THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Big Five and non-personality outcomes: $r = 0.20$, $r = 0.25$, $r = 0.19$, $r = 0.27$, $r = 0.30$ and what we can learn from that

Citation for published version:

Möttus, R 2013, 'Big Five and non-personality outcomes: $r = 0.20$, $r = 0.25$, $r = 0.19$, $r = 0.27$, $r = 0.30$ and what we can learn from that: Personality and Individual Differences', Paper presented at International Society for the Study of Individual Differences (ISSID 2013), Barcelona, Spain, 20/06/13 - 22/06/13 pp. S5-S6. <https://doi.org/10.1016/j.paid.2013.07.159>

Digital Object Identifier (DOI):

[10.1016/j.paid.2013.07.159](https://doi.org/10.1016/j.paid.2013.07.159)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Big Five and non-personality outcomes

$r = 0.20$ $r = 0.25$ $r = 0.19$ $r = 0.27$ $r = 0.30$

René Mõttus

University of Tartu & University of Edinburgh

What do these items have in common?

- Carrot
- Cabbage
- Eggplant
- Potato

What do these items have in common?

If you ...

- ... behave antisocially
- ... have had a divorce
- ... smoke and drink too much
- ... display risky sexual behaviour and have had a STD
- ... do not adhere to treatment
- ... perform academically poorly
- ... have low job satisfaction
- ... behave counterproductively at workplace
- ... have low well-being
- ... are already dead

... chances are that you would score (but only slightly) ...

- ... above-average in Neuroticism
- ... below-average in Agreeableness
- ... below-average in Conscientiousness
- ... possibly below-average in Extraversion and Openness

$r = 0.05 \dots 0.25$

All positive things go together

A fact of life

Some unspecific variance shining through traits?

A latent thing underlying latent things

What is the 'unspecific variance' anyway?

The Big Good Trait. Or just junk

Everything correlates with everything

Because everything matters a bit for something

How much do the **particular traits** contribute?

Or is it just the unspecific thing all over the place

Why bother?

Isn't the Big Five just good enough?

- If we want to **'validate' particular traits** by showing their links with outcomes, the lurking unspecific variance is bad
- If we want to **explain outcomes**, unspecific variance is not really helpful either

We may need an adjusted baseline

To interpret trait-outcome associations

A possible solution:

- Create random traits, correlate these to the outcome
- The random associations may provide a better baseline
- Compare 'true' associations with this instead

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

The specificity metric as a diagnostic tool

Probability of a 'true' trait beating out a random trait

$$Specificity = \frac{\sum_{i=1}^k (true.association > random.association)}{k} \quad (1)$$

k is the number of random item draws

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

Random NEO-FFI traits predict school grades

And beat out super-significant neuroticism and openness

	Estimate	p	Specificity
Neuroticism	0.10	0.001	0.36
Openness	0.10	0.001	0.35
Conscientiousness	0.23	0.001	1.00
Average random trait	0.12	0.001	

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

specificity: An R-package (in CRAN)

Univariate associations along with specificity estimates and adjusted effect sizes:

	Estimate	Std. Error	t value	Pr(> t)	Spec	Adj.Est
Neuroticism	0.103	0.027	3.848	0.000	0.363	-0.017
Extraversion	-0.026	0.027	-0.969	0.333	1.000	-0.191
Openness	0.099	0.028	3.519	0.000	0.349	-0.016
Agreeableness	0.052	0.027	1.960	0.050	0.018	-0.082
Conscientiousness	0.231	0.025	9.078	0.000	1.000	0.155

Mean random association: 0.122

Konstabel, K. & Möttus, R. (2013). specificity: Specificity of personality trait-outcome associations. R package version 0.11.

Random BFI traits predict psychopathy

And beat out super-significant neuroticism, openness, and conscientiousness

	Estimate	p	Specificity
Emotional Stability	-0.32	0.001	0.56
Extraversion	-0.08	0.04	0.00
Openness	-0.13	0.001	0.00
Agreeableness	-0.45	0.001	1.00
Conscientiousness	-0.30	0.001	0.45

Average random trait	0.33	0.001	
----------------------	------	-------	--

Mõttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

Conclusions

When random scoops of items do a better job than the Broad Traits

- Some super-duper significant trait-outcome associations reflect unspecific variance kicking around in personality ratings
- The unspecific variance may be True Variance (of whatever sort)
- But it may also reflect junk
- In either case, such associations hard to interpret at face value
- Trait-outcome associations poor indicators of trait validity
- The specificity metric provides diagnostic information

Primus

ELLU VIIB SIHTASUTUS
ARCHIMEDES

rene.mottus@ed.ac.uk