

Affect, Behavior, Cognition, and Desire in the Big Five: An Analysis of Item Content and Structure

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July 31, 2015

Overview

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- Develop the argument that assessments of the Big Five do not match conceptual definitions of traits

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- Present a study selecting items that have the potential to produce an assessment of the Big Five that better matches conceptual definitions of traits
- Present a study (employing the SAPA technique) examining the structure of Big Five items that assess affective, behavioral, cognitive, and motivational/desire (ABCD) content
- Consider some implications and future directions of the ABCD approach

The Big-Five

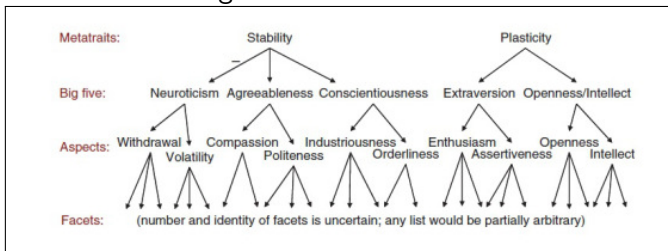
- Agreeableness
 - cooperative, trustworthy - argumentative, impolite
- Conscientiousness
 - responsible, organized - undisciplined, careless
- Emotional Stability
 - secure, assured - moody, worried
- Extraversion
 - talkative, energetic - reserved, timid
- Openness
 - intellectual, creative - unimaginative, unoriginal

Conceptualizing and organizing traits in the Big-Five taxonomy

- Hierarchical arrangement

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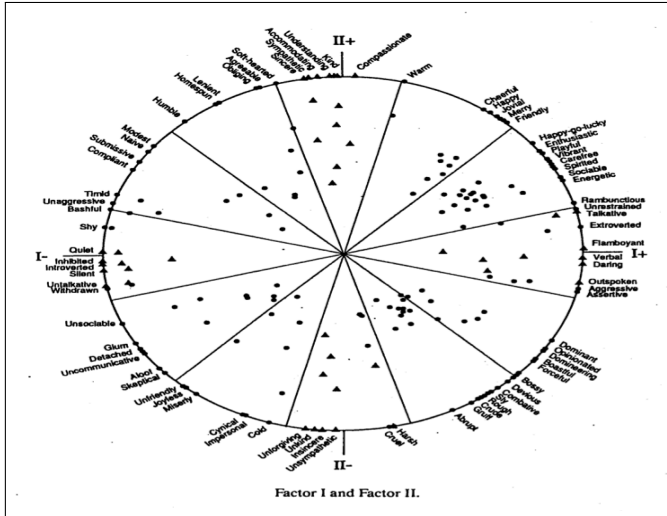


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What is a Big-Five trait?

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- The “psychological nature” of Big Five traits has yet to be specified (Tellegen, 1991, p. 30)

What is a Big-Five trait?

- “Just what are these Big Five?” (Lamiell, 2000, p. 2)

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- “What do we assess when we assess a Big Five trait?”
(Pytlik Zillig et al., 2002, p. 846)

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- “What do we assess when we assess a Big Five trait?” (Pytlik Zillig et al., 2002, p. 846)
- “A valid criticism of many modern personality trait theorists and researchers is that they have not provided a deeper analysis of the constituent elements that make up traits.” (Roberts, 2009, p.140)

What is a trait?

- “Personality is an abstraction used to explain consistency and coherency in an individual’s pattern of Affects, Cognitions, Desires and Behaviors.” (Revelle, 2007, p. 37)

What is a trait?

- Evolution of the trait concept
 - Behavior: character types (e.g., the “Chatty man”) of Theophrastus (371-287 BC) (Theophrastus, 1909)

What is a trait?

- Evolution of the trait concept
 - Affect and Behavior: temperaments (Sanguine, Choleric, Melancholic, Phlegmatic) of Galen (129-217 AD) (Stelmack & Stalikas, 1991)

What is a trait?

- Evolution of the trait concept
- Affect, Behavior, Cognition, and Motivation (or Desire):
Activity and Emotivity dimensions from Gerard Heymans
(Eysenck, 1992)

What is a trait?

- Evolution of the trait concept
- A, B, C, and (sometimes) D: (Ashton & Lee, 2001; Heckhausen, 1991; Johnson, 1997; Pervin, 1994; Read et al., 1990; Winter et al., 1998)

What is a trait?

Evolution of the Trait Concept



Theophrastus
(c. 371 – c. 287 BC)
Behavior

Galen
(c. 129 – c. 201 AD)
Affect
Behavior

Heymans
(1857-1930 AD)
Affect
Behavior
Cognition
Motivation (Desire)

e.g., Ashton,
Heckhausen,
Read
(ABC and D)

e.g., Johnson,
Pervin,
Winter
(ABC)

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- Extraversion - behavior and affect
- Agreeableness - blend of affect, behavior, and cognition
- Conscientiousness - mostly behavior
- Neuroticism - affect
- Openness - cognition

Present Studies

The ABCD Approach to the Big Five

- Current assessments of traits do not capture all psychological elements included in the conceptual definitions of traits

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The ABCD Approach to the Big Five

- Study 1: Content analysis of traits and selection of “pure items”

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The ABCD Approach to the Big Five

- Study 1: Content analysis of traits and selection of “pure items”
- Study 2: Correlational and structural analyses of “pure items” and creation of ABCD scales

Study 1: Content analysis and selecting pure items

- Psychology graduate and undergraduate students rated IPIP NEO-PI-R and IPIP AB5C items with respect to their ABCD content

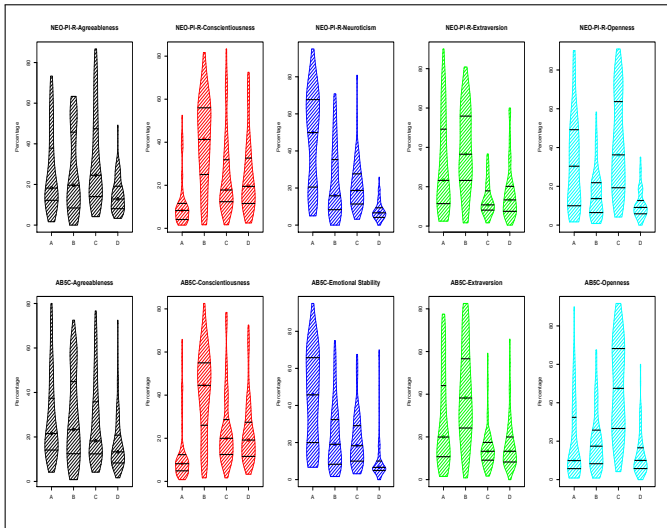
Study 1: Content analysis and selecting pure items

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Item	Affect	Behavior	Cognition	Desire	Total percentage
Am attached to conventional ways	5	10	65	20	100
Am quick to judge others	10	20	70	0	100
Only feel comfortable with friends	75	20	5	0	100
Make a mess of things	15	30	55	0	100
Listen to my conscience	0	30	40	30	100
Have a point of view all my own	0	5	80	15	100
Want to be left alone	5	5	10	80	100
Obstruct others' plans	0	45	30	25	100
Have difficulty starting tasks	10	40	30	20	100
Would never go hang gliding	0	70	5	25	100

Study 1: Content analysis

Within-and-between trait differences in distributions of ABCD content

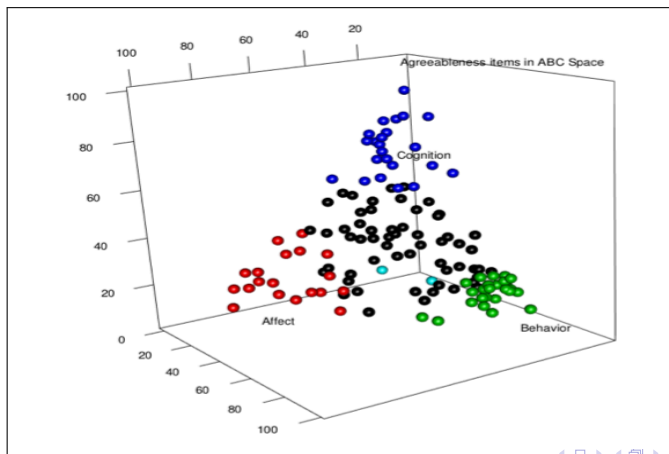


Study 1: Selecting ABCD items

- For each trait, we selected 28 items total: 7 items for each A, B, C, and D content

Study 1: Selecting ABCD items

- Example of Agreeableness items in ABC space



Study 2

sapa-project.org

- 11,489 participants (7,597 women)
- The SAPA technique was used to present a subset of ABCD items to each participant and to generate a correlation matrix containing all of the 140 ABCD items.

Study 2

sapa-project.org

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 - ABCD scale (corrected for item overlap)

Agreeableness ABCD Items

Correlations (corrected for item-overlap) between items with trait domain and ABCD scales

	A	Aa	Ab	Ac	Ad
<i>Affect items</i>					
Sympathize with others feelings	0.67	0.82	0.44	0.38	0.48
Feel sympathy for those who are worse off than myself	0.56	0.73	0.33	0.34	0.37
Have a soft heart	0.57	0.68	0.36	0.35	0.41
Suffer from others sorrows	0.44	0.65	0.18	0.22	0.30
Love children's movies	0.33	0.37	0.19	0.25	0.25
Feel little concern for others	-0.40	-0.40	-0.30	-0.28	-0.31
Tend to dislike soft-hearted people	-0.53	-0.61	-0.40	-0.30	-0.39
Average correlation of items with scale	0.50	0.61	0.31	0.30	0.36
<i>Behavior items</i>					
Show my gratitude	0.51	0.42	0.47	0.35	0.42
Have a good word for everyone	0.53	0.38	0.45	0.47	0.43
Reassure others	0.53	0.50	0.45	0.40	0.38
Comment loudly about others	-0.24	-0.12	-0.33	-0.11	-0.27
Play tricks on others	-0.23	-0.09	-0.39	-0.14	-0.18
Tell tall stories about myself	-0.28	-0.07	-0.56	-0.10	-0.27
Do dangerous things	-0.29	-0.10	-0.57	-0.08	-0.26
Average correlation of items with scale	0.37	0.24	0.46	0.24	0.32
<i>Cognition items</i>					
Believe that others have good intentions	0.53	0.32	0.31	0.76	0.33
Believe that people are basically moral	0.48	0.32	0.22	0.74	0.26
Believe in human goodness	0.54	0.38	0.41	0.59	0.39
Remember my friends birthdays	0.37	0.26	0.20	0.43	0.32
Think that all will be well	0.31	0.13	0.24	0.37	0.30
Believe people should fend for themselves	-0.23	-0.22	-0.20	-0.13	-0.18
Believe that people are essentially evil	-0.45	-0.21	-0.29	-0.65	-0.33
Average correlation of items with scale	0.42	0.26	0.27	0.52	0.30
<i>Desire items</i>					
Want to mean something to others	0.40	0.35	0.12	0.25	0.60
Work on improving myself	0.35	0.26	0.26	0.28	0.37
Try to stay in touch with myself	0.32	0.24	0.29	0.23	0.28
Want to please others	0.31	0.36	0.18	0.25	0.20
Try to outdo others	-0.26	-0.15	-0.33	-0.14	-0.28
Seek conflict	-0.44	-0.19	-0.45	-0.28	-0.59
Cheat to get ahead	-0.43	-0.19	-0.40	-0.28	-0.62
Average correlation of items with scale	0.36	0.25	0.29	0.24	0.42

Conscientiousness ABCD Items

Correlations (corrected for item-overlap) between items with trait domain and ABCD scales

	C	Ca	Cb	Cc	Cd
<i>Affect items</i>					
Like order	0.53	0.57	0.28	0.24	0.55
Dislike imperfect work	0.48	0.51	0.19	0.21	0.61
Tend to dislike impulsive people	0.26	0.47	0.15	0.05	0.18
Like to laugh out loud	-0.01	-0.28	-0.07	0.17	0.13
Like to act on a whim	-0.31	-0.37	-0.34	-0.20	-0.06
Dislike routine	-0.33	-0.44	-0.27	-0.12	-0.20
Am not bothered by messy people	-0.38	-0.37	-0.39	-0.08	-0.29
Average correlation of items with scale	0.33	0.43	0.24	0.15	0.29
<i>Behavior items</i>					
Get chores done right away	0.59	0.33	0.62	0.35	0.45
Return borrowed items	0.40	0.21	0.50	0.25	0.22
Do crazy things	-0.37	-0.41	-0.43	-0.23	-0.06
Am often late to work	-0.42	-0.25	-0.57	-0.24	-0.17
Leave a mess in my room	-0.50	-0.34	-0.61	-0.27	-0.26
Make a mess of things	-0.59	-0.38	-0.71	-0.46	-0.24
Leave my belongings around	-0.55	-0.42	-0.76	-0.24	-0.21
Average correlation of items with scale	0.49	0.33	0.60	0.29	0.23
<i>Cognition items</i>					
Come up with good solutions	0.38	0.06	0.12	0.61	0.43
Detect mistakes	0.35	0.23	0.11	0.34	0.43
Believe in a logical answer for everything	0.27	0.05	0.12	0.35	0.33
Don't think laws apply to me	-0.27	-0.19	-0.28	-0.27	-0.09
Seldom notice details	-0.26	-0.18	-0.16	-0.28	-0.21
Don't see the consequences of things	-0.38	-0.19	-0.34	-0.54	-0.11
Misjudge situations	-0.31	-0.13	-0.29	-0.56	-0.01
Average correlation of items with scale	0.32	0.15	0.20	0.42	0.23
<i>Desire items</i>					
Want every detail taken care of	0.57	0.47	0.29	0.23	0.74
Want everything to be just right	0.47	0.44	0.15	0.13	0.73
Demand quality	0.34	0.15	0.10	0.22	0.57
Demand perfection in others	0.35	0.34	0.08	0.20	0.49
Set high standards for myself and others	0.31	0.11	0.11	0.27	0.48
Want things to proceed according to plan	0.43	0.39	0.25	0.26	0.43
Need a push to get started	-0.41	-0.26	-0.42	-0.33	-0.23
Average correlation of items with scale	0.41	0.31	0.20	0.23	0.52

Emotional Stability ABCD Items

Correlations (corrected for item-overlap) between items with trait domain and ABCD scales

	S	Sa	Sb	Sc	Sd
<i>Affect items</i>					
Seldom feel blue	0.30	0.29	0.14	0.27	0.04
Tend to feel the same every day	0.12	0.28	0.08	0.04	-0.04
Am easily hurt	-0.59	-0.64	-0.36	-0.56	-0.34
Feel desperate	-0.60	-0.63	-0.40	-0.64	-0.24
Often feel blue	-0.60	-0.76	-0.34	-0.60	-0.17
Am often down in the dumps	-0.63	-0.71	-0.35	-0.68	-0.22
Have frequent mood swings	-0.65	-0.66	-0.49	-0.55	-0.34
<i>Average correlation of items with scale</i>	0.50	0.57	0.31	0.48	0.20
<i>Behavior items</i>					
Blurt out whatever comes into my mind	-0.44	-0.17	-0.70	-0.27	-0.26
Shoot my mouth off	-0.42	-0.21	-0.53	-0.32	-0.31
Barge in on conversations	-0.41	-0.25	-0.53	-0.20	-0.39
Go on binges	-0.44	-0.32	-0.51	-0.33	-0.27
Often eat too much	-0.48	-0.34	-0.55	-0.29	-0.37
Stumble over my words	-0.48	-0.39	-0.48	-0.48	-0.19
Snap at people	-0.50	-0.41	-0.51	-0.35	-0.34
<i>Average correlation of items with scale</i>	0.45	0.30	0.54	0.32	0.30
<i>Cognition items</i>					
Don't worry about things that have already happened	0.27	0.38	0.06	0.27	0.10
Don't know why I do some of the things I do	-0.49	-0.46	-0.44	-0.48	-0.23
Have a low opinion of myself	-0.50	-0.64	-0.34	-0.48	-0.17
Am easily confused	-0.47	-0.36	-0.41	-0.51	-0.25
Can't concentrate	-0.57	-0.42	-0.45	-0.71	-0.25
Am not sure where my life is going	-0.48	-0.44	-0.26	-0.74	-0.07
Am filled with doubts about things	-0.63	-0.60	-0.38	-0.80	-0.20
<i>Average correlation of items with scale</i>	0.49	0.47	0.33	0.57	0.18
<i>Desire items</i>					
Am able to control my cravings	0.34	0.20	0.36	0.37	0.12
Try to impress others	-0.33	-0.22	-0.20	-0.27	-0.39
Want to be told I am right	-0.35	-0.25	-0.26	-0.16	-0.51
Demand obedience	-0.25	-0.04	-0.22	-0.01	-0.56
Want everything to add up perfectly	-0.30	-0.15	-0.19	-0.10	-0.56
Demand attention	-0.45	-0.25	-0.45	-0.09	-0.73
Want things done my way	-0.44	-0.19	-0.35	-0.16	-0.73
<i>Average correlation of items with scale</i>	0.35	0.19	0.29	0.17	0.51

Extraversion ABCD Items

Correlations (corrected for item-overlap) between items with trait domain and ABCD scales

	E	Ea	Eb	Ec	Ed
<i>Affect items</i>					
Feel comfortable around people	0.57	0.56	0.50	0.38	0.50
Have a lot of fun	0.56	0.71	0.45	0.24	0.48
Love excitement	0.56	0.60	0.39	0.41	0.51
Love surprise parties	0.47	0.67	0.35	0.23	0.32
Express childlike joy	0.41	0.57	0.28	0.16	0.36
Dislike neighbors living too close	-0.21	-0.33	-0.13	-0.08	-0.15
Often feel uncomfortable around others	-0.55	-0.62	-0.43	-0.36	-0.45
Average correlation of items with scale	0.48	0.58	0.36	0.27	0.40
<i>Behavior items</i>					
Start conversations	0.59	0.55	0.54	0.41	0.49
Speak loudly	0.55	0.46	0.57	0.39	0.45
Make a lot of noise	0.52	0.34	0.76	0.27	0.35
Never stop talking	0.48	0.34	0.58	0.31	0.36
Am the first to act	0.56	0.32	0.48	0.58	0.55
Speak softly	-0.46	-0.20	-0.71	-0.30	-0.31
Don't talk a lot	-0.64	-0.51	-0.73	-0.48	-0.44
Average correlation of items with scale	0.54	0.39	0.62	0.39	0.42
<i>Cognition items</i>					
Know how to captivate people	0.61	0.41	0.48	0.72	0.51
React quickly	0.43	0.23	0.30	0.68	0.34
Come up with a solution right away	0.38	0.22	0.23	0.54	0.39
Can take strong measures	0.32	0.20	0.19	0.29	0.45
Know no limits	0.30	0.21	0.20	0.28	0.36
Let things proceed at their own pace	-0.09	0.06	-0.09	-0.19	-0.10
Keep my thoughts to myself	-0.45	-0.24	-0.50	-0.48	-0.34
Average correlation of items with scale	0.37	0.22	0.28	0.45	0.36
<i>Desire items</i>					
Try to lead others	0.61	0.38	0.44	0.55	0.76
Know what I want	0.45	0.30	0.24	0.40	0.64
Can easily push myself forward	0.50	0.35	0.28	0.52	0.63
Seek adventure	0.56	0.57	0.35	0.46	0.57
Seek to influence others	0.45	0.25	0.30	0.45	0.57
Demand to be the center of interest	0.41	0.24	0.46	0.34	0.35
Seek quiet	-0.38	-0.44	-0.44	-0.19	-0.19
Average correlation of items with scale	0.48	0.36	0.36	0.42	0.53

Openness ABCD Items

Correlations (corrected for item-overlap) between items with trait domain and ABCD scales

	O	Oa	Ob	Oc	Od
<i>Affect items</i>					
Like music	0.45	0.59	0.30	0.17	0.47
Love beautiful things	0.40	0.48	0.28	0.18	0.41
Like to visit new places	0.39	0.70	0.17	0.19	0.27
Love flowers	0.29	0.46	0.19	0.11	0.24
Can't stand being alone	-0.11	-0.14	-0.13	-0.12	0.01
Do not like concerts	-0.11	-0.46	0.09	0.01	-0.06
Dislike changes	-0.12	-0.17	-0.08	-0.11	-0.04
<i>Average correlation of items with scale</i>	0.27	0.43	0.18	0.13	0.21
<i>Behavior items</i>					
Make beautiful things	0.49	0.38	0.51	0.33	0.39
Do things at my own pace	0.28	0.19	0.25	0.17	0.30
Use difficult words	0.50	0.18	0.66	0.45	0.32
Carry the conversation to a higher level	0.45	0.17	0.40	0.40	0.44
Ask questions that nobody else does	0.43	0.07	0.36	0.50	0.36
Tend to vote for liberal political candidates	0.26	0.05	0.46	0.16	0.19
Skip difficult words while reading	-0.29	-0.06	-0.46	-0.27	-0.12
<i>Average correlation of items with scale</i>	0.39	0.16	0.44	0.33	0.30
<i>Cognition items</i>					
Have difficulty understanding abstract ideas	-0.39	-0.12	-0.32	-0.55	-0.19
Think deeply about things	0.45	0.17	0.48	0.36	0.44
Catch on to things quickly	0.52	0.17	0.40	0.70	0.31
Am full of ideas	0.65	0.25	0.59	0.71	0.46
Quickly think up new ideas	0.65	0.22	0.50	0.73	0.52
Can easily link facts together	0.60	0.15	0.55	0.74	0.38
Quickly get the idea of things	0.62	0.24	0.47	0.74	0.44
<i>Average correlation of items with scale</i>	0.55	0.19	0.47	0.65	0.39
<i>Desire items</i>					
Seek explanations of things	0.53	0.24	0.49	0.34	0.66
Try to understand myself	0.49	0.22	0.27	0.40	0.65
Need a creative outlet	0.50	0.28	0.41	0.35	0.59
Need to understand my motives	0.32	0.10	0.24	0.14	0.56
Am passionate about causes	0.39	0.30	0.26	0.23	0.47
Meet challenges	0.48	0.41	0.37	0.41	0.37
Come up with bold plans	0.37	0.22	0.38	0.31	0.28
<i>Average correlation of items with scale</i>	0.44	0.25	0.35	0.31	0.51

Conceptual Content of ABCD Scales

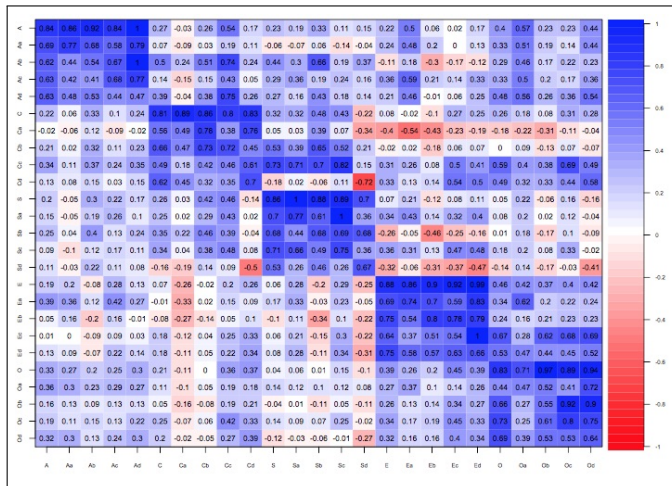
ABCD Scale	Name	Representative item
Aa	Sympathetic affect	Sympathize with others' feelings
Ab	Considerate behavior	Comment loudly about others (R)
Ac	Trusting cognitions	Believe that others have good intentions.
Ad	Affiliative desire	Want to mean something to others
Ca	Affinity for routine affect	Dislike routine (R)
Cb	Responsible behavior	Return borrowed things
Cc	Perceptive cognition	Seldom notice details
Cd	Perfectionistic desire	Want everything to be "just right"
Sa	Stable affect	Have frequent mood swings (R)
Sb	Respectful behavior	Barge in on conversations (R)
Sc	Composed cognition	Am easily confused (R)
Sd	Tolerant desire	Want things done my way (R)
Ea	Positive affect	Love excitement
Eb	Gregarious behavior	Make a lot of noise
Ec	Spontaneous cognition	Come up with a solution right away
Ed	Attention-seeking desire	Demand to be the center of interest
Oa	Appreciation for beauty affect	Love beautiful things
Ob	Challenging behavior	Ask questions that nobody else does
Oc	Intellectual cognition	Think deeply about things
Od	Inquisitive desire	Seek explanations of things

Factor Analysis of ABCD Scales

Minimum Residual Factor Analysis using Oblimin Rotation

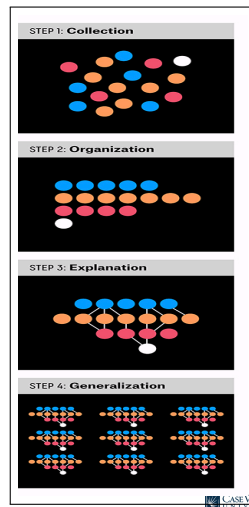
Variable	A	C	S	E	O	h2	u2	com
Aa	0.73	-0.01	-0.24	0.16	0.01	0.55	0.45	1.32
Ab	0.68	0.09	0.16	-0.20	0.06	0.59	0.41	1.35
Ac	0.57	-0.08	0.09	0.25	0.00	0.43	0.57	1.48
Ad	0.67	0.05	0.03	0.02	0.13	0.51	0.49	1.09
Ca	-0.01	0.72	0.12	-0.27	-0.18	0.62	0.38	1.49
Cb	0.17	0.45	0.48	-0.10	-0.13	0.51	0.49	2.53
Cc	0.19	0.24	0.50	-0.02	0.30	0.54	0.46	2.49
Cd	0.06	0.77	-0.05	0.14	0.20	0.75	0.25	1.22
Sa	-0.01	-0.05	0.78	0.22	-0.09	0.65	0.35	1.20
Sb	0.23	0.01	0.66	-0.32	-0.02	0.65	0.35	1.72
Sc	-0.13	0.00	0.85	0.19	0.09	0.75	0.25	1.17
Sd	0.13	-0.53	0.45	-0.33	0.00	0.61	0.39	2.80
Ea	0.35	-0.13	0.11	0.76	-0.09	0.71	0.29	1.55
Eb	-0.06	-0.06	-0.05	0.75	0.02	0.58	0.42	1.04
Ec	-0.20	0.11	0.15	0.51	0.39	0.60	0.40	2.54
Ed	-0.04	0.17	0.17	0.75	0.15	0.72	0.28	1.29
Oa	0.36	-0.04	0.03	0.16	0.24	0.27	0.73	2.22
Ob	0.01	-0.10	-0.07	-0.03	0.76	0.54	0.46	1.06
Oc	0.00	-0.01	0.14	-0.04	0.83	0.69	0.31	1.06
Od	0.21	0.14	-0.19	0.06	0.65	0.59	0.41	1.51

Correlation Plot



Making sense of the ABCD approach

- The ABCD approach is not meant to overhaul the study of trait assessment
- It may be better thought of as involving subtle adjustments to the way that personality data are collected, organized, linked, and generalized



Is “balanced” better?

- Construct validity of personality tests rests partly on showing that the content of measurement instruments corresponds to theoretical content (Loevinger, 1957)

Is “balanced” better?

- Although the ABCD approach could be useful as an overarching conceptual framework for traits, perhaps individual traits are more about one or two ABCD contents.

Is “balanced” better?

- The ABCD scales might operationalize traits too broadly

Moving forward

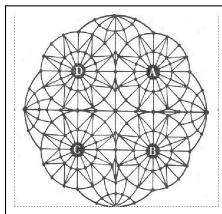
- Future directions
 - Generate larger pool of ABCD items and examine factorial structure

Moving forward

- Future directions
 - Generate larger pool of ABCD items and examine factorial structure
 - Establish incremental validity of ABCD scales

Thank you!

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- National Institute of Mental Health: NIMH Grant F31-MH093041



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