Intelligence and Personality

Outline

- Personality
- Importance of Personality
- Individual Differences
- Importance of Individual Differences

Personality

Personality Definition:

"Personality refers to the enduring characteristics and behavior that comprise a person's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns."

-American Psychological Association dictionary

"The field of personality psychology studies the nature and definition of personality as well as its development, structure and trait constructs, dynamic processes, variations (with emphasis on enduring and stable individual differences), and maladaptive forms."

https://www.apa.org/topics/personality

Personality

A very prominent focus of personality research has focused on broad and enduring characteristics, known as the Five Factor Model (FFM) or often the "Big Five Factor Model" (Early authors: Guilford, Eysenck, Cattell, Tupes & Christal, Norman, Tellegen & Atkinson, Costa & McCrae)

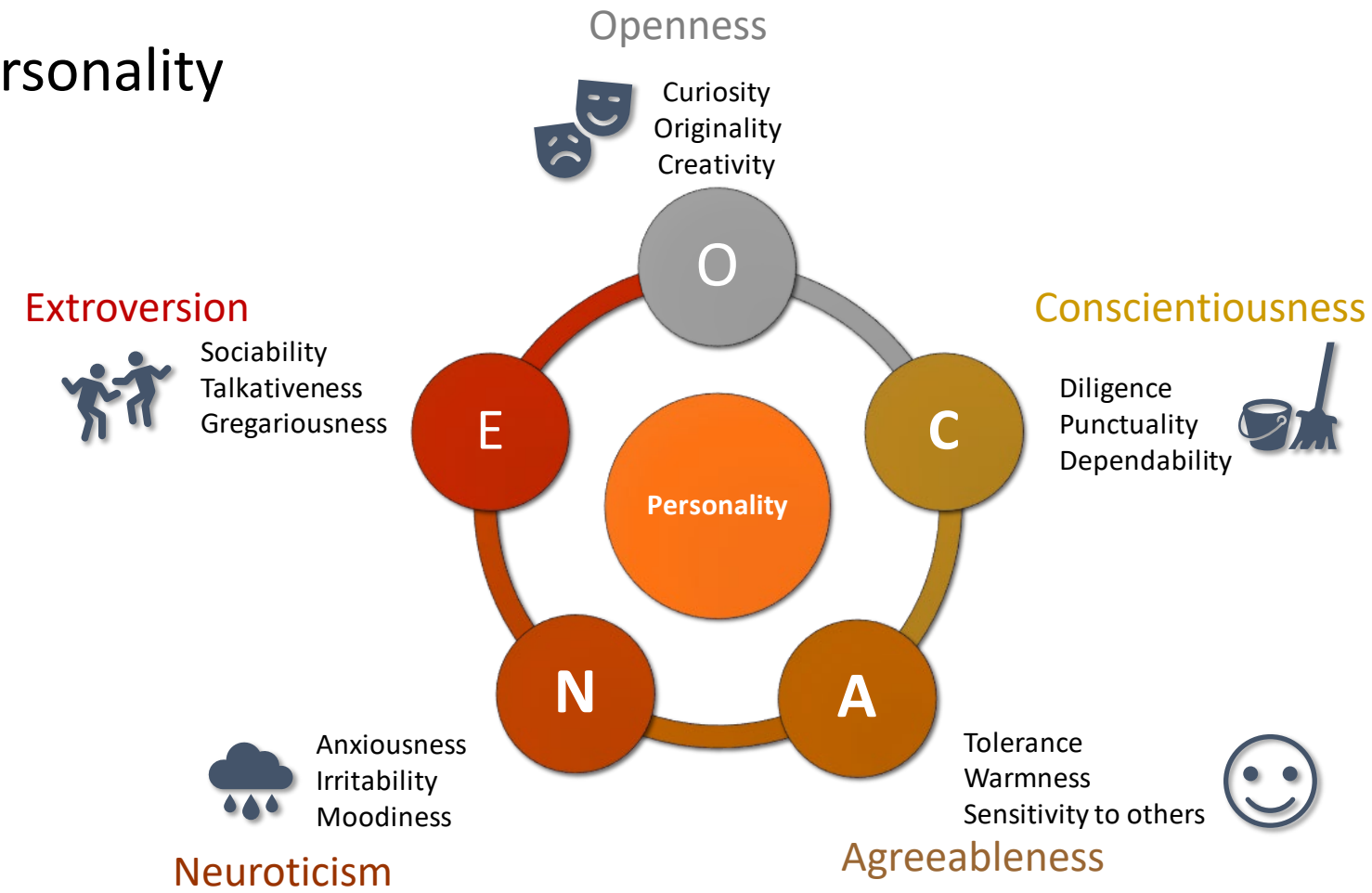
An attempt to uncover the basic dimensions of personality

Personality

Led to development of several classic measures, including:

- Hogan Personality Inventory (Hogan, 1986)
- NEO Personality Inventory (Costa & McCrae, 1985,1989)

Personality



Whitbourne & Whitbourne, 2020. Wiley

Personality

Take the personality test at:

https://www.truity.com/test/big-five-personality-test

Or

https://openpsychometrics.org/tests/IPIP-BFFM/

Personality

Example of items from International Personality Item Pool (IPIP) 50-item measure (Goldberg, 1992):

https://ipip.ori.org/new_ipip-50-item-scale.htm

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4,* 26-42.

Personality

- Trait vs. State
  - Trait – personality characteristics that are stable and long lasting
  - State – temporary behaviors or patterns
- Personality traits may be learned, genetic, or combination

Personality

- Person vs. situation debate
  - Walter Mischel claimed behavior of individuals are not consistent across situations
  - David Funder has defended idea of personality traits showing consistency in some traits over time

Personality

Substantial longitudinal correlations suggest some consistency over time for some personality traits:

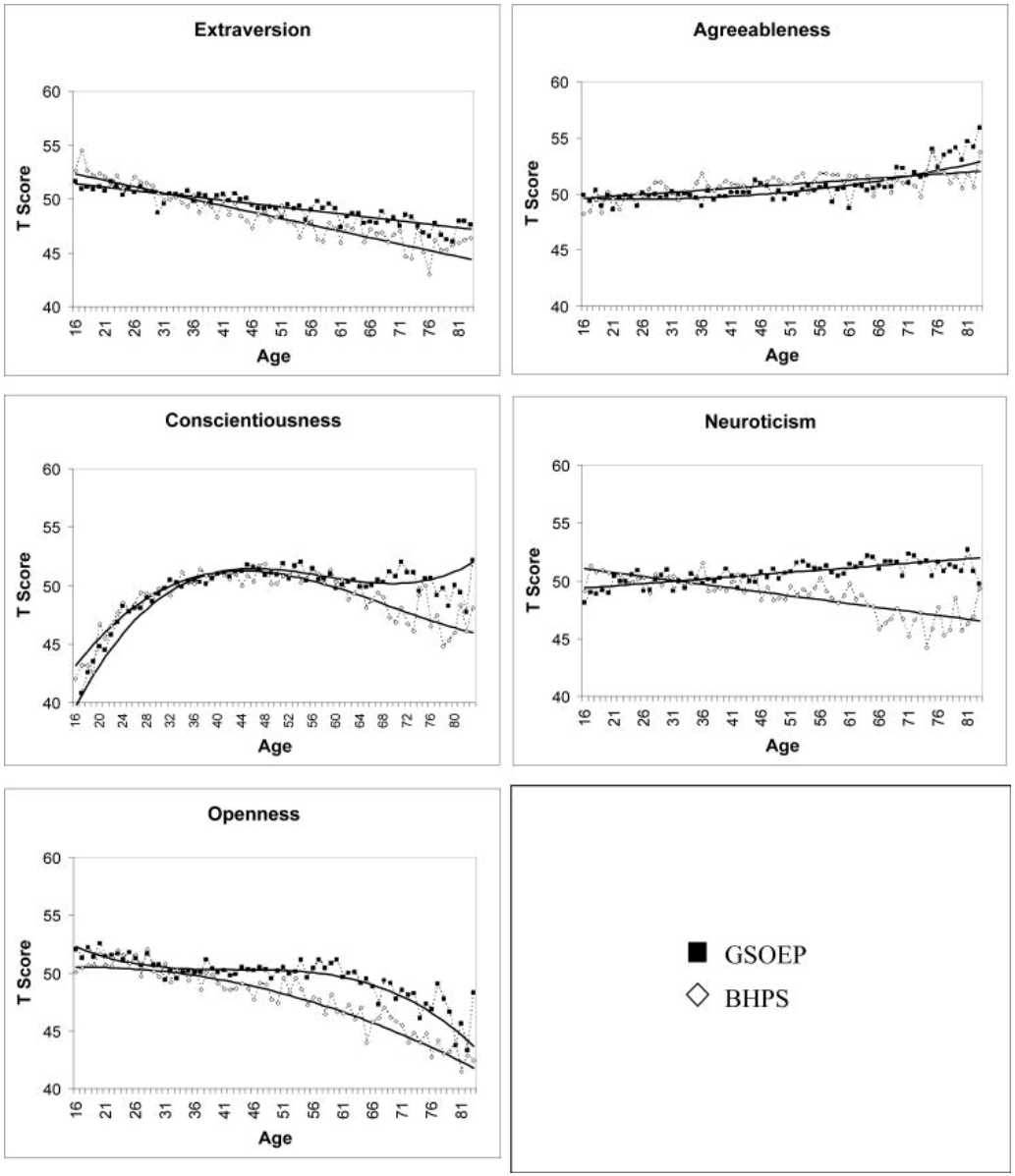
- .60 for anxiety and extraversion over 4-10 years (Schuerger et al., 1982)
- .70 for temperament over 12 years (Costa et al., 1980)
- .74 for social introversion over 30 years (Leon et al., 1979)
- .73 to .77 for neuroticism over 6 years (Steunenberg, 2005)

Personality

Interactionism

- Person and situations interact to affect behavior (Buss, 1977)
- Although some characteristics may have stability over time, personality traits can change, and situations do affect behavior
- Even if a personality trait is stable, behavior may still be affected by situations

Age changes in Big Five Personality Traits



Donnellan, M. B., & Lucas, R. E. (2008). Age differences in the Big Five across the life span: evidence from two national samples. Psychology and aging, 23(3), 558.

Importance of Personality

The variation in cognitive decline and health across individuals can be explained by many factors, one of which are personality or individual differences

Many studies have shown the relationship between personality and cognitive or health outcomes

Personality

Conscientiousness inconsistently related to reasoning, speed and cognitive (Akerman & Heggerstad, 1997) and memory compensation (Dixon & de Frias, 2004)

Agreeableness associated with lower performance on inductive reasoning, spatial orientation, cognition (Willis & Boron, 2008) and lower crystallized intelligence scores (Baker & Bichsel, 2006)

Extraversion linked to better long-term memory retrieval (Baker & Bichsel, 2006) lower cognitive impairment (Willis & Boron, 2008)

Openness related to intelligence scores in older age (Gow, Whiteman, Pattie, & Deary, 2005)

Neuroticism connected to cognitive impairment, mortaility (Willis & Boron, 2008) verbal ability declines (Gold et al., 1995)

Individual Differences

Whereas the Five Factor Model attempts to characterize the broadest set of meaningful personality dimensions, much of the research by personality psychologists study more specific constructs that can be termed *individual differences*

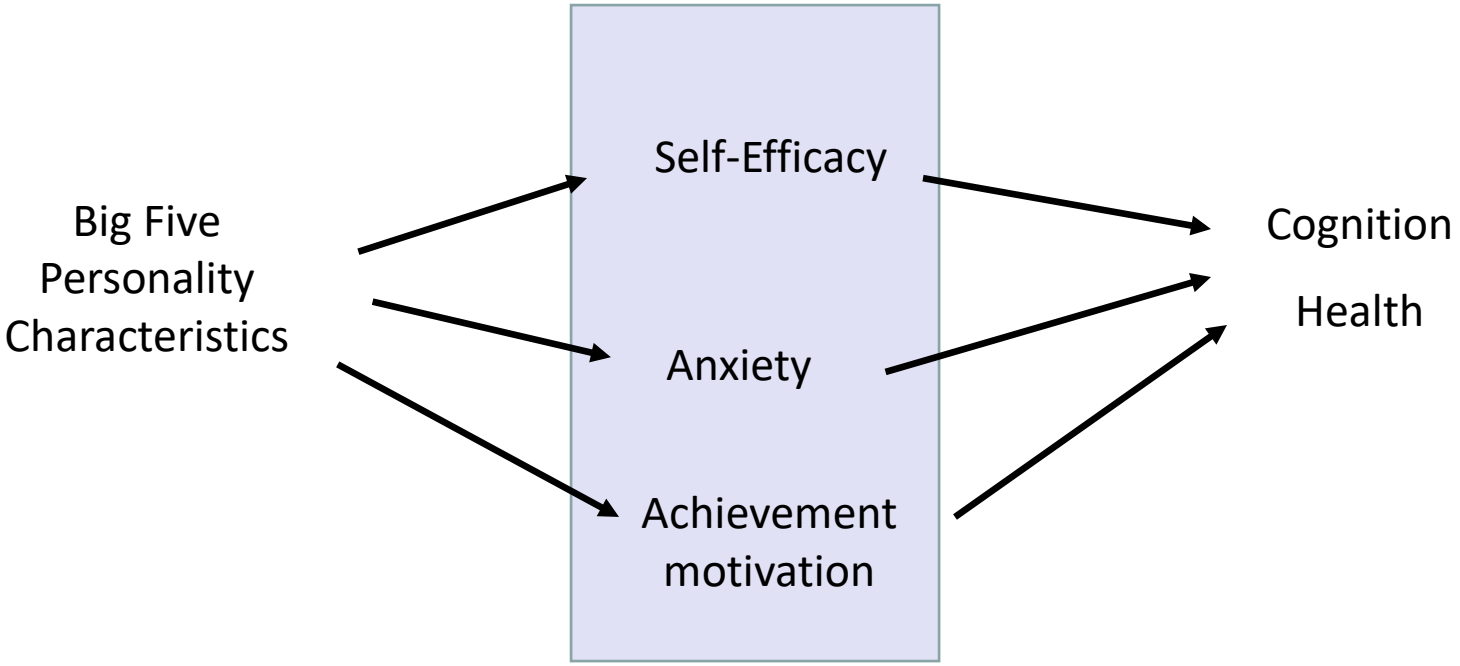
Individual Differences

Individual difference characteristics – less global trait-like characteristics, e.g.,

self-esteem, sense of control/mastery, self-efficacy, hostility, leadership, optimism/pessimism, achievement motivation, perfectionism, narcissism

Many have not been studied longitudinally spanning later years

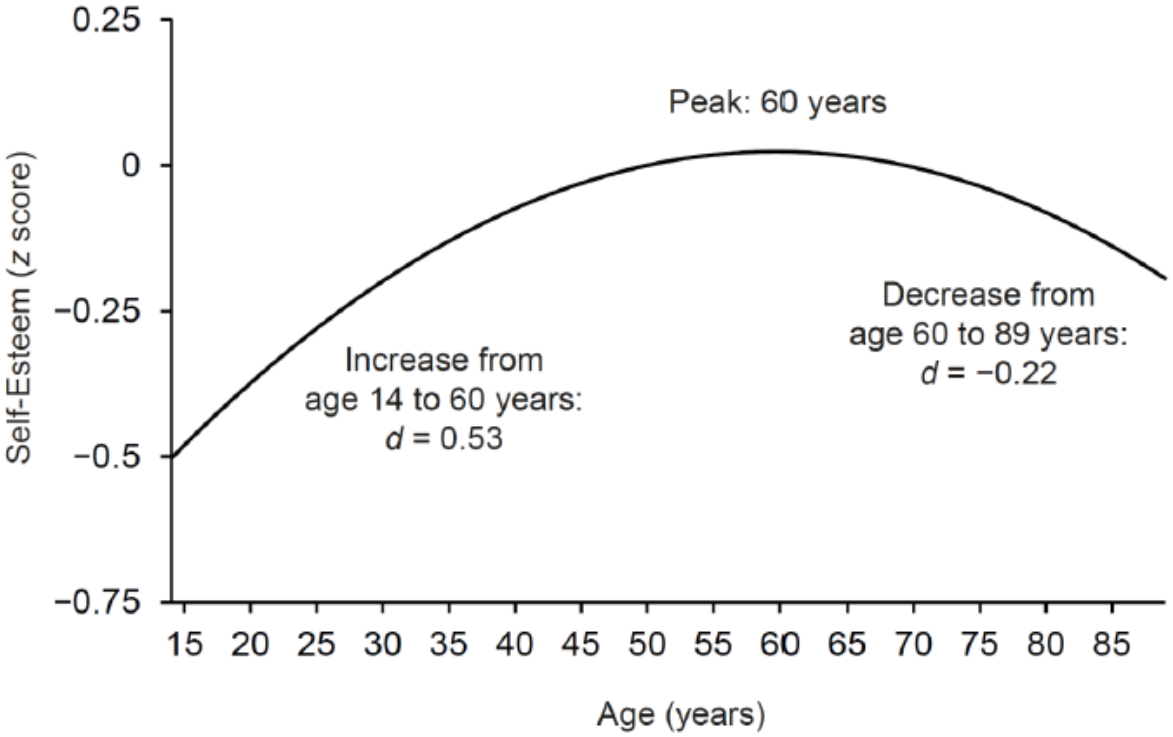
Individual Differences



(Adapted from ideas from Gerhardt, M. W., Rode, J. C., & Peterson, S. J. (2007). Exploring mechanisms in the personality–performance relationship: Mediating roles of self-management and situational constraints. *Personality and Individual Differences*, *43*(6), 1344-1355.)

Personality

Longitudinal changes in self-esteem



Orth, U. (2016) in J. Specht (Ed.), Personality development across the lifespan. Elsevier

Personality

Optimism: cross-sectional and 4-year longitudinal findings

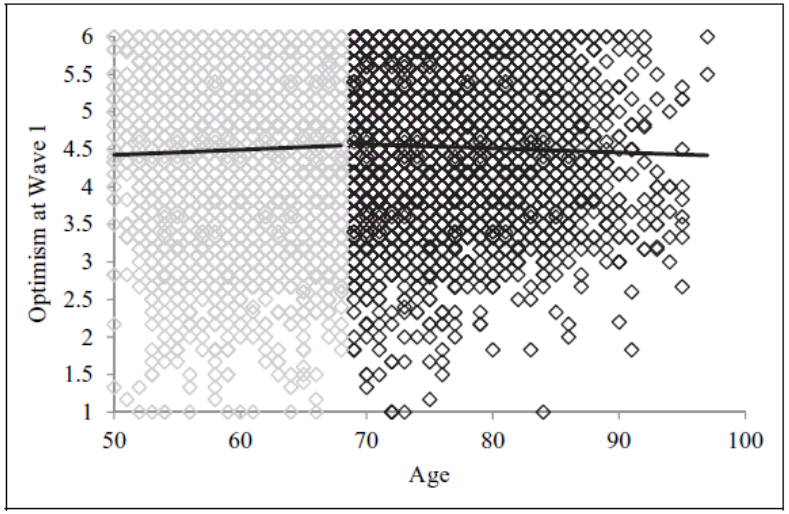


Figure 1. Age differences in optimism at Time 1. Shading of the raw data is different before and after age 68—the identified xmax point of the quadratic function. Regression lines are linear slopes of age differences before and after age 68.

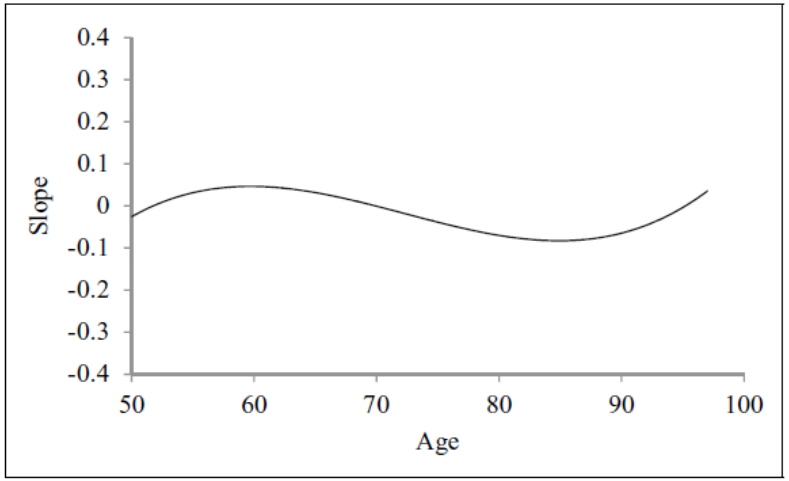


Figure 2. Standardized age differences in mean-level change (latent slope) of optimism over 4 years, controlling for gender and education. Positive values indicate mean-level increases over the 4-year period; negative values indicate mean-level decreases over the 4-year period.

Chopik, W. J., Kim, E. S., & Smith, J. (2015). Changes in optimism are associated with changes in health over time among older adults. *Social psychological and personality science*, *6*(7), 814-822.

Individual Differences

Locus of Control

Concept originally derived from Social Learning Theory (Rotter, 1954)

Extent to which a person believes that they can control outcomes (internal) or that others, chance, fate controls outcomes (external)

Originally conceived to be unidimensional idea and a trait-like characteristic, has become more differentiated and includes less enduring constructs and beliefs that may be impacted by social or environmental circumstances

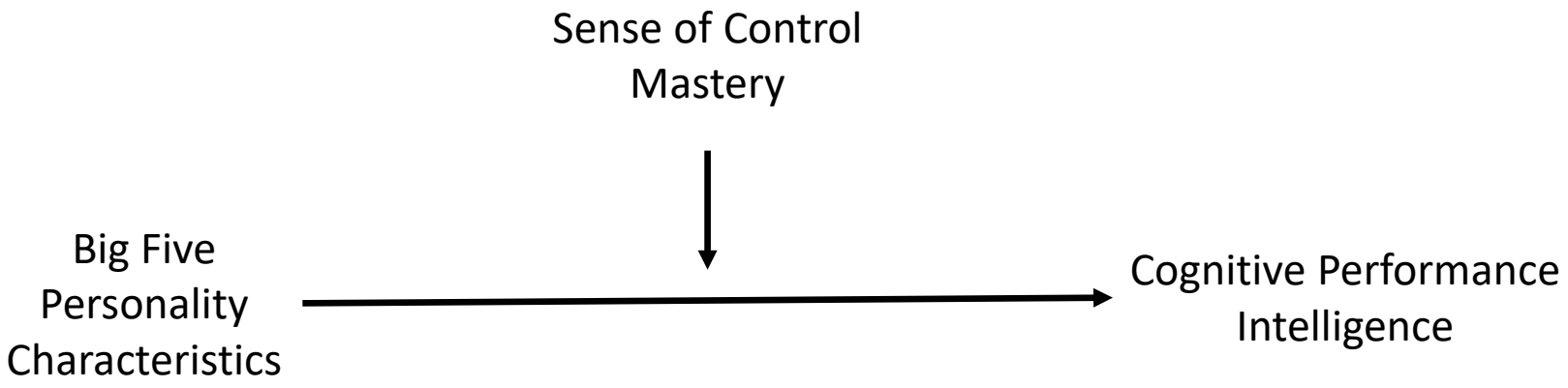
Importance of Individual Differences

Langer and Rodin (1976) study of control

- Experimental study – nursing home residents randomly assigned to choice (control) vs. usual
- Choice condition included ability to changes placement of furniture, freedom to choose social schedule, responsibility for watering plant
- Results: 18 months later better health, lower mortality rate
- Illustrates the potential importance of sense of internal control over events physical health outcomes

Langer E. J. Rodin J . (1976). The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. Journal of Personality and Social Psychology , 34 (2)191–198.

Personality



(e.g., Lee, F. K., Sheldon, K. M., & Turban, D. B. (2003). Personality and the goal-striving process: The influence of achievement goal patterns, goal level, and mental focus on performance and enjoyment. Journal of Applied Psychology, 88(2), 256.)

Importance of Individual Differences

Optimism

Study by Lee and colleagues (2019) examined individuals over 10 years and 30 years

Controlling for health conditions, risk factors, health behaviors, marital status, depression, education, family income

Lee, L. O., James, P., Zevon, E. S., Kim, E. S., Trudel-Fitzgerald, C., Spiro III, A., ... & Kubzansky, L. D. (2019). Optimism is associated with exceptional longevity in 2 epidemiologic cohorts of men and women. *Proceedings of the National Academy of Sciences*, *116*(37), 18357-18362.

Importance of Individual Differences

Table 1. Percent differences in life span associated with optimism in NHS, 2004–2014 (n = 69,744), and NAS, 1986–2016 (n = 1,429)

	Optimism level (Q1 = least optimistic)											
	Q1		Q2		Q3		Q4		Q5		Continuous	
	% difference		%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
NHS (Q = quartile)												
DM	0.0	Ref.	9.6	7.5, 11.9	16.2	13.6, 19.0	18.6	15.4, 21.8	—	—	7.6	6.7, 8.5
DM + HC	0.0	Ref.	7.8	5.7, 10.0	13.3	10.7, 15.9	14.9	11.9, 18.0	—	—	6.1	5.4, 7.0
DM + HC + HB	0.0	Ref.	4.2	2.2, 6.3	7.8	5.3, 10.3	8.7	5.8, 11.6	—	—	3.5	2.6, 4.3
NAS (Q = quintile)												
DM	0.0	Ref.	6.5	−2.2, 15.9	8.7	−0.2, 18.3	11.5	2.3, 21.5	14.0	4.5, 24.4	4.5	1.6, 7.3
DM + HC	0.0	Ref.	4.6	−4.3, 14.3	6.6	−2.5, 16.5	8.3	−1.0, 18.5	10.9	1.3, 21.5	3.5	0.5, 6.6
DM + HC + HB	0.0	Ref.	5.2	−3.6, 14.9	7.7	−1.5, 17.7	6.5	−2.7, 16.6	9.8	0.3, 20.3	2.9	−0.1, 6.0

Notes: CI, confidence interval; DM, demographics model; HB, health behaviors; HC, health conditions; Ref., reference. Optimism was assessed with the LOT-R in NHS and PSM-R in NAS. For both cohorts, higher continuous scores represent higher levels of optimism. For NHS, the demographics model includes baseline age, race, marital status, education, husband's education, and father's occupation. Health conditions include high cholesterol, hypertension, type 2 diabetes, myocardial infarction, stroke, cancer, and depression at baseline. Health behaviors include smoking status, physical activity, alcohol consumption, screening, BMI, and diet. For NAS, the demographics model includes baseline age, being white, being married, education, family income, and father's occupation. Health conditions include high cholesterol, hypertension, type 2 diabetes, heart disease, stroke, cancer, and depression at baseline. Health behaviors include smoking status, alcohol use, physical activity, fruit and vegetable intake, BMI, and physician visit in the past 3 y assessed at baseline.

Lee, L. O., James, P., Zevon, E. S., Kim, E. S., Trudel-Fitzgerald, C., Spiro III, A., ... & Kubzansky, L. D. (2019). Optimism is associated with exceptional longevity in 2 epidemiologic cohorts of men and women. *Proceedings of the National Academy of Sciences*, *116*(37), 18357-18362.

Importance of Individual Differences

Optimism effects may be due to

- Emotional regulation when facing stress
- Engagement in healthier behavior
- Stress mediating pathways, such as endocrine responses, inflammation, blood pressure

Lee, L. O., James, P., Zevon, E. S., Kim, E. S., Trudel-Fitzgerald, C., Spiro III, A., ... & Kubzansky, L. D. (2019). Optimism is associated with exceptional longevity in 2 epidemiologic cohorts of men and women. *Proceedings of the National Academy of Sciences*, *116*(37), 18357-18362.

Importance of Personality

Self-efficacy

Sense of mastery or competence over certain abilities, such as physical abilities, academic abilities, or social interactions

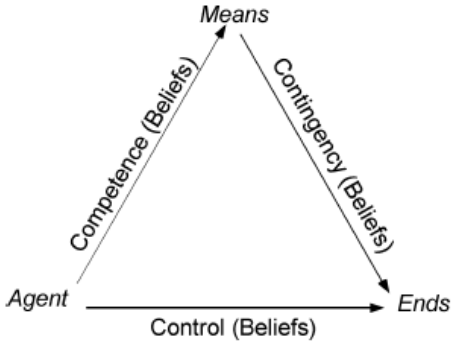


Figure 1
Means–ends relations and agency as components of control (adapted from Skinner et al. 1988 and Flammer 1990)

Farmer, H., Xu, H., & Dupre, M. E. (2022). Self-efficacy. In *Encyclopedia of Gerontology and Population Aging* (pp. 4410-4413). Cham: Springer International Publishing.

Importance of Personality

Self-efficacy

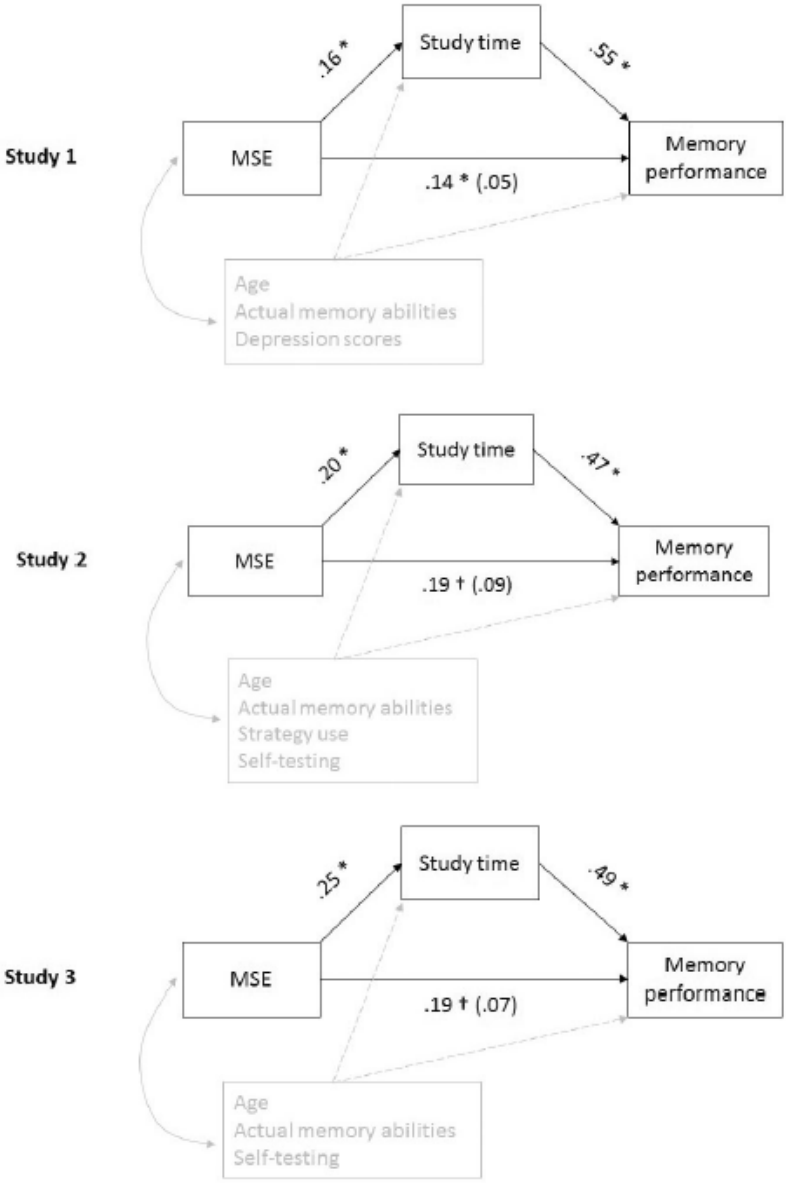
Beaudoin and Desrichard (2017) examined relationship of memory self-efficacy to performance on six memory exercises (remembering names, digits, years, shopping lists, object locations, and the location of symbols in a grid),

Beaudoin, M., & Desrichard, O. (2017). Memory self-efficacy and memory performance in older adults. Swiss Journal of Psychology. 76 (1), 23–33

Importance of Personality

Self-efficacy

MSE = memory self efficacy



Beaudoin, M., & Desrichard, O. (2017). Memory self-efficacy and memory performance in older adults. Swiss Journal of Psychology. 76 (1), 23–33