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Unicorns, snarks, and personality types:

A review of the first 102 taxometric studies of personality

Nick Haslam

University of Melbourne

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Abstract

Objective: The default assumption among most psychologists is that personality varies along a set of underlying dimensions, but belief in the existence of discrete personality types persists in some quarters. Taxometric methods were developed to adjudicate between these alternative dimensional and typological models of the latent structure of individual differences. The aim of the present review was to assess the taxometric evidence for the existence of personality types. *Method:* A comprehensive review yielded 102 articles reporting 194 taxometric findings for a wide assortment of personality attributes. *Results:* Structural conclusions differed strikingly as a function of methodology. Primarily older studies that did not assess the fit of observed data to simulated dimensional and typological comparison data drew typological conclusions in 65.2% (60/92) of findings. Primarily newer studies employing simulated comparison data supported the typological model in only 3.9% (4/102) of findings, and these findings were largely in the domain of sexual orientation rather than personality in the traditional sense. *Conclusions:* In view of strong Monte Carlo evidence for the validity of the simulated comparison data method, it is highly likely that personality types are exceedingly scarce or non-existent, and that many early taxometric research findings claiming evidence for such types are spurious.

Keywords: categories, dimensions, personality, taxometrics, types, typology

Key points

What is already known about the topic

- Whether personality attributes are best understood as dimensions or categories (types) is the subject of some debate
- Taxometric research methods aim to test between dimensional and categorical models of individual differences
- Previous taxometric research has supported the existence of some personality types

What this topic adds

- This review of 102 taxometric studies of personality finds little replicated evidence for personality types
- Many early studies that supported the existence of types had a methodological bias toward that conclusion
- It is likely that personality types are very scarce or non-existent

Personality psychologists tend to assume by default that individual differences have a dimensional latent structure. People are understood to differ by degree along a set of continuous dimensions, and this understanding supports taken-for-granted practices such as quantitative personality assessment and the use of dimension-generating statistical procedures such as factor analysis. The idea that personality might be captured by a few personality types – discrete categories to which people belong in an either/or fashion – is commonly dismissed as a crude figment of popular psychology.

In an important theoretical paper, Paul Meehl (1992) demonstrated that our contemporary assumptions about the latent structure of personality were not uniformly shared by our forebears. The existence of personality types was proposed by Jung (1971) in his work on psychological type, by Sheldon (1942) in his work on somatotypes and their associated temperaments, in the psychoanalytic theory of character types, and in accounts of Type A personality. More recently, a typological view of abnormal personality has been implicit in the categorical diagnosis of personality disorders within the Diagnostic and Statistical Manual of Mental Disorders, a matter of ongoing dispute

(Trull & Durrett, 2005). Meehl argued that we should not dismiss the possibility that some personality types exist, and he articulated several causal mechanisms, including major gene effects and environmental moulding, through which they might arise (see also Asendorpf, 2002).

Meehl did not merely raise the existence of personality types as an abstract possibility. He also conjectured the existence of one type and developed a set of quantitative methods for detecting latent categories, which he dubbed “taxa” (singular “taxon”). In early work (Meehl, 1962), he proposed that schizotypal personality was typological or “taxonic”, characterising a small latent class of people who were at elevated risk of developing schizophrenia, and in later work (e.g., Meehl, 1995) he laid out a family of “taxometric” procedures to detect such taxa. These mathematically independent procedures, most of which produce graphical plots of patterns of covariation among indicators of the proposed latent variable, generate different patterns when the latent variable is taxonic or dimensional, and use consistency among multiple procedures rather than statistical significance testing to draw structural inferences (see Ruscio, Haslam, & Ruscio, 2006, for an overview).

The first taxometric study of personality was published by Golden and Meehl (1979), who supported the existence of Meehl’s conjectured “schizoid taxon”. Several influential taxometric studies followed, each finding evidence of another personality type. Gangestad and Snyder (1985) found evidence that self-monitoring was typological, as did Strube (1989) for Type A personality, Harris, Rice, and Quinsey (1994) for psychopathy, and Oakman and Woody (1996) for hypnotic susceptibility. During this early period of taxometric research, the taxonic status of schizotypy was also replicated by Erlenmeyer-Kimling, Golden, and Cornblatt (1989), Lenzenweger and Korfine (1992), and Tyrka et al. (1995). Of the first ten taxometric studies of personality, nine supported

the existence of a personality type, dramatically challenging the prior assumption that personality variation is invariably dimensional.

Taxometric methods have subsequently become widely used in personality and clinical psychology. A review of all studies published or “in press” in early 2011 (Haslam, Holland, & Kuppens, 2012) found 177 articles that reported a total of 311 distinct findings about specific variables which were distributed widely across the fields of psychopathology, personality, other individual differences, and several other domains. The review showed that a large minority (38.9%) of taxometric findings were reported as supporting a taxonic latent structure for the variable of interest. This finding, although aggregated across many dissimilar research fields, raises the plausibility of latent classes existing in the broad domain of individual differences, with the strongest evidence found in studies of schizotypy, autism, and substance use.

This conclusion about the high prevalence of taxonic findings was qualified by a very strong methodological effect, however. Earlier studies drew conclusions about latent structure primarily from visual inspection of the graphical plots generated by taxometric procedures. Many later studies added a methodological refinement developed by Ruscio and colleagues (Ruscio, Ruscio, & Meron, 2007), which compared the observed taxometric plots to parallel analyses of simulated comparison data sets that matched the parameters of the observed data (e.g., variability, skew, intercorrelations) but were either generated by a taxonic or a dimensional latent structure. This simulated comparison data procedure enabled a direct comparison of the fit of the analyses of the observed data to those of the respective simulations, captured by a Comparative Curve Fit Index (CCFI). A CCFI value of 0.50 represented equally good fit of the two latent structures, values $<.45$ favoured dimensional structure, values $>.55$ favoured taxonic structure, and values between 0.45 and 0.55 were ambiguous. Extensive Monte Carlo research (Ruscio & Kaczetow, 2009; Ruscio et al., 2007; Ruscio,

Walters, Marcus, & Kaczetow, 2010), examining more than 200,000 simulated data sets varying on parameters commonly encountered in psychological research settings, established that the simulated comparison data method was highly accurate in identifying dimensional versus taxonic data sets with no bias in favour of either alternative. The method was especially accurate when CCFI values were averaged across multiple taxometric procedures and when conclusions were not drawn if these values fell within the ambiguity band. For example, Ruscio et al. (2010) found that mean CCFI yielded unambiguous ($<.45$ or $>.55$) values in 94.8% of 100,000 data sets, half of which were dimensional and half taxonic, and it achieved 99.4% accuracy in distinguishing between dimensional and taxonic sets.

Haslam et al.'s (2012) review revealed that studies employing the simulated comparison data procedure and the CCFI produced a markedly lower rate of taxonic findings (16.2%) than studies that did not employ it (56.6%). In view of the Monte Carlo evidence that the simulation procedure is highly accurate in identifying latent structure, that studies which did not employ it tended to be methodologically weaker in other respects, and that visual inspection of taxometric plots may be vulnerable to biases that favour taxonic inferences, Haslam et al. (2012) speculated that the rate of taxonic findings had been over-estimated in previous taxometric research. In particular, they proposed that some taxonic findings obtained in influential early studies which did not employ simulated comparison data were likely to be spurious. If this were the case, early taxometric research may have mistakenly challenged the prior assumption that personality is latently dimensional and personality types are rare or non-existent.

The 2012 review provided a broad-brush overview of the state of taxometric research as it stood in 2011 but it has two significant limitations. First, its inclusiveness led it to incorporate studies of a very disparate collection of variables, making it difficult to extract meaningful conclusions about the distribution of dimensions and types in

specific domains. Second, it necessarily omitted the large quantity of research conducted since 2011, much of which has followed up some of the ambiguities identified by the original review. Consequently, the present study was intended to provide an updated review of taxometric research focused narrowly on the domain of personality. Our objectives were: 1) to survey all published taxometric research on personality characteristics, 2) to draw conclusions about the prevalence of typological variables in the personality domain, and 3) to identify regions of the personality domain that are most likely to contain types, if these exist.

Method

Study sample

A thorough literature search was conducted in three parts. First, all 177 taxometric articles identified in the previous review (Haslam et al., 2012), itself based on a comprehensive search using multiple databases for all peer-reviewed journal articles published or in press by April 2011 and on a prior review (Haslam, 2003), were retained. Second, searches with the same search terms (taxometric*, taxon*, MAXCOV, MAMBAC, MAXEIG) were conducted for the period 2011 to July 1, 2018, again using multiple databases (Google, Google Scholar, PsycInfo, Web of Science), yielding 87 new articles. Third, from the combined set of 264 taxometric articles we extracted those that conducted at least one taxometric analysis of a personality characteristic, defined in an inclusive manner. Articles were removed from the set if the only variable(s) they examined taxometrically: 1) were not primarily psychological (e.g., handedness, tardive dyskinesia), 2) did not have the individual person as the unit of analysis (e.g., relationship types, emotion episodes), 3) were mental disorders or symptoms of disorders *except* personality disorders (e.g., autism, cannabis dependence, mania), or 4) were specific behaviours or emotional responses rather than broader dispositions (e.g.,

fear of pain, internet gambling, dietary restraint, malingering). These exclusion criteria led to the retention of several studies of individual difference variables that are in the broad personality domain but are not prototypical traits, such as sexual orientation, alexithymia, attachment styles, questionnaire response biases such as impression management, and depression-proneness. After the application of the exclusion criteria, 102 articles remained, 74 of which had been included in Haslam et al. (2012).

Definition of taxometric findings

After defining the article sample, we extracted individual taxometric findings from them. As in Haslam et al. (2012), a finding was defined as a conclusion about the latent structure of a single construct (i.e., taxonic, dimensional, or ambiguous) based on at least one taxometric procedure in a single sample. An article could yield multiple findings if it examined the structure of one construct in two or more distinct samples, two or more distinct constructs in a single sample, or multiple constructs in multiple samples. To avoid redundancy or non-independence of findings within single articles, if taxometric analyses were reported both for a whole sample and for component subsamples, only the whole-sample analysis was recorded. Similarly, if analyses of a construct in one sample were run with one set of indicators of the construct and also with a subset of those indicators, only the analysis of the whole set of indicators was recorded. Following this definition, a total of 194 distinct findings were recorded from the 102 articles ($M = 1.90$).

Coding

All 102 articles were coded by the author, with original codes of the 74 articles included in the Haslam et al. (2012) review retained. The publication date for each article was recorded, and after individuating the findings in each study, the following

information was coded for each one: sample size, sample source, construct examined, taxometric procedures employed (coded as MAXCOV, MAMBAC, MAXEIG, L-Mode, MAXSLOPE and other), and use or non-use of simulated comparison data. For studies employing simulated comparison data, CCFI values were recorded for each finding. Findings themselves were recorded in two ways: for studies that did not yield CCFI values, the researchers' own conclusions (coded taxonic or nontaxonic) were recorded, and for studies that did yield them, the mean CCFI value across all taxometric procedures generating CCFI values was recorded.

Data analysis

The aim of the present study was primarily to describe the distribution of taxometric research findings in the personality domain rather than to conduct complex analyses of their determinants. Unlike a meta-analysis, for example, the outcome of interest is a binary decision (taxonic versus non-taxonic) rather than an effect size and the field of interest is broad and disparate (personality as a whole) rather than a specific effect. Consequently, data analysis is primarily descriptive. Findings are treated as the unit of analysis in most of the descriptive analyses.

Results

The mean publication year for the 102 articles was 2006.8 (range 1979 to 2018). For the 194 findings, the mean sample size was 3123.9. Samples were drawn from undergraduates (77; 39.7%), community members (73; 37.6%), and clinical or forensic settings (52; 26.8%) – percentages add to over 100 because some samples were composites – and 21 (10.8%) were composed of children or adolescents. The average finding was based on 2.36 distinct taxometric procedures, including MAMBAC (144;

74.2%), MAXCOV (122; 62.9%), L-Mode (97; 50.0%), MAXEIG (86; 44.3%), and MAXSLOPE (4; 2.1%). One hundred and two findings (52.6%) employed simulated comparison data and the CCFI, with a mean average CCFI value of 0.331.

Prior to examining the distribution of taxometric findings, the diverse assortment of constructs represented in the 194 findings was grouped into 12 sets. This grouping was done in a way that combined studies of similar constructs, represented major foci of existing taxometric research, and was relatively economical (i.e., only sets with four or more findings were assigned a grouping). Table 1 presents a summary of the composition of these sets in descending order of number of findings included. Studies of antisocial and psychopathic tendencies on the one hand, and varieties of schizotypal personality on the other, have been the focus of a substantial proportion of taxometric research on personality. Other forms of abnormal personality (“other PDs”) and vulnerability factors for mental health problems (e.g., “anxiety sensitivity”) have received some attention, and a few sets – Big Five traits, Jungian types – include relatively numerous findings from relatively few articles. The “miscellaneous” set contains many findings from a diverse collection of dispositions. In total, taxometric research has examined the latent structure of a very extensive sampling of personality characteristics, enabling a wide-angle scan for the existence of personality types.

Table 2 summarises the distribution of structural findings across the 12 sets of personality characteristics. Overall, 60 of the 92 findings (65.2%) that did not employ simulated comparison data and the CCFI were judged taxonic by the researchers who generated them, whereas only 4 of the 102 findings (3.9%) that employed this method yielded unambiguously taxonic conclusions (i.e., mean CCFI > .55). This difference is striking, $\chi(1) = 82.21$, $p < .001$, but it must be noted that use of simulated comparison data is not evenly distributed across the 12 sets of findings, $\chi(11) = 79.65$, $p < .001$. It is relatively rare in analyses of schizotypy and relatively common in analyses of

antisociality and Big Five traits. The huge discrepancy in rates of taxonic findings between studies employing and not employing simulated comparison data might therefore partly reflect differences in the constructs being examined in the respective studies. Nevertheless, the discrepancy remains substantial even within specific sets of latent variables. Table 1 shows that schizotypy (29 of 33), anxiety sensitivity (11 of 11), and antisociality (4 of 4) yield disproportionately taxonic conclusions in non-simulation studies, but much lower rates of taxonic conclusions in studies employing the CCFI: schizotypy (1 of 9; $\chi(1) = 20.42, p < .001$), anxiety sensitivity (0 of 9; $\chi(1) = 20.00, p < .001$), and antisociality (1 of 24; $\chi(1) = 21.47, p < .001$).

Figures 1 and 2 display the rarity of taxonic conclusions among the 102 findings of analyses that used the simulated comparison data method. (Figure 2 omits the hypnotic susceptibility, Jungian types, and response biases construct sets because none of their findings were based on this method.) Figure 1 shows that only four findings have mean CCFI values that are unambiguously taxonic, and even among the nine findings in the ambiguity band (0.45-0.55), eight fall on the nontaxonic side ($< .50$) and are probably best seen as belonging to the right tail of the distribution of nontaxonic findings. Figure 2 shows that for almost every set of constructs, the majority of mean CCFI values favour dimensional conclusions. The one exception is the sexuality set, in which two findings are nontaxonic, one is ambiguous (mean CCFI = .507), and two are taxonic. These two taxonic findings, both reported in Norris et al. (2015), relate to male and female homosexuality. Sexual orientation is rarely conceptualised as a personality variable, and in the absence of these findings, only two other findings from the remaining 100 findings based on simulated comparison data – on antisocial personality disorder (Kerridge et al., 2014) and schizotypy (Everett et al., 2015) – favour the existence of a personality type. These two findings deviate from and are outweighed by other studies

of the same characteristics: 22 antisociality findings and 7 schizotypy findings yield CCFI values in the nontaxonic range ($<.45$).

Figure 3 provides an overview of the evolving conclusions of taxometric research on personality over the 40 years since Golden and Meehl's (1979) first study. It demonstrates that the cumulative proportion of research findings identified as taxonic has steadily declined from a large majority in the 1980s to a modest minority (33.3%) in 2018. The cumulative proportion of studies employing simulated comparison data and the CCFI shows the opposite pattern, rising steeply in the past decade so that it has now been used in the majority of published findings. The figure identifies 2007 as a pivotal year in taxometric personality research. Up to and including that year, 55.9% of taxometric research findings were taxonic and 9.7% of findings had employed simulated comparison data. After that year, 11.7% of findings were taxonic and 92.1% employed such data. The increased use of this almost universally adopted methodological advance has coincided with findings supportive of personality types becoming extremely scarce.

Discussion

The present review of taxometric research on personality is broadly consistent with the earlier review of taxometric research, which included studies of mental disorders and other variables outside the personality domain (Haslam et al., 2012). Both reviews indicated that taxometric research has historically supported the existence of taxa in a relatively high proportion of studies. However, both reviews also established that this proportion has dropped precipitously in recent years, identifying the use of simulated comparison data as the main cause of this decline. Both reviews conclude that taxonic latent variables are likely to be substantially rarer than early taxometric research suggested. If anything, the present review's conclusions are starker than those

of Haslam et al. (2012). The earlier review found that studies employing and not employing simulated comparison data supported the taxonic model in 56.6% and 14.0% of findings, respectively, whereas the present review yields figures of 65.2% and 3.9%. Even recognising that the two subsets of studies in the present review did not examine an identical mix of personality attributes, it is remarkable that one subset finds evidence of types at more than 16 times the rate of the other, which approximates zero.

Confronted with this evidence that the findings of taxometric studies are crucially dependent on whether a specific methodological practice is employed, three conclusions are logically possible. We could conclude that the simulated comparison data method is reliable, infer that studies which do not employ it are biased towards taxonic findings, and discount those findings as a result. Alternatively, we could conclude that the simulated comparison data method is unreliable, infer that studies employing it are biased against taxonic findings, and discount these findings. Finally, we could conclude that both methods may be unreliable, perhaps suffering from biases that operate in different directions. At the present time, the first of these possible conclusions is significantly more plausible than the others.

For a start, substantial Monte Carlo research (Ruscio & Kaczetow, 2009; Ruscio et al., 2007, 2010) has demonstrated that the simulated comparison data method has no systematic bias for or against taxonic conclusions under an assortment of realistic data conditions. Second, and relatedly, it has been shown that latently dimensional data can generate taxometric plots that look taxonic in the presence of indicator skew (Haslam & Cleland, 1996). Third, the exclusive reliance of taxometric research on visual inspection of graphical plots prior to the adoption of the CCFI leaves this research vulnerable to subjectivity, bias, and researcher degrees of freedom where plotting and interpretation decisions are concerned. For these reasons, it is far more probable that studies which did not employ simulated comparison data have over-estimated the prevalence of

personality types than that studies that did employ them have under-estimated it. The true prevalence of typological findings in the personality domain is therefore likely to be much closer to 3.9% than to 65.2%.

This striking aggregate difference in support for the existence of personality types from studies employing different quantitative methodologies is reflected in the steep decline in cumulative support for personality types since the early days of taxometric research. It is also reflected in miniature for almost every personality attribute that was claimed to be typological at that time. Gangestad and Snyder's (1985) taxonic finding for self-monitoring was overturned by Wilmot's (2015) stronger studies using simulated comparison data. Strube's (1989) study of Type A personality has recently met the same fate (Wilmot, Haslam, Tian, & Ones, in press). Harris et al.'s (1994) taxonic finding for psychopathy has been followed by 24 findings using simulated comparison data, 23 of which fit a dimensional model better than a taxonic alternative. Numerous early studies indicating that anxiety sensitivity was typological (e.g., Bernstein, Zvolensky, Weems, Stickle, & Leen-Feldner, 2005) were called into serious question by an uninterrupted run of 11 dimensional findings from simulation-based studies.

Schizotypy is the one exception to this pattern of early typological findings that have since been rebutted. After 40 years of taxometric research that was inaugurated by Golden and Meehl (1979), and 42 distinct findings from 22 articles, schizotypy's latent structure remains stubbornly unresolved. Although 71.4% (30/42) of findings support the existence of a taxon, all but one of these findings (i.e., 29/33) derive from studies that did not employ parallel analyses of simulated comparison data. Findings from studies that did employ this method were unambiguously supportive of a taxon in only one of nine findings, with one finding ambiguous but more consistent with dimensionality (mean CCFI < .5). The respective rates of taxonic findings from the two

sets of studies are therefore 87.9% and 11.1% (mean = 49.5%). In sum, the aggregated evidence from taxometric research appears to favour a taxonic conclusion for schizotypy largely because most researchers who have examined it did not adopt a methodological tool that challenges that conclusion, either because it had yet to be widely used (25/33 of the findings in question precede 2008) or because they were sceptical of it.

A diplomatic reading of the accumulated taxometric evidence on the status of schizotypy might conclude that its latent structure remains moot because neither taxonic nor dimensional structures have been consistently supported. However, a less equivocal reading may be justified for several reasons. First, Monte Carlo studies strongly support the accuracy and lack of bias of taxometric inferences when simulated comparison data are employed. The much higher rate of taxonic findings obtained for schizotypy when this method is not employed must therefore reflect methodological bias. Second, the findings of the present review indicate that the base rate of taxonic findings in the personality domain is very low (3.9% of findings using simulated comparison data across a wide assortment of variables, or 2.0% if findings for male and female sexual orientation [Norris et al., 2015] are excluded as falling outside the personality domain as normally understood). From a Bayesian standpoint, if personality types are as rare as this base-rate suggests, then schizotypy would have to be a very surprising exception, and unusually persuasive evidence would be needed to override the high prior probability of it being dimensional. Third, the idea that personality is overwhelmingly dimensional is consistent with the growing evidence that traits reflect the summation of a very large number of influences of small effect (e.g., Terracciano et al., 2010).

These three reasons to question research claiming that schizotypy is taxonic represent generic critiques but concerns that are specific to schizotypy research can also be raised. One rarely noted concern is that the specification of the supposed taxon

varies widely across studies. In some cases, in accordance with Meehl's (1962) original theoretical claim, a singular taxon is sought and found. In others, schizotypy is fractionated into several components (e.g., perceptual aberration, magical ideation, social anhedonia and physical anhedonia; or positive and negative schizotypy) and each is found to have its own taxon. The fact that studies which do not employ simulated comparison data consistently obtain taxonic findings across these diverse ways of defining and assessing schizotypy calls into question what the taxon or taxa might be, and whether these studies might be drawing taxonic conclusions too liberally. A recent case in point is Morton et al. (2017), which found evidence of three partially overlapping "disorganised", "interpersonal" and "cognitive-perceptual" schizotypal taxa in the same sample, such that some individuals belonged to one, two or all three taxa. Another concern is the wide discrepancy across studies in the supposed prevalence of schizotypal taxa in normal samples, which Meehl predicted to be about 10%. Estimates have ranged from less than 5% to more than 30% (e.g., 32% of Morton et al.'s university student participants belonged to at least one schizotypal taxon). The failure of such prevalence estimates to converge on a plausible value is compatible with the alternative view that no latent category exists.

In conclusion, the present review suggests that typological variables are extremely scarce in the personality domain, and possibly non-existent. A substantial body of taxometric research has surveyed a large and diverse sample of personality characteristics but has not identified a single characteristic that generates replicable typological findings when a validated quantitative methodology is employed. This research methodology, which has demonstrated great accuracy in differentiating typological and dimensional data, has not only failed to locate personality types – a negative result – but has also consistently obtained positive support for dimensional models. By implication, the default assumption among psychologists that personality is

latently dimensional may be correct, and the challenge to that assumption made by early taxometric researchers may have been instructive but ultimately misplaced.

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Construct set	Findings	Articles	Specific constructs	Number
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Table 1.

Classification of sets of findings based on similarity of constructs

Schizotypy	42	22	Schizotypy (general)	11
			Social anhedonia	5
			Pre-schizophrenic personality	5
			Magical ideation	4
			Perceptual aberration	4
			Schizotypal PD	3
			Negative schizotypy	2
			Physical anhedonia	2
			Positive schizotypy	2
			Cognitive-perceptual schizotypy	1
			Disorganised schizotypy	1
			Interpersonal schizotypy	1
			Schizoidia	1
Antisociality	28	25	Psychopathy	16
			Antisocial PD	6
			Antisocial behaviour	4
			Callous-unemotional traits	1
			Criminal thinking style	1
Anxiety sensitivity	20	11	Anxiety sensitivity	18
			Distress intolerance	2
Big Five	16	2	Extraversion	4
			Agreeableness	3
			Conscientiousness	3
			Neuroticism	3
			Openness	3
Other PDs	15	10	Borderline PD	4
			Paranoid PD	4
			Narcissism	2
			Narcissistic PD	1
			Avoidant PD	1
			Dependent PD	1
			Obsessive-compulsive PD	1
			Schizoid PD	1
Jungian types	11	1	Extraversion	1
			Feeling	1
			Introversion	1
			Intuition	1
			Judging	1

			Judging/perceiving	1
			Sensing	1
			Sensing/intuition	1
			Perceiving	1
			Thinking	1
			Thinking/feeling	1
Response styles	9	4	Impression management	3
			Self-deceptive positivity	3
			Symptom over-reporting	2
			Infrequency responding	1
Attachment styles	8	3	Attachment anxiety	2
			Attachment avoidance	2
			Preoccupied attachment	2
			Dismissing attachment	2
Sexuality	7	5	Sexual orientation	4
			Sociosexuality	2
			Transsexuality type	1
Alexithymia	4	2	Alexithymia	4
Hypnotic susceptibility	4	1	Hypnotic susceptibility	4
Miscellaneous	30	20	Machiavellianism	3
			Self-monitoring	3
			Type A personality	3
			Hypomanic temperament	2
			Perfectionism	2
			Depression proneness	2
			Disgust sensitivity	2
			Depressive personality	1
			Difficult temperament	1
			Fearful temperament	1
			Femininity	1
			Happy temperament	1
			Impulsivity	1
			Infant reactivity	1
			Intolerance of uncertainty	1
			Optimism	1
			Reward sensitivity	1

		Sadism	1
		Separation anxiety	1
		Type D personality	1
TOTAL	194		194

Table 2.

Distribution of taxometric findings across construct sets as a function of use or non-use of data simulations

Construct set	Findings	No simulations		Simulations			Mean CCFI
		Taxonic	Nontaxonic	Taxonic	Nontaxonic	Ambiguous	
Schizotypy	42	29	4	1	7	1	.401
Antisociality	28	4	0	1	22	1	.304
Anxiety sensitivity	20	11	0	0	9	0	.330
Big Five	16	0	0	0	13	3	.317
Other PDs	15	1	3	0	11	0	.281
Jungian types	11	0	11	0	0	0	-
Response styles	9	6	3	0	0	0	-
Attachment styles	8	0	2	0	5	1	.342

Sexuality	7	1	1	2	2	1	.501
Alexithymia	4	0	0	0	4	0	.325
Hypnotic susceptibility	4	4	0	0	0	0	-
Miscellaneous	30	4	8	0	16	2	.323
TOTAL	194	60	32	4	89	9	.331

Figure Captions

Figure 1. Distribution of mean CCFI values for the 102 findings employing simulated comparison data (shading represents consistent with a latent dimension [white], ambiguous [grey], or consistent with a latent taxon [black]).

Figure 2. Distribution of mean CCFI values for the 102 findings employing simulated comparison data as a function of construct set (shading represents ambiguous values).

Figure 3. Cumulative proportion of taxonic findings (solid line) and findings based on simulated comparison data (dashed line) in taxometric studies of personality as a function of year.

Unicorns and snarks paper - figure 1.jpg

Unicorns and snarks paper - figure 3.jpg

Running head: PERSONALITY TYPES

Unicorns, snarks, and personality types:

A review of the first 102 taxometric studies of personality

Nick Haslam

University of Melbourne

8247 words

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