

Psychopathy by U.S. State

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ABSTRACT: Rentfrow et al. (2013) constructs a cross-section of the “Big Five” personality traits and demonstrates their relationship with outcomes variables for the continental United States and the District of Columbia. Hyatt et al. (Forthcoming) creates a means of describing psychopathy in terms of the Big Five personality traits. When these two findings are combined, a state-level estimate of psychopathy is produced. Among the typical predictions made regarding psychopathy, the variable with the closest univariate relationship with this new statistical aggregate is the percentage of the population in the state living in an urban area. There is not a clear univariate relationship with homicide rates.

Keywords: Psychopathy; Personality Psychology; Geographical Psychology; Big Five Personality Traits

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I. INTRODUCTION

Rentfrow and Jokela (2012) review the growing literature examining regional differences in psychology, and their importance for social outcomes. This paper makes a small contribution to geographical psychology by developing estimates of the level of psychopathy for each of the contiguous 48 U.S. states and the District of Columbia. Psychopathy, one of the “dark triad” of personality characteristics predicting antisocial behavior (Paulhus and Williams 2002), is an important finding in psychology relevant for all social sciences. This paper provides a cross-section of 49 observations, although the methodology could be extended to producing longitudinal data should more research be undertaken.

While a very small percentage of individuals in any given state may actually be true psychopaths, the level of psychopathy present, on average, within an aggregate population (i.e., not simply the low percentages of psychopaths) is a distinct research question. While empirical operationalizations of psychopathy frequently treat it as a binary categorization, the Hare Psychopathy Checklist (Hare 1991) treats it as a spectrum. The operationalization of psychopathy found here is consistent with psychopathy as thought of as a spectrum.

The paper builds off Rentfrow et al. (2013), who estimate the regional differences of the Big Five personality traits across the 48 contiguous states and Washington, D.C. The authors use five separate samples to develop a single estimate of each of the five traits for each region, and examine the traits’ relationship with various socioeconomic outcomes. They then use cluster analysis to identify three clusters of personalities – “Friendly and Conventional,” which roughly corresponds to the Midwest and the South, “Relaxed & Creative,” which is primarily found in the Southwest and Pacific Northwest, and “Temperamental & Uninhibited,” corresponding to the Northeast plus Texas.

The paper uses this state-level data on personality in conjunction with Hyatt et al. (Forthcoming), who translate the Big Five personality traits into psychopathy. These latter authors argue counter to Patrick et al. (2009), who previously described psychopathy as a constellation of disinhibition, boldness, and meanness. Hyatt et al. demonstrate that these traits are superfluous, as they are already nested within

the Big Five personality traits. Boldness corresponds to low neuroticism and high extraversion, meanness corresponds to low agreeableness, and disinhibition corresponds to low conscientiousness. The findings of Rentfrow et al (2013) and Hyatt et al. (Forthcoming) can thereby be combined into a method of estimating the level of psychopathy for each U.S. state.

While this may be an indirect methodology, it is far less costly to re-estimate than the obvious alternative, i.e., attempting to implement the Hare Psychopathy Checklist (Hare 1991) for each individual state. Previous estimates pertain primarily to prison populations (Hobson and Shines 1998; Cooke 1995; Rasmussen et al. 1999), or how psychopathy differs across cultures (Cooke 1998). To our knowledge, there is no previous cross-sectional subnational data set on psychopathy.

To explore the data, this paper takes these estimates and compares them to two variables that relate to psychopathy at a micro level - homicide rate and the percentage of the state living in an urban area. It also uses information on the nine professions positively correlated with psychopathy and eight negatively correlated with psychopathy, according to Dutton (2012: 162). The univariate relationships at the macro level are inconsistent and inconclusive as a whole, but certain univariate relationships are statistically strong. Descriptively, for example, there is a strong correlation between psychopathy and the variable for urban. This exploration of the data also suggests that the inclusion of the District of Columbia in future research should be done with care, since it is an outlier, at least in part due to it being an entirely urban geographic area.

II. DATA AND METHOD

Data for the Big Five personality traits for the 48 contiguous state plus the District of Columbia appear in the appendix of Rentfrow et al. (2013). Each of the Big Five receives a *T*-score centered on a mean of 50 and a standard deviation of ten. To apply Hyatt et al. (Forthcoming) and to create a raw score for psychopathy, extraversion enters positively, while neuroticism, agreeableness, and conscientiousness enter negatively. The method found here simply subtracts the scores for neuroticism, agreeableness, and conscientiousness from extraversion. This raw score appears in Table 1. The table then lists the

standardized value of each state, followed by its rank among the 49. The top five observations in psychopathy are the District of Columbia, Connecticut, California, New Jersey, and a tie of New York and Wyoming for fifth. The states that are least psychopathic are West Virginia, Vermont, Tennessee, North Carolina, and New Mexico. Descriptive statistics for psychopathy can be found in Table 2.

Psychopathy is loosely correlated with what Rentfrow et al. (2013) characterizes as the “Temperamental and Uninhibited Region,” which is defined in terms of “low extraversion, very low agreeableness and conscientiousness, very high neuroticism, and moderately high openness” (2013: 1008). This definition includes some positive relationships and some negative relationships with psychopathy. Psychopathy need not be clustered in the same ways in which Rentfrow et al. (2013) find personality to be clustered, and it is unlikely that the small number of true psychopaths would tend to drive results overall for the general question of personality, which is true even as we examine the concept of psychopathy in aggregate statistics.

The most extreme data point is the District of Columbia, which received a standardized score of 3.48. The next highest data point is Connecticut, which received a 1.89 standardized score. The presence of psychopaths in District of Columbia is consistent with the conjecture found in Murphy (2016) that psychopaths are likely to be effective in the political sphere. Another point of interest is the odd placement of Wyoming (tied for 5th) relative to its geographic neighbors of Montana (43rd), Idaho (24th), Colorado (19th), Utah (22nd), South Dakota (13th), and Nebraska (37th). One possibility is that the sample size in Wyoming was the smallest of the 49 regions in Rentfrow et al. (2013) and this data point is simply incorrect, although Wyoming still had 3,166 observations.

The two socioeconomic variables chosen to compare the psychopathy data to are the homicide rate in 2016, according to FBI Uniform Crime Reports, and the percentage of the state’s population living in an urban area, according to the Census Bureau. The link between psychopathy and criminal activity is a standard social scientific finding (see, e.g., Kiehl and Hoffman 2011), whereas many bits of evidence

suggest an allure of big cities for psychopaths (Geher 2018). While population density is one operationalization of that latter hypothesis, the percentage living in an urban area is likely the better test.²

For additional candidates for correlates of psychopathy, we reference occupations that were found to be excessively likely or unlikely to be populated by psychopaths, as tabulated by Dutton (2012: 162). The occupations that were most disproportionately psychopathic were CEO, lawyer,³ media, salesperson, surgeon, journalist, police officer, clergyperson, chef, and civil servant. Those that were least psychopathic were care aide, nurse, therapist, craftsperson, beautician/stylist, charity worker, teacher, creative artist, doctor, and accountant. Theoretically, an application of conventional economic treatments of labor markets is that, while an uncountable number of factors influence the geographic distribution of occupations, a population that is marginally more (less) psychopathic would express a greater (lesser) labor supply for these occupations than would otherwise occur, since they receive less (more) disutility from performing them relative to other occupations. This could operate through the initial occupational choices of those living in a given region, or via marginally more (less) psychopathic individuals moving to an area in response to greater (lesser) demand for the occupations located there.

Data by state for 2016 for occupations, expressed relative to a thousand of workers of a given state, can be found in the Occupational Employment Statistics, published by the Bureau of Labor Statistics. Some of the occupations listed by Dutton correspond to a single occupation in the data set, while others correspond to different categories of occupations or sets of them. Three of these occupations, civil servant, charity worker, and craftsperson, do not have a clear correspondence to the data set and were dropped. Which of the data from Occupational Employment Statistics were used is provided in Table 3. Descriptive statistics for all variables is found in Table 2. We should note, finally, that for some

² Consider, for example, New York State. The urbanity of the environment for most living in New York is captured by the metric, whereas population density over-weights the small number of people living in the very rural areas of upstate New York.

³ This indirectly relates to a longstanding finding in economics that the presence of lawyers is detrimental to economic growth (Murphy et al. 1991).

states and occupations, no observations were appear in the data. These states were dropped from the data, instead of appearing in the data as a zero.

A sample size of 49 would unlikely yield any conclusive claims of causality except in the most auspicious of circumstances, so the focus here will be to use the univariate correlations to help in describing the nature of the data set, not to establish causality. In the section that will follow, the correlation coefficient R and the t -statistic from a simple regression using psychopathy as the sole explanatory variable will be given. This will be given first with the full sample, and then with the District of Columbia omitted, given that for many of the variables, it drives much of the variation – almost to the exclusion of the date points in comparison.

III. BREIF EMPIRICAL ANALYSIS

Table 4 provides the simplified regression results of the two socioeconomic indicators and 17 occupations. The first column serves to remind the reader which direction the correlation is expected to run. These results are very mixed. A few of results move strongly and tightly in the expected direction, regardless of whether the District of Columbia is excluded, such as percent urban and the prevalence of lawyers. But this is not true of a majority of the relationships, including the relationship between psychopathy and homicide rates. Anecdotally, for example, the Northeast urban centers such as New York City and Boston have not recently suffered from especially high crime rates.

There are some pairs of regressions where the absolute values of the t -statistics are each greater than two while also achieving the “incorrect” sign, these namely being the prevalence of accountants, beauticians, and artists. One could readily formulate auxiliary explanations of why these relationships held in such a way, but that is not the point of this exercise. Rather, what seems to be the case is that the collective psychopathy of a region is a rather noisy indicator, at least univariately. At the same time, given that, for a few variables, the psychopathy measure achieves a t -statistic greater than four, there appears to be something underlying the correlation, regardless of whether the correlation is causal. As such, empirically, the measure of psychopathy by state is related to *something*, and is not simply a meaningless

tangle of personality traits – this latter being in some sense the “null hypothesis” of this paper. Since it does not appear that the measure of psychopathy is a meaningless tangle of personality traits, there is some amount of evidence in favor of the meaningfulness of the variable.

IV. CONCLUSION

Recent literature in psychology has studied the geographic distribution of various psychological characteristics. This literature promises to yield interdisciplinary fruit at the nexus of many social sciences, as in Garretsen et al. (Forthcoming). Using data from Rentfrow et al. (2013) and a methodology derived from Hyatt et al. (Forthcoming), we are able to derive state-level estimates for psychopathy. To our knowledge, these are the first subnational measures of psychopathy for the general population. It also differs from most empirical treatments of psychopathy; whereas most treatments view psychopathy as a binary question to be expressed as percentages of a population, the aggregate numbers created in this paper are closer to psychopathy as a spectrum, which is actually consistent with Hare (1991).

Areas of the United States that are measured to be most psychopathic are those in the Northeast and other similarly populated regions. The least psychopathic are predominantly rural areas. The District of Columbia is measured to be far more psychopathic than any individual state in the country, a fact that can be readily explained either by its very high population density or by the type of person who may be drawn a literal seat of power (as in Murphy 2016). Additionally, Wyoming is an odd data point, ranking very high in psychopathy given its lack of population. As a practical matter, it is recommended that any empirical analysis making use of this data excludes the District of Columbia as a robustness check in at least one of its specifications.

Of the occupational and socioeconomic variables considered, psychopathy at the state level did not always correlate, or even relatively frequently correlate, with variables in the expected direction. The lack of correlation includes the homicide rate, which actually flips sign when the District of Columbia is excluded from the sample. Numerous explanations could be given for these results, but the fact will remain that it is too noisy of an indicator to reliably behave as expected in the univariate context. Still,

that several regressions achieved such large t -statistics in small sample sizes suggests that this methodology is measuring an actual underlying signal. Additional waves of surveys of the Big Five personality traits by state (of sufficient sample size) would be all that is needed to generate longitudinal data by state. And ultimately, if longitudinal data were to be generated of a sufficient length of time, more credible empirical investigations of causality regarding the macro socioeconomic effects of psychopathy could be performed.

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Table 1. Psychopathy by State

State	Raw Score	Z-Score	Rank
Alabama	-101.4	-0.08	27
Arizona	-92.5	0.45	16
Arkansas	-100.0	0.00	23
California	-79.9	1.21	3
Colorado	-95.3	0.28	19
Connecticut	-68.6	1.89	2
Delaware	-90.7	0.56	14
District of Columbia	-42.3	3.48	1
Florida	-93.3	0.40	17
Georgia	-103.6	-0.22	32
Idaho	-100.9	-0.05	24
Illinois	-87.9	0.73	10
Indiana	-116.8	-1.01	41
Iowa	-95.1	0.30	18
Kansas	-103.2	-0.19	31
Kentucky	-108.5	-0.51	36
Louisiana	-102.9	-0.17	30
Maine	-83.6	0.99	7
Maryland	-89.0	0.66	12
Massachusetts	-92.3	0.46	15
Michigan	-101.1	-0.07	26
Minnesota	-104.6	-0.28	33
Mississippi	-118.2	-1.10	42
Missouri	-105.5	-0.33	34
Montana	-118.3	-1.10	43
Nebraska	-108.8	-0.53	37
Nevada	-85.2	0.89	9
New Hampshire	-113.1	-0.79	39

Table 1. Psychopathy by State, continued.

State	Raw Score	Z-Score	Rank
New Jersey	-81.9	1.09	4
New Mexico	123.1	-1.39	45
New York	-83.2	1.01	5T
North Carolina	-125.8	-1.55	46
North Dakota	-101.0	-0.06	25
Ohio	-96.3	0.22	21
Oklahoma	-121.4	-1.29	44
Oregon	-113.5	-0.81	40
Pennsylvania	-102.0	-0.12	28
Rhode Island	-102.3	-0.14	29
South Carolina	-110.7	-0.64	38
South Dakota	-89.9	0.61	13
Tennessee	-126.3	-1.58	47
Texas	-95.8	0.25	20
Utah	-98.5	0.09	22
Vermont	-127.5	-1.66	48
Virginia	-88.9	0.67	11
Washington	-107.1	-0.43	35
West Virginia	-135.1	-2.11	49
Wisconsin	-84.2	0.95	8
Wyoming	-83.2	1.01	5T

TABLE 2. Descriptive Statistics

Variable	n	Mean	Std. dev.	Min	Max
Psychopathy	49	-100.006	16.595	-135.1	-42.3
Homicide Rate	49	5.188	3.050	1.3	18.5
%Urban	49	73.912	14.929	38.7	100
Chief Executives	49	1.567	0.902	0.089	4.049
Lawyers	49	4.493	5.985	1.809	44.812
Media	48	0.273	0.136	0.122	0.934
Salespeople	49	60.996	8.528	21.258	81.577
Surgeons	44	0.344	0.182	0.076	0.94
Journalists	49	0.954	0.858	0.37	6.11
Police Officers	49	4.509	0.957	2.786	7.47
Clergy	47	0.347	0.401	0.105	2.6
Chefs	49	0.940	0.442	0.202	2.705
Care Aides	49	11.166	5.789	2.643	29.718
Nurses	49	22.563	3.566	15.663	32.126
Therapists	49	0.731	0.295	0.291	1.415
Beauticians	49	3.228	1.259	1.46	7.226
Teachers	49	36.993	5.331	19.371	49.336
Artists	49	3.691	1.051	2.068	7.054
Doctors	49	4.020	0.545	2.901	5.339
Accountants	49	8.457	2.231	4.903	15.769

NOTE: All occupations are stated in terms of per 1,000 jobs within the state.

TABLE 3. Data Definitions for Employment Categories Listed by Dutton (2012), Using Occupational Employment Statistics from the Bureau of Labor Statistics.

Occupation	Occupation(s) or Occupational Category
Chief Executives	“Chief Executives”
Lawyers	“Lawyers”
Media	“Radio and Television Announcers” and “Broadcast News Analysts”
Salespeople	All occupations listed under 41-20, 41-30, and 41-40, minus “Counter and Rental Clerks,” plus “Demonstrators and Product Promoters,” “Real Estate Brokers,” “Real Estate Sales Agents,” and “Telemarketers”
Surgeons	“Surgeons”
Journalists	“Editors” and “Writers and Authors”
Police Officers	“Police and Sheriff’s Patrol Officers”
Clergy	“Clergy”
Chefs	“Chefs and Head Cooks”
Care Aides	“Personal Care Aides”
Nurses	“Registered Nurses,” “Nurse Anesthetists,” and “Nurse Practitioners”
Therapists	“Psychiatrists” and “Clinical, Counseling, and School Psychologists”
Beauticians	All occupations listed under 39-50
Teachers	All occupations listed under 25-20 and 25-30
Artists	All occupations listed under 27-10
Doctors	“Pharmacists,” “Anesthesiologists,” “Family and General Practitioners,” “Internists, General,” “Obstetricians and Gynecologists,” and “Pediatricians, General”
Accountants	“Accountants and Auditors”

“Civil Servant,” “Charity Worker,” and “Craftsperson” were omitted due to lack of correspondence with any Occupational Employment Statistics occupational category.

TABLE 4. Relationship of Psychopath with Variables of Interest

Variable	Expected Sign	COMPLETE SAMPLE		CENSOR D.C.	
		<i>R</i>	<i>t</i>	<i>R</i>	<i>t</i>
Homicide Rate	+	0.554	1.59	-0.146	-1.00
%Urban	+	0.226	4.56	0.510	4.02
Chief Executives	+	0.147	1.02	-0.071	-0.48
Lawyers	+	0.558	4.61	0.374	2.73
Media	+	-0.073	-0.50	-0.170	-1.16
Salespeople	+	-0.174	-1.21	0.270	1.90
Surgeons	+	-0.029	-0.19	-0.126	-0.81
Journalists	+	0.556	4.59	0.269	1.90
Police Officers	+	0.164	1.14	-0.084	-0.57
Clergy	+	-0.116	-0.78	-0.092	-0.61
Chefs	+	0.375	2.77	0.303	2.15
Care Aides	-	-0.128	-0.88	-0.094	-0.64
Nurses	-	-0.360	-2.64	-0.262	-1.84
Therapists	-	0.033	0.22	0.071	0.48
Beauticians	-	0.396	2.95	0.549	4.46
Teachers	-	-0.189	-1.32	0.073	0.50
Artists	-	0.520	4.18	0.372	2.72
Doctors	-	0.033	0.23	-0.113	-0.77
Accountants	-	0.524	4.22	0.372	2.72
