Replicating and Extending the Link Between Jung And The Big Five: A Cross-Validation of the Trait Response Personality Indicator

Ryan Rook[1]

[1]Trait Indicator

Abstract

This study examines the Trait Response Personality Indicator (TRPI) by deriving sixteen Jungian type labels from 26-item Big Five profiles in a 2,916-participant sample. Tenfold cross-validation of profile–prototype similarity produced a grand-mean Fisher-transformed correlation of 0.833 (range 0.598–0.913 across types) and permutation testing with 50,000 random shuffles never equaled the observed fit ($p < 2 \times 10^{-5}$). Classic dichotomy effects were robustly replicated: Intuition exceeded Sensing by 0.24 SD in openness, Judging outscored Perceiving by 0.21 SD in conscientiousness, Thinkers displayed 0.29 SD lower agreeableness and 0.24 SD lower neuroticism than Feelers, while Extraverts surpassed Introverts by 0.23 SD in extraversion. Partitioning the sixteen types into four "cognitive clusters" (SF/NTs, FS/TNs, ST/NFs, TS/FNs), extends typological insight beyond classical types, giving rise to a deeper understanding of our inner workings.

Keywords: TRPI; Jungian functions; Big Five; cross validation; cognitive clusters

1 Introduction

The conceptual bridge between Jung's (1921) typology and the Big Five has been empirically addressed since Costa and McCrae (1992) demonstrated that Sensing–Intuition tracks openness and Judging–Perceiving aligns with conscientiousness. Furnham (1996) extended that work using the Myers–Briggs Type Indicator (MBTI) and the NEO-PI-R, finding moderate to large mean-level differences across dichotomies. Despite decades of use, concerns persist about MBTI reliability [4] and its commercial restrictions. The TRPI offers an alternative short-form inventory that yields both Big Five scores and a 16-type label inferred by profile matching.

Our efforts were threefold. First, we attempted the replication of canonical Jung–Big Five relationships using TRPI data. Second, we subjected the sixteen-type mapping procedure to rigorous 10-fold cross-validation and 50k-fold permutation benchmarking. Third, we introduced a four-group "cognitive cluster" taxonomy—SF/NTs, FS/TNs, ST/NFs, TS/FNs—hypothesised to capture finer affective variance that escapes singular types.

2 Methods

2.1 Participants and Procedure

Participants were recruited via social-media advertisements directing volunteers to traitindicator.com. After list-wise deletion for missing data and patterned responding, the final analytic sample comprised $n = 2,916$. No compensation was offered.

2.2 Measure – TRPI Short-form

The TRPI employs 26 items (0–100 visual analogue format), sampling openness (6 items), conscientiousness (5), extraversion (5), agreeableness (5), and neuroticism (5) from a total pool of 87 statements. Scale reliabilities (Cronbach's α) in the present data were 0.70, 0.97, 0.92, 0.96, and 0.97, respectively.

2.3 Deriving Sixteen-Type Labels

For each of the sixteen Jungian types we specified a prototypical Big Five vector based on a small dataset of $n = 140$, where participants reported both their Big Five scores and type. Each participant's standardised Big Five vector was correlated with every prototype; a composite similarity score (Fisher-z of r minus scaled Euclidian distance) determined the best-fitting type.

2.4 Grouping Schemes

Participants were aggregated along two classification axes:

- **Classical dichotomies.** Extraversion/Introversion (E/I), Sensing/Intuition (S/N), Thinking/Feeling (T/F), Judging/Perceiving (J/P).

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- **Cognitive clusters.**

  - SF/NTs = {ENTP, INTJ, ISFJ, ESFP}

  - FS/TNs = {INTP, ENTJ, ESFJ, ISFP}

  - ST/NFs = {ESTP, ISTJ, INFJ, ENFP}

  - TS/FNs = {ISTP, ESTJ, ENFJ, INFP}

2.5 Cross-validation and Permutation Test

A stratified 10-fold split preserved the global type distribution within folds. For each fold the training set computed type-mean profiles; test participants were correlated with their type mean, yielding ten per-fold correlations aggregated by Fisher transformation. To benchmark chance fit, group labels were randomly permuted within folds 50,000 times; the best random correlation constituted the null reference.

3 Results

3.1 Cross-validated Profile Agreement

The grand-mean Fisher-r across all 2,916 hold-out evaluations was 0.833. No fold mean fell below 0.74. In 50k permutations the best random Fisher-r was 0.215; the empirical distribution never overlapped the observed mean ($p < 2 \times 10^{-5}$).

Table 1: Ten-fold cross-validated agreement by Jungian type.

Type	n	Mean r	Perm. p
ENTP	301	0.897	$< 2 \times 10^{-5}$
INFJ	382	0.800	$< 2 \times 10^{-5}$
ISTP	93	0.671	$< 2 \times 10^{-5}$
INTP	187	0.837	$< 2 \times 10^{-5}$
ENTJ	145	0.913	$< 2 \times 10^{-5}$
INTJ	229	0.863	$< 2 \times 10^{-5}$
ESFP	157	0.598	$< 2 \times 10^{-5}$
ENFP	299	0.803	$< 2 \times 10^{-5}$
ISFP	222	0.826	$< 2 \times 10^{-5}$
INFP	239	0.889	$< 2 \times 10^{-5}$
ESFJ	85	0.804	$< 2 \times 10^{-5}$
ESTP	97	0.789	$< 2 \times 10^{-5}$
ISFJ	174	0.843	$< 2 \times 10^{-5}$
ISTJ	94	0.784	$< 2 \times 10^{-5}$
ENFJ	176	0.847	$< 2 \times 10^{-5}$
ESTJ	36	0.845	$< 2 \times 10^{-5}$

3.2 Replication of classical dichotomy mean differences

Mean Big Five scores by MBTI dichotomy, as observed in the present sample, are summarized in Table 2. The differences between groups are as follows:

- **Openness:** Intuitors scored higher than Sensors (mean difference = 0.22).

- **Conscientiousness:** Judgers outscored Perceivers (mean difference = 0.19).

- **Agreeableness:** Feelers scored higher than Thinkers (mean difference = 0.24).

- **Extraversion:** Extraverts outscored Introverts (mean difference = 0.23).

These observed mean differences replicate the expected direction and relative size of trait contrasts across MBTI dichotomies, in line with classic findings. The exact values are reported in Table 2.

4 Discussion

Our analysis confirms that the TRPI reproduces hallmark Jung–Big Five linkages with precision matching or exceeding earlier MBTI-based studies. Cross-validated profile fit (grand-mean $r = 0.833$) far surpassed chance and was comparable to the meta-analytic reliability of full-length inventories. Type-level variation echoes theoretical emphasis on profile homogeneity versus heterogeneity across types.

The cluster extension advances typological research by exposing affective gradations overlooked by binary dichotomies. Higher neuroticism in ST/NF and TS/FN clusters suggests that pairing Intuition with Feeling may predispose to self-evaluative rumination.

5 Limitations

Generalisability is constrained by the online, English-literate sample and the brevity of the 26-item instrument. Self-report bias, cross-sectional design, and culturally specific prototypes may dilute or inflate observed effects. Replication in longitudinal, multilingual cohorts and benchmarking against behavioural aggregates remain priorities.

6 Conclusion

The TRPI affords a compact yet psychometrically robust bridge between Jungian typology and the Big Five. By validating classical dichotomy effects, demonstrating strong cross-validated type fit, and unveiling cluster-level trait stratification, the present work endorses TRPI as a freely available research tool and invites future investigations into dynamic personality architectures.

References

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Appendix A. Trait means by cluster

Cluster	O	C	E	A	N
SF/NTs	0.657	0.579	0.571	0.551	0.577
FS/TNs	0.604	0.603	0.543	0.487	0.439
ST/NFs	0.667	0.586	0.557	0.530	0.614
TS/FNs	0.570	0.609	0.606	0.523	0.556

Appendix B. Trait means by dichotomy

Table 2: Mean Big Five scores (0-1 scaled) by Briggs-Myers dichotomy.

Trait	E	I	S	N	T	F	J	P
Openness	0.669	0.580	0.503	0.746	0.619	0.630	0.602	0.646
Conscientiousness	0.633	0.556	0.589	0.600	0.631	0.557	0.700	0.489
Extraversion	0.683	0.456	0.546	0.592	0.615	0.523	0.564	0.575
Agreeableness	0.551	0.494	0.496	0.549	0.379	0.666	0.564	0.482
Neuroticism	0.483	0.610	0.569	0.525	0.427	0.667	0.495	0.598