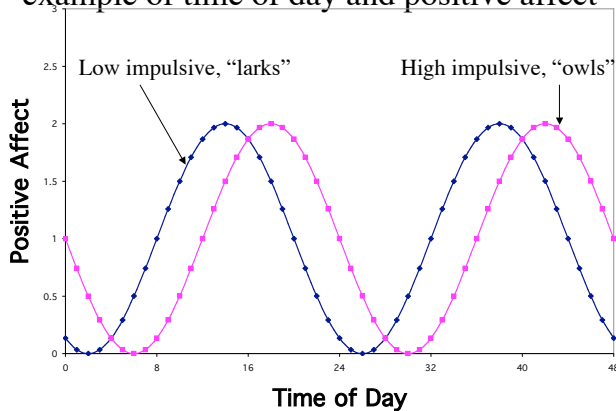
Multiple approaches to personality

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Personality Consistency: the power of the situation



Coherency of individual differences: the example of time of day and positive affect



Conley's meta analysis of personality stability

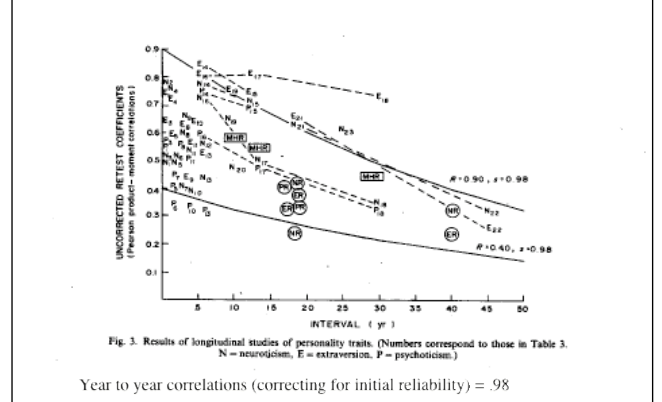


Fig. 3. Results of longitudinal studies of personality traits. (Numbers correspond to those in Table 3. N = neuroticism, E = extraversion, P = psychoticism.)

Year to year correlations (correcting for initial reliability) = .98

Years	1	5	10	20	30	40
Consistency	.98	.90	.82	.67	.55	.45

Multiple approaches to personality

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 1. How many dimensions are needed?
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Definition of the relevant domain

- Individual differences in personality
 - Personality traits vs. abilities?
 - Traditional personality traits are central tendencies and preferences rather than limits
 - What do you do vs. what can you do

Theophrastus' Folk Theory

The talker	The anxious to please	The hostile man
The chatterer	The toady or the flatterer	The shameless man
The boaster	The coward	The distrustful man
The inventor of news	The superstitious man	The slanderer
The ironical man	The feckless	The skinflint or stingy man
The boor	The tiresome man	The mean man
The arrogant man	The outcast	The avaricious man

Identifying personality structure

Is it possible to reduce the broad range of individual variation in personality to a limited number of personality traits?

Trait: A particular feature of mind or character; a distinguishing quality; a characteristic; spec. of a culture or social group (OED)

The pronunciation *tr ei*, after mod. French, in the 19th c. considered in England the correct one, is becoming less general; in U.S. *tr eit* is the established one (OED)

Descriptive Approaches to Personality

- Derived from three approaches to taxonomy construction
 - **Folk Theories**: How ordinary people think about personality – constrained to types and typologies; categorical, not dimensional
 - **Constructive** approach: How verbal **descriptions** of feelings and actions covary; leading to trait dimensions – constrained by interests and ingenuity of investigators
 - **Analytic** approaches: How endorsements of **words** covary, leading to trait dimensions – constrained by the language
- All seek to provide a characterization of kinds of people (a flatterer, extravert, etc.); all are only a first approximation for what a person will do (next)

Early theoretical taxonomies

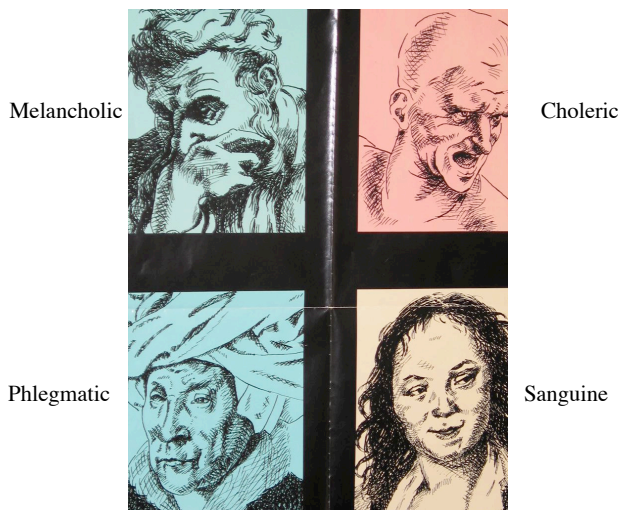
- Plato and the requirement for leadership
- "... quick intelligence, memory, sagacity, cleverness, and similar qualities, do not often grow together, and ... persons who possess them and are at the same time high-spirited and magnanimous are not so constituted by nature as to live in an orderly and peaceful and settled manner; they are driven any way by their impulses, and all solid principle goes out of them. ... On the other hand, those stable and steadfast and, it seems, more trustworthy natures, which in a battle are impregnable to fear and immovable, are equally immovable when there is anything to be learned; they are always in a torpid state, and are apt to yawn and go to sleep over any intellectual toil."

Early taxonomies

- Galen (and Hippocrates): “Blood, phlegm, yellow bile and black bile are the particular elements of the nature of man”.
- the sanguine, bouyant type; the phlegmatic, sluggish type; the choleric, quick-tempered type; and the melancholic, dejected type
- The 4 temperaments were later discussed by Kant (1798)

19th and early 20th Century Taxonomy: Wundt’s (1903) dimensional structure

Excitable		
Melancholic	Choleric	Changeable
Phlegmatic	Sanguine	



19th and early 20th century taxonomies

- Heymans - 3 dimensional model
- Freud:
 - Interaction of character and childrearing
- Jung:
 - Orientations and functioning
- McDougall domains of personality

Freud’s taxonomy

- Oral
 - Indulgent: oral erotic -- oral passive optimistic, gullible, dependent, manipulative
 - Restrictive: oral sadistic, oral aggressive pessimistic, suspicious, quarrelsome
- Anal
 - Indulgent: anal retentive, anal compulsive stingy, stubborn, punctual, precise, orderly
 - Restrictive: anal aggressive, anal expulsive cruel, destructive, hostile, disorderly
- Phallic
 - Indulgent: phallic-dominant vain, proud, domineering, ambitious, virile
 - Restrictive: phallic-submissive meek, submissive, modest, timid, feminine

Jung

- Orientations:
 - Introverted Extraverted
- Psychological Functioning
 - Thinking/Feeling
 - Judging/Perceiving
 - Sensing/ Intuiting
- (current application- MBTI)

McDougall

- Intellect
- Character
- Temperament
- Disposition
- Temper

Heymans

- Three dimensions:
 - Emotionality or emotional instability
 - Activity or general drive
 - Dominance of Primary or Secondary Function
- Empirically based
 - 3,000 doctors were asked to rate all members of a family on a large number of traits
 - ≈ 400 responded with ratings on 2,523 subjects

Heymans taxonomy

(from Eysenck, 1992)

	Emotionality	Activity	P/S	Jung
Apathetic	-	-	S	Sensitive I
Amorphous	-	-	P	Intuitive I
Phlegmatic	-	+	S	Intuitive E
Sanguine	-	+	P	Sensitive E
Passionate	+	+	S	Thinking E
Choleric	+	+	P	Feeling E
Sentimental	+	-	S	Feeling I
Nervous	+	-	P	Thinking I

Constructive Approach (Rational scale construction)

- Propensities to particular behaviors are captured by verbal descriptions
- Researchers construct items with a view to capturing/predicting phenomena of interest
- Empirical application of item responses to solve specific prediction problems

Representative Items (constructive approach)

Do you like to go to lively parties?

Do you do and say things without stopping to think?

Would you call yourself a nervous person?

Do you like to go to the opera?

Analytic Approach (1950 – 1960s)

- Based on factor analysis of endorsement patterns of **words** (e.g., Allport, Cattell, Norman, Goldberg)
- Earliest systematic analyses were Cattell's
 - 18,000 English words intuitively grouped into ≈ 45 pairs of categories or “trait complexes” eventually reduced to 12-14 primary dimensions
- Most ambitious attempt: Warren Norman (1967)
 - selected a subset of about 2,800 from 40,000 English words representing variations between persons or within individuals over time and varying situations . . . encoded in the language

The lexical hypothesis

- based on the following rationale: Because they are so socially meaningful, personality attributes tend to acquire lexical representation, and degree of lexical representation is one guide to the importance of a personality dimension. Presumably, those dimensions that are most fundamental will be ubiquitous, and therefore can be derived independently from studies of any language.
 - (Saucier)

Lexical Hypothesis: Allport

- trait terms selected from unabridged dictionary
- 18,000 Allport-Odbert word lists
 - stable traits
 - fluctuating states

Lexical Hypothesis: Cattell

selected words from Allport 4,504
 grouped by semantic meaning 171
 formed intuitive clusters 36-46
 factored rating scales 12-14
 Subjects: Univ. Illinois fraternity members
 early use of factor analysis formed personality instruments 14-16 self report scales

Representative Trait Complexes

(from Cattell, 1957)

1. <i>Adaptable</i> : flexible; accepts changes of plan easily; satisfied with compromises; is not upset, surprised, baffled, or irritated if things are different from what he expected	Vs	<i>Rigid</i> : insists that things be done the way he has always done them; does not adapt his habits and ways of thinking to those of the group; nonplussed if his routine is upset
2. <i>Emotional</i> : excitable; cries a lot (children), laughs a lot, shows affection, anger, all emotions, to excess	Vs	<i>Calm</i> : stable; shows few signs of emotional excitement of any kind; remains calm, even underreacts, in dispute, danger, social hilarity
3. <i>Conscientious</i> : honest; knows what is right and generally does not tell lies or attempt to deceive others; respects others' property	Vs	<i>Unconscientious</i> : somewhat unscrupulous; not too careful about standards of right and wrong where personal desires are concerned; tells lies and is given to little deceits; does not respect others' property
4. <i>Conventional</i> : conforms to accepted standards, ways of acting, thinking, dressing, etc.; does the "proper" thing; seems distressed if he finds he is being different	Vs	<i>Unconventional, Eccentric</i> : acts differently from others; not concerned about wearing the same clothes as others; has somewhat eccentric interests, attitudes, and ways of behaving; goes his own rather peculiar way

Reanalyses and extensions of Cattell

- Fiske, 1948 - 5 factors
- Tupes and Christal (1958) 5 factors of peer ratings
- Norman (1963) 5 Factors of peer ratings: The "Big 5"
 - 1. Surgency/Extraversion
 - 2. Agreeableness
 - 3. Conscientiousness
 - 4. Emotional Stability versus Emotionality
 - 5. Culture/Openness
- Digman (1985) 5 factors of ratings (teachers + peers)

Digman's Six Data Sets

Oahu 1st & 2nd grades (N = 885): 49 traits

Oahu 5th & 6th grades (N = 834): 49 traits

Kauai 6th grades (N = 502): 43 traits

39 common traits (N = 2,221)

University of Hawaii Laboratory School:

1959 1st & 2nd grades (N = 102): 36 traits

1960 1st, 2nd, & 3rd (N = 149): 50 traits

1963 5th & 6th grades (N = 100): 63 traits

(from Goldberg, 2004)

The Digman-Hawaii Teacher Assessments

The child personality traits were selected to be a comprehensive set, covering at least 10 broad factors.

Each personality trait was specified by classroom behaviors formulated with the help of focus groups of elementary-school teachers.

(from Goldberg, 2004)

Examples of Two Personality Trait Descriptions

Gregarious: Likes to be with others and seeks their company; spends as much time with others as possible; dislikes being alone.

Persevering: Keeps at his/her work until it is completed; sees a job through despite difficulties; painstaking and thorough.

(from Goldberg, 2004)

Digman's Preliminary Analyses of Some of These Data

Published in Digman & Takemoto-Chock (1981); Digman & Inouye (1986); and Digman (1989):

10 to 12 factors were hypothesized.
But only 5 factors replicated across samples.

These early findings were influential in popularizing the "Big-Five" factor structure.

(from Goldberg, 2004)

Reanalyses of Digman's Child Data Sets (Goldberg, 2001)

Data from the 6 separate samples of elementary school children were analyzed independently. Across the 6 samples, the factors were compared at each hierarchical level, from one-factor to 10-factors.

In each of the 6 samples, the classic "Big-Five" factor structure was found.

(from Goldberg, 2004)

A Middle-Childhood "Big-Five"

I. Extraversion:

Gregarious, Energetic vs. Seclusive, Lethargic

II. Agreeableness:

Humble vs. Rude, Self-centered

III. Conscientiousness:

Persevering, Planful, Careful vs. Irresponsible

IV. Emotional Stability (vs. Neuroticism):

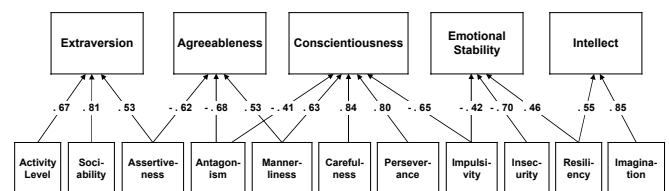
Fearful, Tense, Concerned about acceptance

V. Intellect:

Original, Imaginative, Curious, Aesthetic

(from Goldberg, 2004)

The Hierarchical Structure of Childhood Personality Traits



(from Goldberg, 2004)

Five Domains of Personality (1980s-1990s)

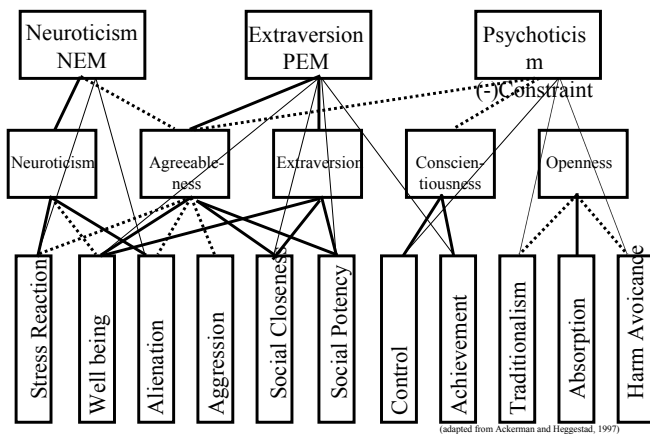
Analyses and meta-analyses of constructive and analytic approaches converged on five domains (Costa & McCrae, 1989; Goldberg, 1981; John, 1990)

<u>technical domain name</u>	<u>colloquial domain name</u>
Extraversion (surgency)	Power
Agreeableness	Affection
Conscientiousness	Work
Neuroticism	Emotionality
Openness	Intellect

Representative Trait Words by Domain

extraversion	agreeableness	conscientious	neuroticism	openness
talkative	sympathetic	organized	tense	wide interests
assertive	kind	thorough	anxious	imaginative
active	appreciative	planful	nervous	intelligent
energetic	affectionate	efficient	moody	original
-quiet	-cold	-careless	-stable	-commonplace
-reserved	-unfriendly	-disorderly	-calm	-simple
-shy	-quarrelsome	-frivolous	-contented	-shallow
-silent	-hard-headed	-irresponsible	-unemotional	-unintelligent

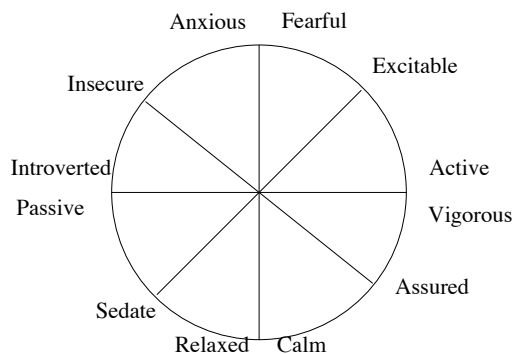
The Giant 3, Big 5, Small 11



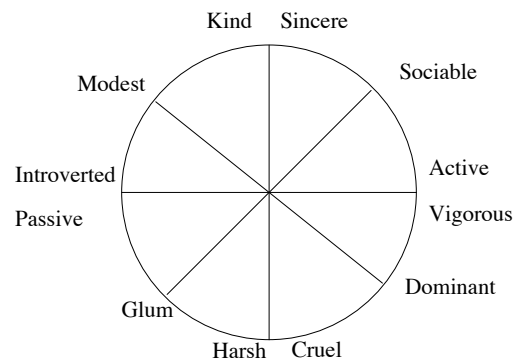
Circumplex of Big 5 dimensions (Abridged Big 5 Circumplex)

- Pair wise ordering of dimensions
 - Agreeableness x Extraversion (interpersonal circumplex of Wiggins)
 - Neuroticism x Extraversion (affective circumplex)
 - Neuroticism x Conscientiousness (the personality disorders?)
 - Agreeableness x Conscientiousness (psychoticism?)
- Comparisons of Self/Other and Positive/Negative Affect

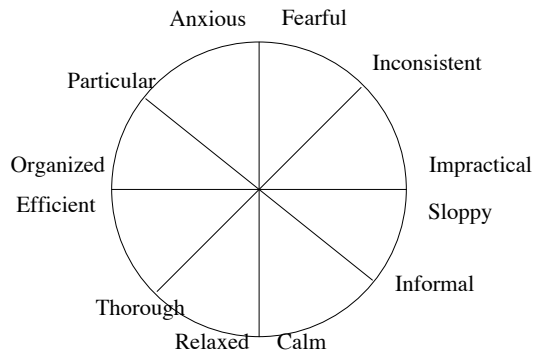
Neuroticism x Extraversion Affective Circumplex (S⁺/S⁻)



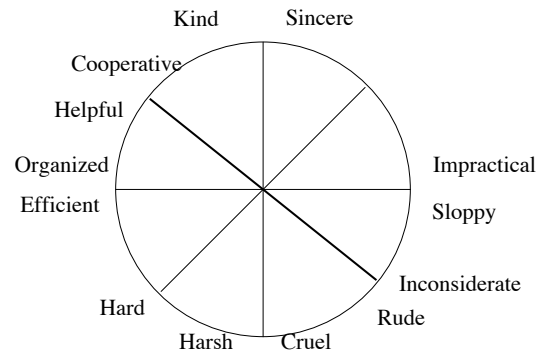
Agreeableness x Extraversion Interpersonal Circumplex (S⁺/O⁺)



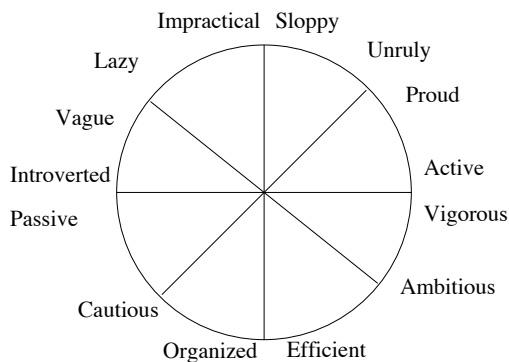
Neuroticism x Conscientiousness (S-/O-) : The personality Disorders?



Agreeableness x Conscientiousness (O+/O-): Eysenck's P scale = O+ vs. O-)?



Conscientiousness x Extraversion Circumplex (S+/O-)



But is Big 5 structure of what people say, not what people do

- Is this the psychology of the stranger?
- Is it merely dimensions of semantic lexicon
- Are personality traits mere delusions?
- (The need for validity studies)

Personality traits as a delusion

- Hartshorn and May (1930)
 - Studies in character -- low correlations across situations for honesty
- Newcomb (1931)
 - Low correlations between real time ratings of behaviors
- Passini and Norman (1966) structure of strangers
- Mischel (1968) critique
- Shweder and D'Andrade (1980) personality as shared delusions
- (This thread continues until today in many classes in social psychology)

Newcomb's behavioral study

rated by camp counselors during the day and at end of day

1. Tells of his own past of the exploits he has accomplished
2. Gives loud and spontaneous expressions of delight or disapproval
3. Goes beyond only asking and answering necessary questions in conversations with counselors.
4. How is the quiet time spent?
5. Spends a lot of time talking at the table.

Newcomb's summer camp 1931

- Systematic encoding by camp counselors of immediate behaviors and subsequent ratings

Behavior	1	2	3	4	5
1	-	.52	.05	.29	.20
2	.67	-	.03	-.14	.08
3	.61	.68	-	-.11	.48
4	.97	.88	.66	-	.16
5	.66	.92	.77	.75	-

Shweder and D'Andrade

- The systematic distortion hypothesis:
 - Observers impose semantic structure on behavior, when in fact, no such structure exists.
- Just as “primitive cultures” engage in what is known as “magical thinking”, the average civilized person “confuses propositions about co-occurrence likelihood.”

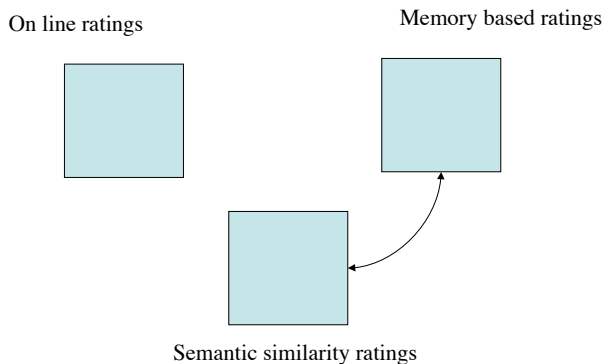
Passini and Norman

- Structure of strangers
 - Undergraduates rating other (unknown) undergraduates on 20 paragraph descriptors
 - Big 5 structure emerges
 - Is the structure of personality traits merely the structure of the lexicon, not of people?
- See also Mulaik structure of ratings of adjectives

Shweder and D'Andrade (1980)

- Method:
 - ratings taken of behavior at time it occurs ("on line")
 - ratings done from memory “semantic”
 - judgments of similarity of trait words
- Analysis
 - Find the correlation matrices of the ratings
 - Compare(correlate) the correlation matrices from the three procedures

Comparisons of Correlational Structures



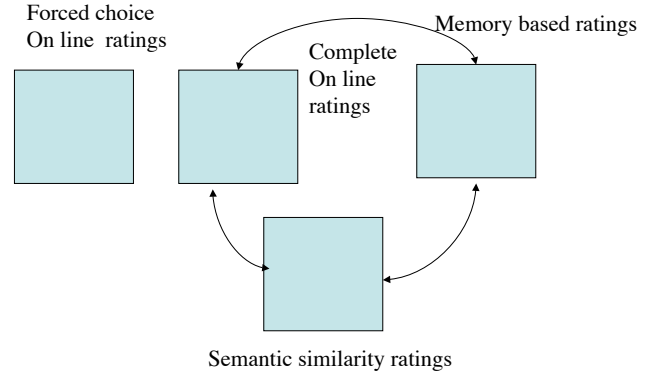
Shweder and D'Andrade

- Results
 - structure of "on line measures" not the same as memory based
 - structure of memory based equivalent to semantic structure
- Implication: structure of personality ratings is in mind of beholder, not in the behavior of target
- But: “on line” measures were forced choice!

Romer and Revelle (1984)

- Conceptual replication of Shweder's "on line ratings"
- Varied "on line ratings"
 - Presented "behavior" e.g. "Rick was self confident at the meeting"
 - forced choice (ala Shweder)
 - which trait does this behavior represent (dominant, arrogant, cold, introverted, submissive, unassuming, warm, extraverted)
 - complete rating of all traits (same traits as before)
 - Semantic structure ratings: how X is this behavior Y?
 - structure of "on line ratings" depends upon method
 - forced choice categories do not correlate
 - on line ratings of traits match memory based

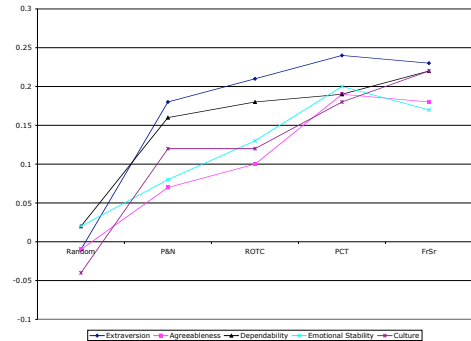
Comparisons of Structures



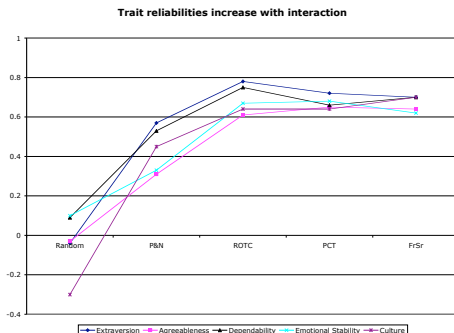
Norman and Goldberg (1966) Construct validity of structure

- Comparison of interrater agreement as rater-ratee interaction increases
- Levels of interaction
 - Unknown (empty chair- Monte Carlo simulation)
 - Minimal acquaintance (Passini and Norman)
 - ROTC members
 - Fraternity juniors and Seniors
 - Peace Corp Trainees
- Structures remain the same across groups, but interrater agreement increases

Norman and Goldberg 1966 Interrater agreement increases with contact



Norman and Goldberg, 1966 Trait reliabilities and social interaction



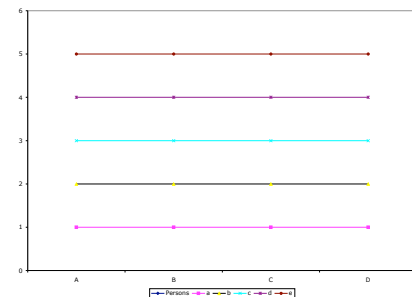
Self and Peer ratings

- Observability of traits
 - Some traits more open to others
 - Extraversion
 - Agreeableness
 - Some less open
 - Emotional stability
 - Conscientiousness

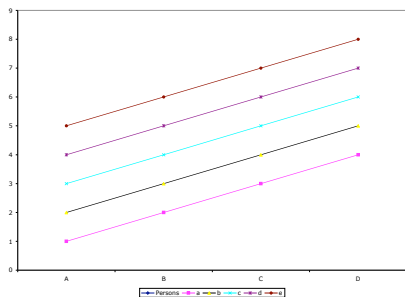
Additional construct validity studies

- If traits have basis in behavior of targets, not in the eye of the beholder, then they should show trans-situational consistency
- Consistency over long period of time
- Consistency across situations
- Consistency across degree of genetic relationship

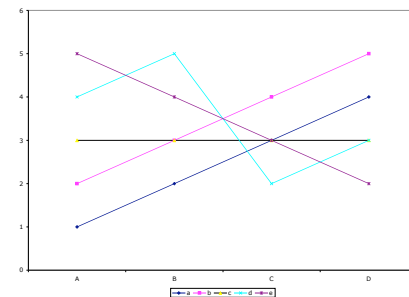
Personality Stability, Consistency, and Coherency



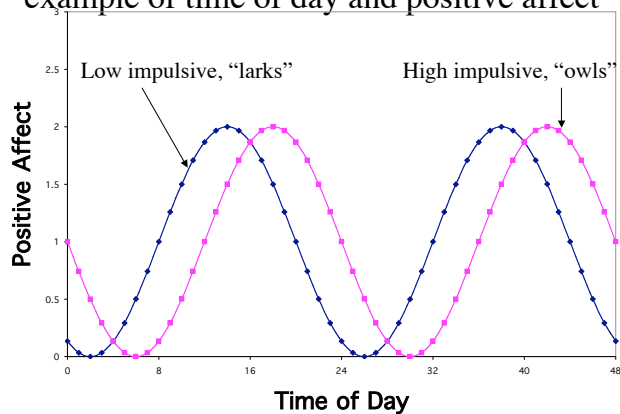
Personality Stability, Consistency, and Coherency



Personality Stability, Consistency, and Coherency



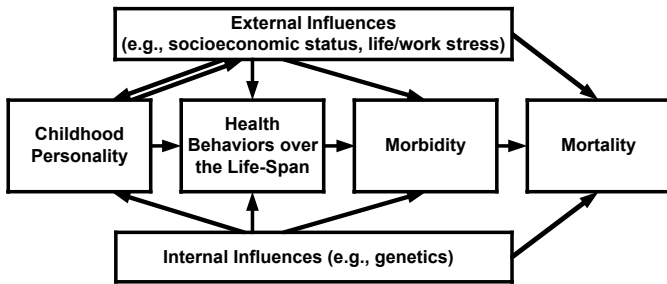
Coherency of individual differences: the example of time of day and positive affect



Descriptive personality and outcomes -- does personality matter

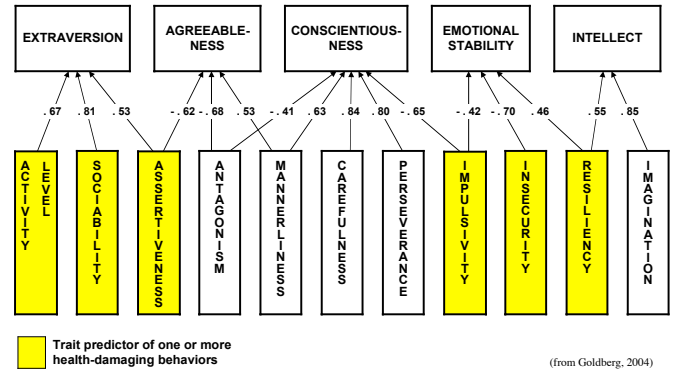
- Terman (1920 ...) - Friedman (1993) studies
 - Childhood Conscientiousness and longer life span
 - Childhood "Happiness" related to shorter life span
- Ongoing Goldberg analysis of lifespan health consequences of mid childhood personality traits (the Digman school children study 40 years later)
- Deary analysis of childhood intelligence and life span among Scottish school children (1933 ...)

Life-Span, Health-Behavior Model



(from Goldberg, 2004)

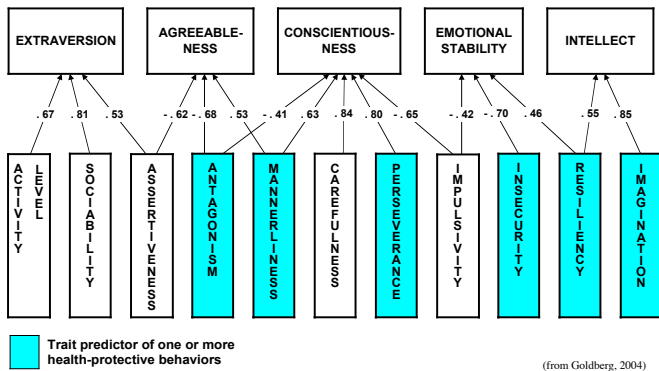
Childhood Trait Predictors of Adult Health-Damaging Behaviors



Trait predictor of one or more health-damaging behaviors

(from Goldberg, 2004)

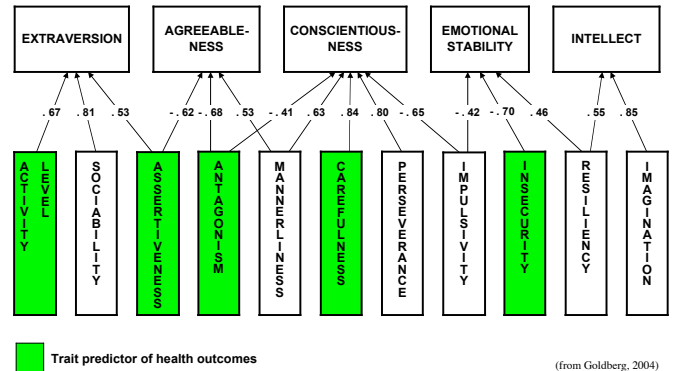
Childhood Trait Predictors of Adult Health-Protective Behaviors



Trait predictor of one or more health-protective behaviors

(from Goldberg, 2004)

Childhood Trait Predictors of Adult Health Outcomes



Trait predictor of health outcomes

(from Goldberg, 2004)

Descriptive vs. Causal Structure

- Descriptive: the Big 5
- Integration of causal theories of
 - Affect
 - Cognition
 - Desires/Goals
 - Behavior

Origins of personality dimensions: causal theories

- Biological model of Extraversion & Neuroticism
 - Eysenck
 - Gray