



Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid



Brief Reports

There's no place like home: Stayers are more psychopathic than movers

Dritjon Gruda^{a,b,*}, Peter K. Jonason^c

^a Universidade Católica Portuguesa, Católica Porto SBE, Research Centre in Management and Economics, Porto, Portugal

^b School of Business, Maynooth University, Maynooth, Ireland

^c Vizja University, Warsaw, Poland

ARTICLE INFO

Keywords:

Dark triad
Psychopathy
Residential mobility
Geographical psychology
Selective migration

ABSTRACT

Recent evidence links residential mobility, moving away from one's childhood region, to higher Dark Triad scores. We ask the mirror-image question. In a U.S. adult sample with known childhood and current state ($N = 3958$), respondents still living in their childhood state (stayers) scored higher on psychopathy than those who had moved away (movers). The difference was small and survived comparisons within origin state and birth cohort with the current state held fixed. Machiavellianism and narcissism showed no statistically significant adjusted difference. The stayer difference did not depend on sex or on how far movers had gone, and a state-level education proxy gave no sign of socioeconomic selection. Among movers, higher scorers on all three traits went to denser destinations, and higher psychopathy scorers to states with more homicide and inequality. Lifetime immobility and recent mobility thus relate to psychopathy in opposite directions, which is consistent with interstate moves being pulled by opportunities that reach high scorers less often. Individual socioeconomic status and reasons for moving were unmeasured.

An old intuition holds that people who never settle are not to be trusted, and recent evidence lends it empirical form. Across eight studies, Zuo et al. (2024) found that residential mobility, the tendency to relocate away from where one grew up, is associated with higher scores on the Dark Triad: narcissism (e.g., grandiosity, entitlement), Machiavellianism (e.g., manipulation, deceit), and psychopathy (e.g., callousness, impulsivity), a family of aversive dispositions with well-documented interpersonal costs (Muris et al., 2017). Those who score relatively higher on these traits also prefer mobile lifestyles and urban locations (Jonason, 2018). Maps of where aversive personality clusters across states and countries (Gruda et al., 2024; Rentfrow & Jokela, 2016; Zettler et al., 2025) reflect who leaves and who remains as much as any local influence. If the “mobile” are “darker”, what of the people who still live in the state they grew up in?

Personality predicts who moves and where people move to (Jokela, 2009, 2021), and mobility reshapes self and community ties (Oishi et al., 2007). Moving to another state usually requires resources (e.g., money, education, a job offer) and social dispositions (e.g., trust, a willingness to build new relationships among strangers), and both are negatively associated with antagonistic traits; if the people who leave are selected on these characteristics, the people who stay will score higher on antagonism for that reason alone (i.e., the leftover hypothesis).

Alternatively, exploitative strategies may be most viable in stable, familiar networks where reputations are known (i.e., niche specialization hypothesis). Either way, lifetime retention rather than mobility would mark an aversive personality, reversing the sign reported by Zuo et al. (2024). Testing this requires separating the person who stayed from the place they stayed in, because a raw difference could reflect the enduring character of locations.

We test these ideas in a sample of adults from the USA for whom both the childhood state and the current state are known. Beyond a simple stayer–mover contrast, we ask whether any difference survives comparisons within origin state and birth cohort and with the current state held fixed. We also ask whether the traits predict where movers went.

1. Method

1.1. Participants

We report a secondary analysis of data collected by Gruda et al. (2024), who surveyed adults from the USA online in December 2022 through separate state-specific studies with a target of 100 respondents in each of 38 states. Respondents reported their current state and the state in which they grew up, and their coordinates were recorded. Of

* Corresponding author at: Universidade Católica Portuguesa, Católica Porto SBE, Research Centre in Management and Economics, Porto, Portugal
E-mail address: jgruda@ucp.pt (D. Gruda).

<https://doi.org/10.1016/j.paid.2026.114087>

Received 24 July 2026; Received in revised form 4 September 2026; Accepted 11 September 2026

Available online 15 September 2026

0191-8869/© 2026 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).

4230 respondents, 46 were excluded for implausible completion times (< 40s or > 30 m), six whose coordinates fell outside the USA, and 52 without a valid childhood state. A further 168 responses were excluded because they started between 04:00 and 05:59 (server time) on 1 December 2022. Their coordinates clustered in two locations rather than in the states reported; their median completion time was about 100 s; and their answers to reverse-keyed items ran in the same direction as their answers to forward-keyed items ($r = 0.51$ between the two raw item means, against -0.31 among other respondents). The rule uses only the timestamp; results including these responses appear in the Supplement (Tables S5 and S6). The analytic sample was 3958 (Mage = 40.53, SD = 12.91; 55.0% female; 80.8% White), of whom 1255 (31.7%) currently lived in a state other than the one in which they grew up.

1.2. Measures

The 27-item Short Dark Triad (Jones & Paulhus, 2014) measured Machiavellianism (e.g., “Make sure your plans benefit yourself, not others”), narcissism (e.g., “People see me as a natural leader”), and psychopathy (e.g., “People who mess with me always regret it”), nine items each, where participants reported their agreement (1 = strongly disagree; 5 = strongly agree) with each item and the corresponding items were averaged to create indexes of each trait (Cronbach's $\alpha = 0.82$, 0.79, 0.78, respectively). Descriptive statistics and intercorrelations appear in Table 1.

Respondents whose current and childhood state coincided were coded as stayers ($n = 2703$); the rest were movers ($n = 1255$). This indexes current co-location with one's childhood state rather than a verified lifetime history, so the stayer group includes return migrants. For movers, distance moved is the great-circle distance from the origin-state centroid (i.e., land-area-weighted county centroids) to current coordinates. State covariates were 2021 American Community Survey median household income and share with a bachelor's degree for the origin and current state.

1.3. Analytic strategy

A 2 (sex) $\times$ 2 (residential status) $\times$ 3 (trait) mixed-model ANOVA, with trait within-person and Kenward–Roger F tests, summarizes the stayer–mover difference alongside per-trait effect sizes. We then regress each trait on a stayer indicator (1 = lives in childhood state), reporting the unstandardized coefficient b , the adjusted stayer–mover difference in scale points, with the standardized coefficient alongside. Seven models add controls in turn: age, sex, and race; origin- and current-state income; origin-state and birth-year fixed effects; origin-state $\times$ 10-year birth-cohort cells (289 cells), which compare stayers only with movers from the same state and decade; age and current-state income within cells; and a full model adding current-state fixed effects, so that a stayer is also compared with people who moved into the same state. Standard errors are cluster-robust by current state (38 clusters) or, in fixed-effects models, by origin state (50).

2. Results

Fig. 1 shows the trait means by residential status. The ANOVA (Table 2) returned a main effect of residential status ($F[1, 3954] = 13.40$, $p < .001$); stayers scored higher than movers, with Cohen's d s = 0.05, 0.13, and 0.14 for narcissism, Machiavellianism, and psychopathy, and the Status $\times$ Trait interaction fell short of significance ($F[2, 7908] = 2.85$, $p = .058$). Men scored higher than women on every trait, most on psychopathy ($F[2, 7908] = 21.54$, $p < .001$). In contrast, sex did not qualify the status effect ($F[1, 3954] = 1.08$, $p = .30$), sex and status were unrelated ($r = -0.01$, Table 1), and there was no three-way interaction ($F[2, 7908] = 0.08$, $p = .93$).

Under regression controls (Table 3), stayers scored higher on psychopathy in every model, so the difference is not explained by origin state, birth cohort, current state, or demographics. The stayer coefficient (b) was 0.09 scale points unadjusted, 0.05 [0.01, 0.10] with origin-state and birth-year fixed effects ($p = .023$), 0.06 [0.02, 0.11] within origin $\times$ cohort cells ($p = .004$), and 0.06 [0.02, 0.10] in the full model with current-state fixed effects ($p = .002$). For Machiavellianism and narcissism the raw stayer advantage (0.10 and 0.04 points) was accounted for by the same controls (full model $b = 0.02$, $p = .53$, and 0.03 , $p = .13$). Whether the difference is larger for psychopathy than for the other traits is less clear. In a stacked version of the full model, the psychopathy coefficient exceeded the Machiavellianism coefficient by 0.07 SD ($p = .07$) and the narcissism coefficient by 0.04 ($p = .33$). The difference did not depend on how far movers had gone (Table S1; all $p \geq .32$).

Socioeconomic proxy test. The survey did not measure individual education or income. As a proxy, we asked whether the stayer difference is larger in origin states with low educational attainment (i.e., below the respondent-weighted median share with a bachelor's degree, 34.6%), where leaving is most likely to require a degree. It was not. The stayer $\times$ low-education interaction was null for psychopathy ($b = -0.01$ [−0.15, 0.12], $p = .82$) and narcissism, and negative for Machiavellianism ($b = -0.16$, $p = .012$; Table S2).

Comparing the upper and lower psychopathy quartiles by status (Table S3), 52.5% of respondents fell on the high-psychopathy/stayer or low-psychopathy/mover diagonal and 47.5% on the opposite one ($\chi^2[1] = 17.80$, $p < .001$, $\Phi = 0.09$); 73.1% of the upper quartile were stayers against 64.6% of the lower quartile.

Where movers go. Movers left dense, expensive, cooler states (most often California, New York, and Illinois) for less dense, cheaper, warmer ones (e.g., Florida, Nevada, Arizona, Colorado). On average the destination had lower median income, fewer graduates, lower density, a higher temperature, a slightly higher homicide rate, and a tighter culture ($ps \leq 0.001$; Table S4). Within origin state, and adjusting for age, sex, and race, each trait predicted a relatively denser destination (0.08, 0.07, and 0.07 SD per SD of trait, all $ps < 0.05$); narcissism predicted a warmer destination (0.07 SD, $p = .012$); psychopathy predicted a destination with a higher homicide rate (0.07 SD, $p = .021$) and more inequality (0.08 SD, $p = .022$); destination income, education, life expectancy, and tightness were unrelated to any trait. These attributes describe the kind of place people went to, not their reasons, and cannot separate selection into a destination from the influence of living there.

Table 1
Means, standard deviations, reliabilities, and intercorrelations among study variables.

Variable	M	SD	1	2	3	4	5
1. Narcissism	2.42	0.72	(0.79)				
2. Machiavellianism	2.89	0.73	0.36***	(0.82)			
3. Psychopathy	1.95	0.66	0.44***	0.60***	(0.78)		
4. Residential status	0.68	0.47	0.03	0.06***	0.06***	–	
5. Sex (female)	0.55	0.50	−0.15***	−0.17***	−0.28***	−0.01	–
6. Age	40.53	12.91	−0.10***	−0.21***	−0.23***	−0.14***	0.04**

Note. $N = 3958$. Cronbach's α on the diagonal in parentheses. Residential status: 1 = stayer (currently lives in childhood state), 0 = mover; sex: 1 = female, 0 = male. ** $p < .01$. *** $p < .001$.

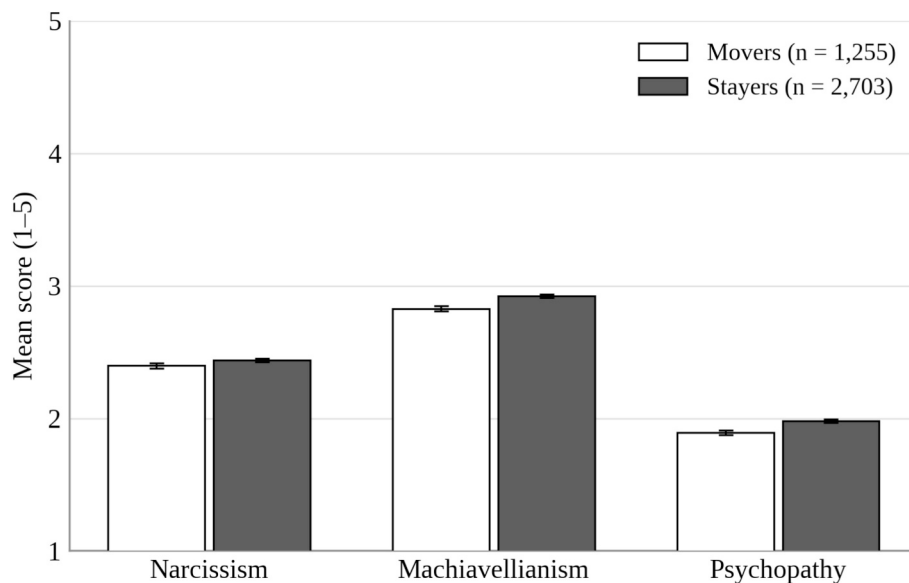


Fig. 1. Mean Dark Triad Trait Scores for Movers and Stayers. *Note.* Bars are means on the 1–5 response scale; error bars are ± 1 SE. Stayers ($n = 2703$) currently live in their childhood state; movers ($n = 1255$) do not. $N = 3958$.

Table 2
Mixed-model ANOVA of sex, residential status, and trait.

Source	df1	df2	F	p
Sex	1	3954	239.78	< 0.001
Residential status	1	3954	13.40	< 0.001
Trait	2	7908	2776.77	< 0.001
Sex $\times$ Residential status	1	3954	1.08	0.299
Sex $\times$ Trait	2	7908	21.54	< 0.001
Residential status $\times$ Trait	2	7908	2.85	0.058
Sex $\times$ Residential status $\times$ Trait	2	7908	0.08	0.927

Note. $N = 3958$ (11,874 trait observations). Linear mixed model with a random intercept per respondent; trait is the within-person factor. F tests use Kenward–Roger denominator degrees of freedom. Residential status: 1 = stayer, 0 = mover; sex: 1 = female, 0 = male.

3. Discussion

People who still live in the state they grew up in score slightly higher on psychopathy than those who left, by about 0.06 scale points (8% of a standard deviation) when compared within origin state and birth cohort with the current state held fixed; no adjusted difference appears for narcissism or Machiavellianism. That psychopathy is the trait involved is theoretically coherent. Of the three it is the most impulsive and least strategically self-presenting, the one most consistently tied to weak social bonds, and the one that most strongly predicts a preference for city

living (Jonason, 2018), a preference the destination analysis also shows among those who left. The evidence that the difference is specific to psychopathy is, however, suggestive rather than established.

Zuo et al. (2024) found mobility associated with higher Dark Triad scores; here, immobility is, for psychopathy. We read this as a difference in what the two designs measure. Seven of their eight studies used Chinese samples and the eighth a 17-country European dataset; their measures captured recent moves, mobility mindsets, and residence in high-outflow regions, and in their Study 1b the count of house moves predicted only psychopathy and lost significance once the mobility mindset was entered. Ours captures still living in one's childhood state within the United States. Exposure to mobility as a social ecology and the individual characteristics that determine who leaves and who stays are different things, and they may relate to aversive personality in opposite ways. Interstate moves are mostly pulled rather than pushed: a job offer, a transfer, a partner's relocation (Jokela, 2009; Molloy et al., 2011). Such openings arrive through reputations and networks, which psychopathy erodes (Landay et al., 2019), so high scorers should be pulled less often. A push account, in which high scorers exhaust relationships and are driven out (Jonason et al., 2025), predicts the opposite sign and may operate at the scale Zuo et al. captured with house moves. Exploitative strategies may also be more viable in stable local networks (Oishi et al., 2007). The leftover and niche-specialization accounts predict the same sign, and nothing here separates them; a design with residence histories could, because niche specialization implies that

Table 3
Residential immobility predicting each Dark Triad trait: unstandardized (b) and standardized (β) stayer coefficients.

Model	Narcissism b [95% CI]	β	Machiavellianism b [95% CI]	β	Psychopathy b [95% CI]	β
(1) Unadjusted	0.04 [−0.01, 0.09]	0.05	0.09 [0.04, 0.15]**	0.13	0.09 [0.04, 0.14]**	0.14
(2) + age, sex, race	0.01 [−0.04, 0.05]	0.01	0.04 [−0.00, 0.09]	0.06	0.04 [−0.01, 0.08]	0.06
(3) + origin and current state income	0.00 [−0.04, 0.05]	0.01	0.04 [−0.01, 0.08]	0.05	0.04 [−0.01, 0.08]	0.05
(4) Origin-state + birth-year FE	0.04 [−0.04, 0.11]	0.05	0.05 [−0.01, 0.11]	0.07	0.05 [0.01, 0.10]*	0.08
(5) Origin $\times$ cohort cell FE	0.04 [−0.04, 0.13]	0.06	0.05 [−0.01, 0.11]	0.07	0.06 [0.02, 0.11]**	0.10
(6) + age, current-state income	0.04 [−0.04, 0.11]	0.05	0.04 [−0.02, 0.11]	0.06	0.06 [0.02, 0.10]**	0.09
(7) + current-state FE	0.03 [−0.01, 0.08]	0.05	0.02 [−0.03, 0.06]	0.02	0.06 [0.02, 0.10]**	0.09

Note. $N = 3958$. b is the adjusted stayer – mover difference in scale points (1–5); β is the same coefficient with the trait standardized. Positive values mean respondents still living in their childhood state score higher. Model 3 adds 2021 American Community Survey median household income for the origin and current state. Model 4 enters origin-state and single-year birth-year dummies; Models 5–7 absorb origin-state $\times$ 10-year birth-cohort cells (289 cells); Model 6 adds age and current-state income; Model 7 adds current-state fixed effects, age, sex, and race. Standard errors are cluster-robust by current state (38 clusters) in Models 1–3 and by origin state (50 clusters) in Models 4–7. * $p < .05$. ** $p < .01$.

scores rise with time in place, whereas selection implies a difference already present at departure.

4. Limitations and conclusion

The sample is cross-sectional and non-probability, and all findings are correlational. Individual education and income were not measured; state-level income does not absorb the difference and the low-education-origin interaction is null for psychopathy, but individual socioeconomic status cannot be ruled out as an explanation of the stayer difference. We do not know why anyone moved or stayed. Reasons for moving are heterogeneous and related to, among other things, personality traits of the movers (Jokela, 2021); without them the design cannot distinguish selection on personality from selection on circumstances that correlate with it or say whether stayers stayed by choice or constraint. The destination analysis narrows this gap a little but describes destinations, not motives. Residential status reflects current co-location with one's childhood state, and childhood location is known only at state resolution.

Within state and generation, the people who stayed score a little higher on psychopathy. The folk equation of restlessness with bad character, and the recent finding that mobility predicts “dark” traits, is at most half the picture, and reading regional personality differences as facts about places can mistake a selection process for an environmental one.

CRedit authorship contribution statement

Dritjon Gruda: Writing – original draft, Methodology, Data curation, Conceptualization. **Peter K. Jonason:** Writing – review & editing, Conceptualization.

Ethics declaration

The data analyzed here were collected by Gruda et al. (2024) in accordance with the Declaration of Helsinki, with informed consent from all participants. The present article is a secondary analysis of those anonymized data.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author(s) used Claude Opus 4.8 (Anthropic) to edit prose, condense overlong sentences, and format the manuscript. After using this tool, the authors reviewed and edited the content as needed. The authors take full responsibility for the content of the publication.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

The authors declare that they have no conflicts of interest regarding the publication of this manuscript. All research was conducted in an unbiased manner, and there are no financial or personal relationships with other individuals or organizations that could inappropriately influence the work or its interpretation.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpaid.2026.114087>.

Data availability

Data will be made available on request.

References

- Gruda, D., Hanges, P., & McCleskey, J. (2024). Mirror, mirror on the wall, who's the healthiest of them all – The surprising role of narcissism in state-level health outcomes. *Journal of Research in Personality*, 109, Article 104465. <https://doi.org/10.1016/j.jrp.2024.104465>
- Jokela, M. (2021). Personality traits and reasons for residential mobility: Longitudinal data from United Kingdom, Germany, and Australia. *Personality and Individual Differences*, 180, Article 110978. <https://doi.org/10.1016/j.jpaid.2021.110978>
- Jokela, M. (2009). Personality predicts migration within and between U.S. states. *Journal of Research in Personality*, 43(1), 79–83. <https://doi.org/10.1016/j.jrp.2008.09.005>
- Jonason, P. K. (2018). Bright lights, big city: The Dark Triad traits and geographical preferences. *Personality and Individual Differences*, 132, 66–73. <https://doi.org/10.1016/j.jpaid.2018.05.024>
- Jonason, P. K., Gruda, D., & van Vugt, M. (2025). Towards an ecological model of the dark triad traits. *Evolution and Human Behavior*, 46(6), Article 106780. <https://doi.org/10.1016/j.evolhumbehav.2025.106780>
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21(1), 28–41. <https://doi.org/10.1177/1073191113514105>
- Landay, K., Harms, P. D., & Credé, M. (2019). Shall we serve the dark lords? A meta-analytic review of psychopathy and leadership. *Journal of Applied Psychology*, 104(1), 183–196. <https://doi.org/10.1037/apl0000357>
- Molloy, R., Smith, C. L., & Wozniak, A. (2011). Internal migration in the United States. *Journal of Economic Perspectives*, 25(3), 173–196. <https://doi.org/10.1257/jep.25.3.173>
- Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the Dark Triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science*, 12(2), 183–204. <https://doi.org/10.1177/1745691616666070>
- Oishi, S., Rothman, A. J., Snyder, M., Su, J., Zehm, K., Hertel, A. W., ... Sherman, G. D. (2007). The socioecological model of procommunity action: The benefits of residential stability. *Journal of Personality and Social Psychology*, 93(5), 831–844. <https://doi.org/10.1037/0022-3514.93.5.831>
- Rentfrow, P. J., & Jokela, M. (2016). Geographical psychology. *Current Directions in Psychological Science*, 25(6), 393–398. <https://doi.org/10.1177/09637271416658446>
- Zettler, I., Lilieholt, L., Bader, M., Hilbig, B. E., & Moshagen, M. (2025). Aversive societal conditions explain differences in “dark” personality across countries and US states. *Proceedings of the National Academy of Sciences of the United States of America*, 122(20), Article e2500830122. <https://doi.org/10.1073/pnas.2500830122>
- Zuo, S., Zhu, X., Wang, F., Huang, N., & Cai, P. (2024). Moving towards darkness: The personality–environment association between the Dark Triad and residential mobility. *European Journal of Personality*, 38(4), 633–656. <https://doi.org/10.1177/08902070231209789>