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Furnham, A., & Robinson, C. (2022). Myths and misconceptions about personality traits and tests. *Personality and Individual Differences*, 186, 111

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Running head: PSYCHOLOGICAL MYTHS

Myths and misconceptions about personality traits and tests.

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Data Availability: This is obtainable from the first author upon request

Registration: This paper was not pre-registered with the journal

Ethics: This was sought and obtained (CEHP/514/2017)

Informed Consent: Participants gave consent for their anonymised data to be analysed and published

There is no conflict of interest.

Author Contribution

A.Furnham: Visualisation, Writing -review & editing

C. Robinson: Data analysis, Proofing

Abstract

This study examined the prevalence of myths about personality traits as set out in a book (Donnellan & Lucas, 2012) and beliefs in the predictive validity of personality tests. In all, 616 participants completed a questionnaire in which they rated the extent to which they thought statements/facts about personality traits were true or false, and whether personality test scores could predict behaviours like health, wealth and marital satisfaction. In total, 12 of these myths were rated as true (definitely or partly) by the majority of the participants. particularly those that implied personality change and instability over time. Only six were rated as probably false, two as definitely false, and five as “Don’t Know” by the majority of respondents. Overall, participants thought tests predicted longevity and alcohol consumption least well, and leadership and depression best. There were a number of systematic individual correlates of these beliefs which indicated that participants’ religious and political beliefs were related to these myths and misconceptions. Limitations of this, and similar studies, are noted. and implications are discussed.

Key Words: Misconceptions; Myths; Personality; Tests.

Introduction

There has been an interest in myths and misconceptions about psychological phenomena and findings for nearly a hundred years (Basterfield et al., 2020; Brand et al., 2016; Furnham & Horne 2021; Hughes, Lyddy & Lambe, 2013; Lamal, 1979; Nixon, 1925; Sibicky, et al., 2020).

Many researchers in this area have been more interested in educating the general public and dispelling myths. At the forefront of this effort has been the work of Lilienfeld and colleagues (Bensley, & Lilienfeld, 2015; Bensley et al., 2014; Lilienfeld et al., 2010ab; Rosen et al., 2019). Lilienfeld (2010b), a decade ago published *50 Great Myths of Popular Psychology*

and numerous studies have used the 50 myths and 250 “mythlets” to test various hypotheses in this area (Furnham & Hughes, 2014; Furnham, 2018a).

Lilienfeld et al.’s (2010) classic text, has received over 400 citations is divided into various sections some about personality with 10 questions including “Open-ended interview are the best way of assessing personality”. However, many of these questions would not be recognized by personality psychologists as part of their endeavour such as “Obese people are more cheerful than non-obese people”. In their analysis of these “mythlets” Furnham and Hughes (2014) examined the extent to which people accepted these myths and found evidence that for instance over 50% of their respondents thought people’s drawings could tell a lot about their personality.

The Lilienfeld et al., (2010) book also inspired various other more specialised books with a very similar title and format (Hupp & Jewell, 2015; Jarrett, 2014; Johnson, 2016). Indeed, there is now a series of books by the same publisher all called *Great Myths of....*, and covers topics such as *Old Age* (Erber & Szuchman, 2015) and *Personality* (Donnellan, & Lucas, 2021) which was the book that inspired this study. There are, surprisingly, very few studies on this topic (Bergner, 2020).

Those who teach others about personality assessment and theory, as well as consultants are often surprised by the strength of their convictions about many issues at odds with the academic literature (Furnham, 2018b). These include the fact that personality is difficult/impossible to assess accurately; personality is shaped primarily by external factors; it changes a great deal over time; though they tend to reject the idea that there are systematic group differences (sex, age, ethnicity) in personality traits. It is not always clear where these myths come from though some would most likely be supported by academic psychologists from different traditions like social psychologist who have always been hostile to personality

theory triggering the great person x situation debate which had a major effect on differential psychology (Hogan, 2005).

There are however three important issues in all studies of psychological myths which concerns agreement, evidence and wording. First, it is clear that not all “experts” agree that the myths are indeed myths (Furnham & Horne, 2021) as there is considerable disagreement between them. Second, there are disputes about the nature of the evidence that is used to support the idea that certain statements are myths. Third, there is always a concern about the exact wording of the myth statements which may be too simplistic or lacking in nuance given what is known about particular issues.

This study is also concerned with beliefs about personality testing. There is a great deal of debate in various areas like business and education where personality tests are extensively used in selection (Furnham, 2008; 2018; Furnham & Jackson, 2012). There are many popular articles and blogs that damn all tests as being essentially invalid, but others that defend testing attempting to point out the available evidence of validity (Hogan, 2005; Hogan et al, 2007). There are however few, if any studies, which have looked at the general public’s belief about the validity of tests. In this study we chose 10 outcomes including health, wealth and relationships to examine beliefs about tests.

The aim of the study is two-fold: first to simply establish the beliefs of the general public about personality traits and tests; second to look at various correlates of these beliefs, such as demography (sex, age, education) but more particularly ideology as assessed by religious and political beliefs. Thus, we examined demographic differences (sex, age, education), ideology (religious and political beliefs), intelligence, and self-evaluation correlates of these beliefs. Previous work in the area has demonstrated that these four sets of factors are related to the belief in myths, particularly ideology and intelligence (Furnham & Horne, 2021). Thus, more politically conservative and religious people tend to be essentialists

and reject the nature of change. Similarly, more intelligence and educated people tend less to accept and endorse myths so easily.

This was an exploratory study and no specific hypotheses were formulated

Method

Participants

A total of 616 participants completed the questionnaire: 307 were men and 309 were women. They ranged in age from 18 to 70yrs with the mean age was 35.12 years ($SD = 9.54$ years). All had secondary school education and were graduates. In total 46.2% were single and 26.8% married, and 69% had no children. They are rated themselves on three scales: “How religious are you?” (Not at all at 1 to Very 8) and they scored 2.97 ($SD=2.42$); and “How would you describe your political beliefs?” (Very Left Wing 1 to Very Right Wing 8); they scored 6.07 ($SD=1.63$). All were Europeans and the vast majority were British.

Measures

1. *Myths*: The myths and misconceptions were derived from a book by Donnellan and Lucas (2021) where they described 28 myths. They are shown in table 1. We used similar instructions to those used in similar studies (Furnham & Grover 2019; Furnham & Horne, 2021; Furnham & Hughes, 2014); “*Below are a number of statements about intelligence and IQ testing. Please read each and indicate the extent to which you believe it is true or false*”. Response options were broken down into “*probably*” and “*definitely*” true or false allowing for greater information to be gleaned regarding the kinds of true and false responses. In addition, the “*don't know*” option improves upon some previous tests as participants could indicate a lack of knowledge, rather than guessing or leaving items unanswered (Arntzen et al., 2010).

2. *Power of Personality Tests*: Based on the work of a number of academics a 10 item test was constructed concerning the predict validity of personality tests. The wording was “Personality traits, as assessed by appropriate tests can predict very well a persons’.....They were asked to respond on an eight-point scale. Agree 1 2 3 4 5 6 7 8 Disagree. This was based on the presentations of experts in the area (Robert Hogan and Lewis Goldberg: personal communication) and the “test” has not been used before.
3. *The Wonderlic Personnel Test* (Wonderlic, 1990). This 50-item test can be administered in 12 minutes and measures general intelligence. Items include word and number comparisons, disarranged sentences, story problems that require mathematical and logical solutions. The test has impressive norms and correlates very highly ($r = .92$) with the WAIS-R. In this study we used 16 items from Form A (14,15,18,21,24,27,28,29,30, 32,33,34,36,37, 43, 46). This was not a timed test. Their mean score was 10.78 (SD=2.95) and scores were normally distributed.

Procedure

Departmental ethical approval was gained prior to data collection (CEHP/514/2017) Data was collected on-line through *Prolific*, a platform like the better-known Amazon-Turk, Participants were compensated for their time (receiving £1.75). Usual data cleansing and checking led to around 2% of the 630 recruited being rejected before further analysis. The study was run in March 2021.

Results

We began by simply inspecting the raw scores for the first part and the means and standard deviations for the second. We then looked at the individual difference correlates followed by regressions to determine which differences were most clearly related to the beliefs and myths.

1. Prevalence of Misconceptions

All of the items presented were myths, thus for all items, the “correct” answer was false (probably or definitely).

Insert Table 1

Table 1 shows that overall participants believed the majority of people believed 11 the myths to be “definitely or probably true” and around the same number of be definitely or probably false”. Greatest agreement was with item 14 which suggested that trauma greatly shapes personality; followed by item 6 which suggested it was difficult, if not impossible to measure. The two items (13,19) that were endorsed by most people as false related to the same issue namely the instability of personality. Overall, five items attracted a majority “did not know”, possibly because they required some technical knowledge to understand them. Given the nature of the data there were no obvious ways (like factor analysis) to categorise the statements empirically.

Two scores were then computed for each individual: total of definitely false (Mean=12.57, SD=4.69) and total of definitely true (Mean=10.40, SD=4,69) which were correlated $r = -.47$.

Insert Table 2 here

Table 2 shows the findings concerning the perceived predictive validity of personality tests. There was a reasonable distribution of scores per item with people believing that tests predicted leadership and depression most and longevity least. A total score was computed (Mean=40.19, SD=9.57) which correlated $r = -.19$ ($p < .01$) with total True score, and $r = .07$ with the total False score above.

Insert Table 3 and 4

Further analysis explored demographic correlates of these scores. Table 3 showed more religious, politically conservative, females with lower IQs had higher (incorrect) True scores, while those with a degrees, who were less religious and more intelligent higher False scores.

Insert Table 5 and 6

We repeated the analysis for the total score which reflects a general belief in the predictive validity of tests, where high scores indicate skepticism. The correlations indicated that males who were less religious but more politically conservative were more likely to be “test skeptics”. The regression confirmed this: more intelligent, less religious and more politically conservative respondents were more positive towards tests having predictive validity.

Discussion

Over the past fifty years there has been a significant growth in the use of personality tests in work settings, so much so that many working adults have had experience of test taking and often got extensive feedback on their results (Furnham, 2018). A surprising number of professionals have been exposed to the same test more than once and have clear views on their reliability and validity (Moyle & Hackston, 2018). Moreover, tests have been contested in court settings (Neal et al., 2019) and there are frequent print (newspaper and magazine) articles, as well as blogs, both advocating and lambasting tests and the test industry (Furnham, 2018). It is, therefore, of interest to know what people think about personality theories and testing. However, it should be acknowledged that there yet remains many contentious issues among personality psychologists themselves concerning such issues as the stability of personality over time (Bleidorn et al., 2021).

Given that there would be general, but certainly not unanimous, academic agreement with Donnellan and Lucas’ (2021) list and phrasing of myths, the results suggest that people are more likely to accept various personality myths as true, particularly those associated with development (14, 17) and consistency. They are also skeptical about test validity (2, 6, 7) while they endorse old ideas like birth order influencing personality and trait similarity/complementarity effecting relationships. It was however noticeable that the

majority were skeptical of the validity of “popular quizzes” (11), and sex differences (27). Given the number of Don’t Knows it may have been better to follow the practice of Furnham and Horne (2021) in initially changing the myth/statements to make them more interpretable to the lay public.

With regard to test predictive validity people appeared to believe overall that tests were best able to predict leadership, depression and leadership, while less able to predict longevity and alcohol consumption. It would be most interesting to contrast these ideas with those of experienced academicians.

The analysis of individual correlates of these beliefs suggested that ideology (religious and political beliefs) were consistent correlates of attitudes to and beliefs about personality and testing. Other studies have also shown that these simple questions are markers of a range of beliefs particularly a general scepticism and cynicism about governments and corporations as well as endorsing conspiracy theories (Furnham, 2021b). Thus, less religious and more politically liberal people tend to be less suspicious and susceptible to believing in myths. What was particularly interesting in this study was the role of intelligence, albeit that the way we measured intelligence (a short untimed test) had limitations. Results indicated that more intelligence people were less prone to believing myths about personality and more accepting of the predictive validity of intelligence tests. This confirms many of the earlier studies, and indeed common sense, that intelligence is related to quality of education and wider reading which would provide more accurate information on issues, and thence the rejection of myths. This relationship merits further investigation with more robust tests of intelligence than used in this study.

One important issue concerned with myths is to what extent, as they are phrased, are indeed myths: that is, is there academic agreement and data to support them, and are they expressed sufficiently clearly to be unambiguous. This is particularly true of the predictive

validity of personality tests (Wessels et al., 2016), as well as change over time (Bleidorn et al., 2021). As Furnham and Cheng (2019) noted the debate about continuity vs. change concerns issues, such as the reliability and validity of personality tests used (to account in part for measurement error); the moderator variables considered (social class, sex, education and ethnicity); the age at which people are measured (i.e. adolescents, adults, old age); the time span that shows most change and stability; how change is measured (such as mean level change, rank order, ipsative change); and the stability of the environments of people and what, if anything, leads to change. Thus, some academic experts agree with the little change (plaster) argument while some strongly favour the greater change (plastic) argument. To this extent all psychological myths studies are open to the criticism that the myths are not sufficiently nuanced to reveal the actual state-of-the-art in complex areas.

There were limitations to this modest study: it would have been better to have a much bigger representative population and to have more details on each of them, particularly details of their education, specialisation, profession and experience of personality tests. The latter may be poignant as Furnham (2001) found that experience of intelligence testing was clearly correlated with beliefs about tests and personal self -estimated intelligence. Further we had only single item measures of political and religious beliefs, which though adequate in terms of distribution would always be better supplemented by more questions about ideological beliefs and behaviours.

It may have been better to have a mix of truthful as well as false statements about personality though other studies in this area have tended only to present myths. Further, it is possible to argue that there is insufficient data to label each statement and clearly (or even probably) an untrue myth. This issue for personality researchers is how to improve popular awareness and knowledge of the topic. It is also important to consider how the particular

phrasing of the myth statements could have a great impact on the responses, These and related issues are discussed in detail in Furnham and Horne (2021).

What would be particularly interesting would be to ask experts (academics, test constructors) to complete the questionnaires and to contrast their responses to the non-experts. Equally it would be interesting to identify the most true and most false of the various statements. It is however very problematic getting these sorts of experts to comply with these requests.

Hopefully this study encourages others interested in the public understanding of psychology to do some more work on myths about personality tests and theories. Clearly public beliefs are related to how they react to tests they encounter in educational, medical and occupational settings, and their acceptance of feedback. This study would suggest that people are sceptical, rather than cynical about tests, but more research needs to be done to understand how and why they accept and reject particular myths.

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Table 1. Results for the 28 myths

	Statement	DT	PT	PF	DF	DK
1	Situational factors overwhelm personality when predicting behaviour	29	313	144	25	103
2	Personality measures do not predict consequential outcomes (like health, wealth and divorce) well enough to be useful	60	240	204	57	55
3	There is a single gene for a single personality trait	11	67	167	224	147
4	Evolutionary perspectives are not relevant for personality	11	116	270	133	84
5	People come in discrete personality types	51	222	158	98	87
6	Personality is too complicated to be measured	123	254	159	48	31
7	Personality measures can be faked so they are not valid	56	257	177	47	78
8	The Myers-Briggs Type Indicator is the best approach for assessing personality	12	75	104	52	373
9	Projective tests are the best approach for measuring personality	9	132	116	37	322
10	Unstructured interviews are the best approach for measuring personality	15	183	155	50	213
11	Most personality quizzes in magazines and on websites provide accurate information about your personality	9	51	158	372	27
12	Personality traits do not have much consistency across the lifespan	15	170	277	74	79
13	Personality is completely stable (or set like plaster) after age 30	13	87	259	210	47
14	Traumatic life events dramatically reshape personality	244	296	55	9	11
15	Adolescence is the most significant period of personality development	107	309	114	35	51
16	Birth order is an important influence on personality	27	230	175	87	97
17	Parenting practices are a major source of personality differences	114	327	95	33	46
18	Happiness is completely determined by situational factors	44	184	231	116	40
19	Happiness is unrelated to major life events	13	94	266	211	32
20	Happiness results primarily from person-environment fit	41	301	149	41	83
21	There is a 3-to-1 positivity-to-negativity ratio for flourishing	7	77	125	27	380
22	Personality trait similarity matters for romantic relationships	60	309	145	40	62
23	Spouses are especially similar in terms of personality traits or spouses have complementary personality traits	22	277	165	56	96
24	High self-esteem and Narcissism are the same attribute	10	65	11	343	38
25	Perceptions of national character reflect 'real' group differences	8	148	165	82	212
26	Personality is radically different from culture to culture	50	214	215	87	48
27	Men are from Mars, women are from Venus (men and women have dramatically different personalities)	43	152	172	211	38
28	Clinicians can't treat personality disorders	17	71	211	189	128

Items in **Bold** indicate the score favoured by the majority of the participants

Table 2. Beliefs about Predictive validity (1=Agree to 8 Disagree)

Personality tests can predict very well a person's		Mean	SD
1	General physical health	4.22	1.80
2	How long they will live	4.88	1.73
3	Whether they will make a good leader	3.13	1.62
4	How much money they will make	4.37	1.52
5	How happy their marriage will be	4.27	1.61
6	How many friends they have	3.86	1.60
7	How well they do at school/university	3.88	1.46
8	How quick they learn	3.61	1.60
9	Their consumption of alcohol	4.36	1.65
10	Whether they are likely to suffer from depression	3.45	1.64

Table 3. Correlations for True/False/DK responses

	Mean	SD	True	False	DK
Sex	1.50	.50	-.11**	.04	.07
BirthYear	1986.31	9.54	-.03	-.03	.04
Schooling	15.50	3.72	-.02	.02	-.01
Degree	1.37	.48	.05	-.13**	.09*
Religious	2.97	2.42	.18***	-.09*	-.07
Politics	6.06	1.70	-.14**	.05	.08
IQTotal	10.78	2.96	-.11**	.11**	.02

***p<.001 **p<.01 *p<.05

Table 4. Regressions for the True/False totalled score

	True				False			
	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>
Sex	-.85	.37	-.10	-2.31*	-.01	.42	-.00	-0.02
Birth Year	-.01	.02	-.03	-0.72	-.02	.02	-.03	-0.76
Schooling	.06	.05	.05	1.09	-.08	.06	-.07	-1.43
Degree	.22	.39	.03	0.57	-1.20	.44	-.12	-2.71**
Religious	.22	.08	.13	2.82**	-.12	.09	-.06	-1.40
Politics	-.17	.11	-.07	-1.51	.04	.13	.01	0.29
IQ Total	-.12	.06	-.08	-1.86	.15	.07	.10	2.11*
Adjusted <i>R</i> ²		.04				.02		
<i>F</i>		4.57				2.61		
<i>p</i>		.000				.012		

**p<.01 *p<.05

Table 5. Correlations between demographics and total beliefs in tests score

	1	2	3	4	5	6
(1) TotalPersTest						
(2) Sex	.08*					
(3) BirthYear	-.01	-.15***				
(4) Schooling	-.02	.06	.07			
(5) Religious	-.11**	-.04	-.09*	-.03		
(6) Politics	.15***	.21***	.08	.17***	-.30***	
(7) IQ Total	-.05	-.06	-.00	.16***	-.27***	.21***

***p<.001 **p<.01 *p<.05

Table 6. Regression onto Total BIT Score

	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>
Sex	1.32	.87	.07	1.52
Birth Year	-.04	.04	-.04	-0.91
Schooling	-.08	.12	-.03	-0.69
Religious	-.39	.19	-.09	-2.06*
Politics	.89	.27	.15	3.30**
IQ Total	-.31	.15	-.09	-2.08*
Adjusted R^2		.04		
<i>F</i>		4.56		
<i>p</i>		.000		