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Authors

Bleidorn, Wiebke
Schönbrodt, Felix
Gebauer, Jochen E
et al.

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To Live Among Like-Minded Others: Exploring the Links Between Person-City Personality Fit and Self-Esteem

Wiebke Bleidorn[1,2], Felix Schönbrodt[3], Jochen E. Gebauer[4], Peter J. Rentfrow[5], Jeff Potter[6], and Samuel D. Gosling[7,8]

[1]Department of Psychology, University of California, Davis; [2]Department of Developmental Psychology, Tilburg University; [3]Department of Psychology, Ludwig-Maximilians-Universität; [4]Department of Psychology, University of Mannheim; [5]Department of Psychology, University of Cambridge; [6]Atof Inc., Cambridge, Massachusetts; [7]Department of Psychology, University of Texas at Austin; and [8]Department of Psychology, University of Melbourne

Abstract

Does it matter if your personality fits in with the personalities of the people where you live? The present study explored the links between person-city personality fit and self-esteem. Using data from 543,934 residents of 860 U.S. cities, we examined the extent to which the fit between individuals' Big Five personality traits and the Big Five traits of the city where they live (i.e., the prevalent traits of the city's inhabitants) predicts individuals' self-esteem. To provide a benchmark for these effects, we also estimated the degree to which the fit between person and city religiosity predicts individuals' self-esteem. The results provided a nuanced picture of the effects of person-city personality fit on self-esteem: We found significant but small effects of fit on self-esteem only for openness, agreeableness, and conscientiousness, rather than effects for all Big Five traits. Similar results and effect sizes were observed for religiosity. We conclude with a discussion of the relevance and limitations of this study.

Keywords

personality, person-environment fit, Big Five, self-esteem, religiosity

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The choice of where to live is one of the most important decisions people face in life—perhaps as important as choosing a partner or a career. In picking a place to live, there are a variety of factors to consider—from proximity to work to cost of living. Some investigators (Florida, 2008) have also argued for the importance of another factor that may not immediately come to mind—the personality of the city, that is, the prevalent traits of the people who live there.

There are two ways in which a city's personality could be beneficial. First, some cities could generally be nice places to live; for example, cities populated by more agreeable, responsible, sociable people might be more pleasant and efficient than those populated by more hostile, reckless, unfriendly people. Second, some people may be suited to cities that would not suit other people; that is, the particular fit between a person and the personality of a city might provide benefits over and above the city's general tendency to offer benefits to its residents (Jokela, Bleidorn, Lamb, Gosling, & Rentfrow, 2015).

Previous research has shown that the match between the characteristics of a person and the characteristics of the person's environment predicts a variety of positive outcomes, including satisfaction, performance, and self-esteem (French, Rodgers, & Cobb, 1974; Higgins, 2005; Roberts & Robins, 2004). For example, Fulmer et al.

Corresponding Author:
Wiebke Bleidorn, Department of Psychology, University of California, Davis, One Shields Ave., Davis, CA 95616
E-mail: wiebkebleidorn@gmail.com

(2010) showed that the relationship between extraversion and self-esteem is stronger in societies with high levels of extraversion than in those with low levels of extraversion; the authors concluded that being around others who share one's personality characteristics has self-validating effects—that one's similarity to the majority of other people in a social context suggests that one is "all right."

On the basis of these findings, we predicted that people will have higher self-esteem the more their personalities fit the prevalent personalities of other people in the city where they live. This prediction is consistent with theories that emphasize the importance of interpersonal belonging for self-esteem (Leary & Baumeister, 2000). Specifically, people who live around others with personalities more similar to their own should experience less uncertainty and more social validation, which should enhance their feelings of belonging and self-esteem (Fulmer et al., 2010; Leary, 1999; Swann, 1983).

To examine the links between person-city personality fit (P-C personality fit) and self-esteem, we used data from 543,934 residents across 860 U.S. cities. We concurrently also evaluated the main effects of individual-level and city-level personality on self-esteem. Our primary analyses focused on the Big Five personality traits.

No previous research has examined the impact of P-C personality fit on self-esteem, so to establish an effect-size benchmark for contextualizing our results, we also examined the impact of P-C religiosity fit on self-esteem. That is, we ran the same fit analyses using a variable that is distinct from personality, but that is also linked to self-esteem (Gebauer, Sedikides, Schönbrodt, et al., 2015) and that has been shown to vary geographically (Motyl, Iyer, Oishi, Trawalter, & Nosek, 2014).

Method

Participants

We used data from a large sample of U.S. residents who provided personality and demographic information as part of the Gosling-Potter Internet Personality Project (http://www.outofservice.com). Potential respondents could find out about this noncommercial, advertisement-free Web site through several channels, including search engines and unsolicited links on other Web sites. After submitting their responses, participants received a customized personality evaluation (Gosling, Vazire, Srivastava, & John, 2004). The research project, including a waiver of parental consent, was approved by the University of California and University of Texas institutional review boards (for details, see Soto, John, Gosling, & Potter, 2008).

Data were collected online from December 1998 to December 2009. As is typical for online surveys, relatively few participants older than age 60 completed the online personality measure. Therefore, we used data only from participants who were between 16 and 60 years old (we were concerned that older participants were especially prone to selection effects and probably not representative of the general population of their age group). Also, we included only those participants who reported living in the United States and provided their ZIP codes. Using participants' ZIP codes and a ZIP-code database (UnitedStatesZipCodes.org, 2014), we determined the primary city in which each participant lived. To ensure sufficiently large samples in a large number of cities, we included participants only from cities with at least 200 respondents. As a result of these selection criteria, the total pool of participants was reduced to 543,934 U.S. residents from 860 cities across the 50 U.S. states. The sample came from 6,999 ZIP-code areas and was 63% female; respondents' mean age was 26.11 years (SD = 9.93). The city sample sizes ranged from 200, in Castle Rock, Colorado, to 9,031, in Chicago, Illinois (mean city sample size = 632, median = 352).

Measures

Personality. Individual-level personality was assessed by means of the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991). The BFI consists of 44 items designed to assess the prototypical traits defining the Big Five dimensions: emotional stability, extraversion, openness, agreeableness, and conscientiousness. Participants provided self-ratings on the items using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). All scales showed satisfactory Cronbach's α reliabilities, ranging from .75 for agreeableness to .83 for extraversion.

City-level personality was assessed by averaging the z-standardized BFI scores for each trait within each of the 860 cities.[1] Hence, cities in which the majority of participants rated themselves as average on a given Big Five trait had a z score of zero, a negative deviation from zero marked cities in which participants had a trait level lower than the sample average, and a positive deviation marked cities in which participants had a trait level higher than the sample average.

Religiosity. Individual-level religiosity was assessed with a variant of the Single-Item Religiosity Scale (SIRS; Norenzayan & Hansen, 2006). Participants rated the item "I see myself as someone who is very religious" on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The SIRS is a reliable and valid measure of global religiosity (Gebauer et al., 2014). City-level religiosity was assessed by averaging the z-standardized SIRS scores within each of the 860 cities (cf. Gebauer, Sedikides, & Neberich, 2012).

Self-esteem. Self-esteem was measured using the Single-Item Self-Esteem scale (SISE; Robins, Hendin, & Trzesniewski, 2001). Participants rated the item "I see myself as someone who has high self-esteem" on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Robins et al. (2001) reported extensive evidence for the reliability and validity of the SISE. SISE raw scores were transformed to the *T*-score metric (standard scores with a mean of 50 and standard deviation of 10). *T* scores can be used to index effect sizes. In terms of Cohen's (1988) now-conventional guidelines for interpreting effect sizes, a difference of 2 *T*-score points represents a small effect, a difference of 5 points represents a medium effect, and a difference of 8 points represents a large effect.

Analyses

We used multilevel polynomial regression and response surface plots (Edwards, 2002) to analyze the relationships among individual-level characteristics, city-level characteristics, and self-esteem. The polynomial regressions yielded regression coefficients for two linear terms (i.e., individual-level personality and city-level personality), their multiplicative interaction, and their quadratic terms as predictors of self-esteem. Multilevel modeling was used to account for the nested data structure (participants nested within cities) by allowing random intercepts for cities. Formally, our basic model can be specified as follows:

$$\text{self-esteem} = b_0 + b_1P + b_2C + b_3PC + b_4P^2 + b_5C^2 + u + e,$$

where P and C represent individual-level personality and city-level personality, respectively; b_0 represents the overall intercept; u represents the random intercept for each city; and e represents the error term on Level 1. We controlled for individual-level age and gender because of the likely relationships of these variables with both personality and self-esteem (e.g., Bleidorn et al., 2013; Orth & Robins, 2014). At the city level, we additionally controlled for average age and sample size.

To examine the effects of fit for the Big Five traits and religiosity, we ran six polynomial regression analyses and examined whether the interaction effects between individual-level characteristics and city-level characteristics were statistically significant. We then used the coefficients from the polynomial regressions to construct six response surface plots. These plots allowed us to visualize the results of the polynomial regressions in a three-dimensional space so that we could more closely inspect the meaning and magnitude of the effects. All analyses were performed using the statistical software R (R Development Core Team, 2014) and the RSA package (Schönbrodt, 2015).

Results

City-level differences in personality

The maps displayed in Figure 1 show the *z*-standardized Big Five scores of the 860 cities in the study (see the Supplemental Material for a complete list of the cities and their *z*-standardized scores on the BFI, SISE, and SIRS). Notably, as a result of the within-city aggregation, the city-level variance was considerably smaller (ranging between −0.5 and +0.5 *z*-score points for each of the five personality traits) than the individual-level variance. Because of the smaller variance of city-level personality, we did not expect to find exact numerical congruence between city-level and individual-level personality (i.e., for all participants with a personality *z* score less than −0.5 or greater than +0.5, it would be impossible to find a city with an equal *z* score). Therefore, we did not compute formal surface parameters along the numerical lines of congruence (Edwards, 2002), but interpreted the joint impact of the predictor variables on the response surface.

Analyses of P-C personality fit

Table 1 shows the results of the polynomial regressions for personality. The percentage of the total outcome variance explained by the full models (including *P, P*^{2}, *C, C*^{2}, and *PC*; i.e., marginal R^2 indicating the percentage of variance that is explained by the fixed effects; see Nakagawa & Schielzeth, 2013) ranged from 2.92% for openness to 26.89% for emotional stability.

Table 1 also shows the results of model-comparison tests using the Akaike information criterion (negative values indicate an improvement in model fit). For each of the five traits, we first compared a model including only the control variables with a model including the individual-level terms (i.e., *P* and *P*^{2}). We then compared the latter model with a model that also included the city-level main and interaction effects (i.e., *P, P*^{2}, *C, C*^{2}, and *PC*).

Emotional stability. We found a significant linear and a smaller quadratic effect of individual-level emotional stability on self-esteem; higher individual-level emotional stability was associated with higher self-esteem (Fig. 2a). Additionally, there were significant positive linear and quadratic effects of city-level emotional stability on self-esteem. The interaction term was not significant; thus, the model did not reveal effects of P-C fit on self-esteem in the case of emotional stability. The model-comparison tests indicated a significantly better fit for the model

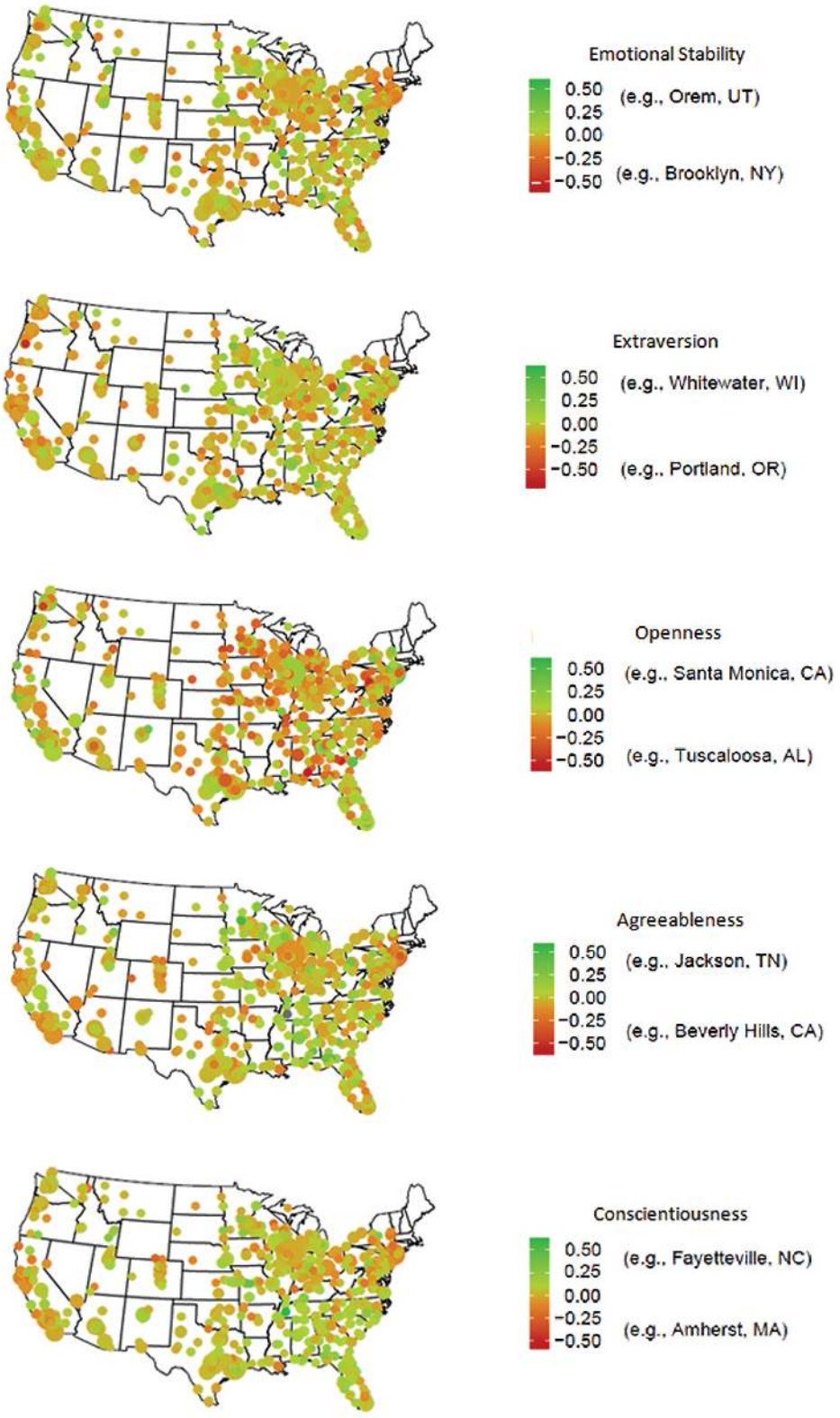

Fig. 1. Heat maps of the *z*-standardized Big Five scores of the 860 cities in the study. The size of the colored area representing each city is proportional to the city's sample size. The color keys include the names of example cites with relatively high and low scores on each trait.

Table 1. Results of the Polynomial Regressions of Self-Esteem on Individual-Level and City-Level Big Five Personality Traits and Religiosity

Trait	*P*	*C*	*PC*	P^2	C^2	R_1^2 (%)	R_2^2 (%)	ΔAIC1	ΔAIC2
Emotional stability	4.87***	1.94***	–0.10	–0.42***	5.45*	26.80	26.89	–133,025.07	–48.28
	(0.01)	(0.30)	(0.16)	(0.01)	(2.14)				
Extraversion	3.80***	0.49	–0.04	–0.31***	–2.57	18.24	18.25	–83,930.05	2.78
	(0.01)	(0.37)	(0.17)	(0.01)	(2.16)				
Openness	1.24***	–1.33***	0.79***	–0.10***	0.19	2.91	2.92	–7,515.89	–65.25
	(0.02)	(0.28)	(0.11)	(0.01)	(1.26)				
Agreeableness	1.92***	2.24***	0.77***	0.26***	2.03	4.94	5.04	–16,914.14	–86.38
	(0.02)	(0.32)	(0.16)	(0.01)	(1.60)				
Conscientiousness	2.84***	2.23***	0.72***	0.07***	4.41*	9.86	9.97	–40,467.73	–85.75
	(0.01)	(0.30)	(0.16)	(0.01)	(1.81)				
Religiosity	1.56***	0.16	1.02***	0.04*	–1.00**	3.69	3.75	–10,812.35	–198.73
	(0.02)	(0.15)	(0.07)	(0.02)	(0.29)				

Note: For the individual-level (*P*) and city-level (*C*) characteristics, their interaction (*PC*), and their quadratic terms (P^2, C^2), the table presents unstandardized regression coefficients, with standard errors in parentheses. All analyses controlled for individual-level age and gender and city-level age and sample size. R_1^2 refers to the percentage of outcome variance explained by a model including the control variables and the individual-level terms (*P* and P^2); R_2^2 refers to the percentage of outcome variance explained by the full model including the control variables, the individual-level terms, and the city-level main and interaction effects (*P*, P^2, *C*, C^2, and *PC*). The Akaike information criterion (AIC) was used as a measure of relative model fit (negative values indicate an improvement in fit): ΔAIC1 refers to comparison between a model with control variables only and a model including the individual-level terms (*P* and P^2); ΔAIC2 refers to comparison between a model with control variables and individual-level terms and the full model including the city-level main and interaction effects (*P*, P^2, *C*, C^2, and *PC*).
*$p < .05$. **$p < .01$. ***$p < .001$.

including the city-level effects. However, the absolute gain of explained variance after adding these effects was only 0.09% (a relative gain of less than 1% compared with the gain when the individual effects were added to the model).

Extraversion. As shown in Table 1 and Figure 2b, there were significant linear and quadratic effects of individual-level extraversion on self-esteem but no significant city-level effects. That is, individuals with higher extraversion scores rated themselves higher on self-esteem regardless of the city in which they lived. Model-comparison tests suggested no improvement in model fit after inclusion of the city effects, and the absolute gain of explained variance after adding these effects was 0.01% (a relative gain of less than 1% compared with the gain when the individual effects were added to the model).

Openness. There were significant but small linear and quadratic individual-level effects of openness on self-esteem; more open individuals tended to have higher self-esteem. We also found a negative linear city-level effect and a significant positive interaction between individual-level and city-level openness. The response surface in Figure 2c shows that individuals low in openness had higher self-esteem in less open cities than in open cities. The model-comparison tests showed an improvement in model fit after the individual-level terms were added to the model and again after the city-level terms were added. Yet the absolute gain of explained variance after inclusion of the city-level effects was 0.01% (a relative gain of less than 1% compared with the gain when the individual effects were added to the model).

Agreeableness. Agreeableness also had significant individual-level effects on self-esteem; individuals with higher agreeableness scores had higher self-esteem. Additionally, we found a significant linear city-level effect and a significant positive interaction between individual-level and city-level agreeableness. The response surface in Figure 2d shows that individuals high in agreeableness had the highest self-esteem in highly agreeable cities; in contrast, individuals low in agreeableness had generally lower self-esteem regardless of the city in which they lived. The model-comparison tests indicated that model fit improved after the individual-level terms were added and again after the city-level terms were added; the absolute gain of explained variance after inclusion of the city-level effects was 0.1% (a relative gain of 2% compared with the gain when the individual effects were added to the model).

Conscientiousness. We found significant individual-level effects of conscientiousness on self-esteem; individuals high in conscientiousness had higher self-esteem than did individuals low in conscientiousness.

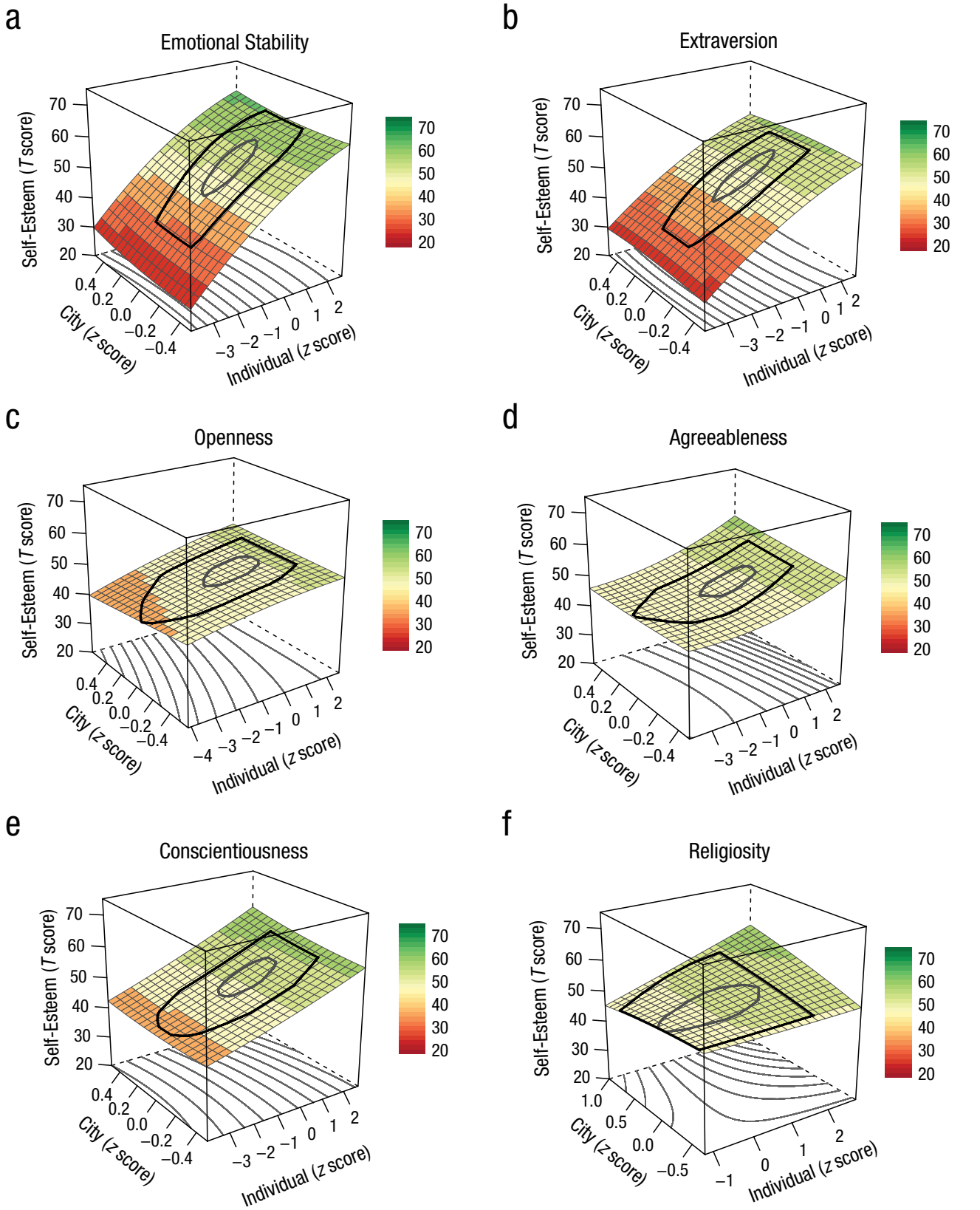

Fig. 2. Response surface plots for (a–e) the Big Five traits and (f) religiosity. The plots are based on multilevel polynomial regression analyses (including control variables). Only the surfaces within the outer ellipses (the range of the actual data) should be interpreted. The smaller ellipses show the inner 50% of the bivariate data and are comparable to the box of a box plot (Rousseeuw, Ruts, & Tukey, 1999).

Additionally, there were significant linear and quadratic city-level effects, as well as a significant interaction between individual-level and city-level conscientiousness. As shown in Figure 2e, these effects were most relevant for individuals high in conscientiousness, who had higher self-esteem in more conscientious cities. The model-comparison tests indicated that model fit improved after the individual-level terms were added to the model and again after the city-level terms were added; the absolute gain of explained variance after inclusion of the city-level effects was 0.11% (a relative gain of 1% compared with the gain when the individual effects were added to the model).

Summary. Polynomial regression and response surface analyses revealed significant main effects for all city-level Big Five traits except extraversion. Moreover, we found significant interactions between individual-level and city-level terms for openness, agreeableness, and conscientiousness, which suggests that some people have slightly higher self-esteem in cities in which most people share these personality characteristics with them. Providing an R^2 gain of less than 0.11% in each case, however, these city effects were very small compared with the effects of the individual-level personality traits (for which R^2 ranged from 5% to 27%).

Notably, both the Big Five personality traits and self-esteem were measured via self-report. Thus, the individual-level effects could have been inflated by shared method variance (e.g., evaluative biases). In contrast, the city-level effects were not affected by shared method variance and might therefore be more important, relative to the individual-level effects, than our results suggest.

Benchmark analysis

How much variance in self-esteem can one expect to be explained by a relatively distal predictor such as a city's personality? To provide a reasonable comparison standard and to guide the interpretation of the results for P-C personality fit, we also examined the degree to which the fit between individual- and city-level religiosity predicted individuals' self-esteem.

Table 1 shows the results of the polynomial regression for religiosity. The individual-level effects suggested that more religious individuals had higher self-esteem than less religious individuals. Also, there was a small quadratic city-level effect and a positive interaction between individual-level and city-level religiosity. Figure 2f illustrates that personal religiosity mattered only in cities with relatively high average religiosity. The model-comparison tests suggested an improvement in model fit after the individual-level terms were added and again after the city-level terms were added. The absolute gain of explained variance after inclusion of the city-level terms was 0.06% (a relative gain of 2% compared with the gain when the individual effects were added to the model). Thus, the results for P-C religiosity fit were comparable to the results for P-C personality fit.

Discussion

Three major findings from this project stand out. First, self-esteem was most strongly determined by individuals' own emotional stability and extraversion (see Table 1), a finding consistent with previous research on the links between personality and self-esteem (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001). These associations were not modified by city personality, which suggests a direct link between these traits and self-esteem that is largely independent of individuals' contextual setting and circumstances (Gebauer, Sedikides, Wagner, et al., 2015).

Second, there were positive interactions between individual-level and city-level terms for openness, agreeableness, and conscientiousness. We theorized that such effects of P-C fit are beneficial for self-esteem because a high degree of psychological fit should reduce uncertainty and increase social validation, thereby increasing feelings of self-worth (Hardin & Higgins, 1996; Leary, 1999).

Third, the statistical effect sizes for city-level personality effects on self-esteem were small compared with the sizes of the individual-level personality effects on self-esteem. One possible explanation for these small effects is that the city-level variance was considerably smaller than the individual-level variance, which suggests that the personalities of cities are more similar than one might expect. If cities are similar in personality, P-C fit cannot exert much of an effect over and above individual-level effects. Another possible explanation is that other effects (e.g., enhancement of self-esteem as a result of standing out from the crowd) countervail the effects of P-C personality fit.

To obtain a benchmark for the size of the effects of P-C personality fit, we also examined the extent to which the fit between person and city religiosity predicted self-esteem. As found previously (Gebauer, Sedikides, Schönbrodt, et al., 2015), there was a significant interactive effect of individual-level and city-level religiosity on self-esteem. The effect size was similar to the sizes of the effects observed for personality traits. These results suggest that personality and religiosity fit are of approximately equal importance in predicting self-esteem.

Limitations

The strengths of the present study include a large sample size and a fine-grained geographical resolution in

determining participants' cities. However, there are also important limitations. First, the analysis was limited by the use of cross-sectional data. We cannot rule out the possibility that people who are high in self-esteem and have certain personality profiles are better able than others to choose cities that fit their personality.

Second, the data were not representatively sampled. Although Internet-based samples are more diverse and representative than are the convenience samples commonly used in social-science research (Gosling et al., 2004), the representativeness of the samples might have varied across the cities we examined.

Third, city personality traits were operationalized as aggregates of inhabitants' personality traits, which might have tilted the analyses toward stronger effects for individual-level than for city-level variables. Future research is needed to test whether the present findings can be replicated using alternative operationalizations of city personalities, such as objective city characteristics.

Conclusion

The present research provides partial support for the hypothesis that P-C personality fit affects self-esteem, but also shows that city personality makes only a marginal contribution. Instead of finding an effect of fit for each Big Five trait, we found small effects only for three of the traits. Specifically, self-esteem was most strongly related to individuals' own emotional stability and extraversion, and these associations were not modified by the city characteristics measured in our study. For openness, agreeableness, and conscientiousness, we found statistically significant interactions, which suggest that some people have slightly higher self-esteem in cities in which most people share these personality characteristics with them. Future studies using different operationalizations of city personality and samples from other countries are needed to evaluate the generalizability of the results across measures and geographical regions.

Author Contributions

W. Bleidorn developed the study concept. Data collection was performed by S. D. Gosling and J. Potter. F. Schönbrodt and W. Bleidorn performed the data analyses. All authors contributed to the interpretation of the results. W. Bleidorn drafted the manuscript, and P. J. Rentfrow, F. Schönbrodt, J. E. Gebauer, and S. D. Gosling provided critical revisions. All authors approved the final version of the manuscript for submission.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information can be found at http://pss.sagepub.com/content/by/supplemental-data

Note

1. Aggregating individual-level data is the standard approach used to operationalize psychological constructs at a macro level (e.g., at the level of nations). Several studies have used this approach to operationalize the personality profiles of nations (e.g., McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005) and U.S. states (Rentfrow, Gosling, & Potter, 2008) and regions (Rentfrow et al., 2013).

References

Bleidorn, W., Klimstra, T. A., Denissen, J. J., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2013). Personality maturation around the world. A cross-cultural examination of social-investment theory. *Psychological Science*, *24*, 2530–2540. doi:10.1177/0956797613498396

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Edwards, J. R. (2002). Alternatives to difference scores: Polynomial regression analysis and response surface methodology. In F. Drasgow & N. W. Schmitt (Eds.), *Advances in measurement and data analysis* (pp. 350–400). San Francisco, CA: Jossey-Bass.

Florida, R. (2008). *Who's your city?: How the creative economy is making where to live the most important decision of your life*. New York, NY: Basic Books.

French, J. R. P., Jr., Rodgers, W., & Cobb, S. (1974). Adjustment as person-environment fit. In G. V. Coelho, D. A. Hamburg, & J. E. Adams (Eds.), *Coping and adaptation* (pp. 316–333). New York, NY: Basic Books.

Fulmer, C. A., Gelfand, M. J., Kruglanski, A. W., Kim-Prieto, C., Diener, E., Pierro, A., & Higgins, E. T. (2010). On "feeling right" in cultural contexts: How person-culture match affects self-esteem and subjective well-being. *Psychological Science*, *21*, 1563–1569. doi:10.1177/0956797610384742

Gebauer, J. E., Bleidorn, W., Gosling, S. D., Rentfrow, P. J., Lamb, M. E., & Potter, J. (2014). Cross-cultural variations in Big Five relationships with religiosity: A sociocultural motives perspective. *Journal of Personality and Social Psychology*, *107*, 1064–1091. doi:10.1037/a0037683

Gebauer, J. E., Sedikides, C., & Neberich, W. (2012). Religiosity, social self-esteem, and psychological adjustment on the cross-cultural specificity of the psychological benefits of religiosity. *Psychological Science*, *23*, 158–160. doi:10.1177/0956797611427045

Gebauer, J. E., Sedikides, C., Schönbrodt, F. D., Bleidorn, W., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2015). *Religiosity as social value: Replication and extension*. Manuscript submitted for publication.

Gebauer, J. E., Sedikides, C., Wagner, J., Bleidorn, W., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2015). Cultural norm-fulfillment, interpersonal-belonging, or getting-ahead? A large-scale cross-cultural test of three perspectives on the

function of self-esteem. *Journal of Personality and Social Psychology*, *109*, 526–548. doi:10.1037/pspp0000052

Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about Internet questionnaires. *American Psychologist*, *59*, 93–104. doi:10.1037/0003-066x.59.2.93

Hardin, C. D., & Higgins, E. T. (1996). Shared reality: How social verification makes the subjective objective. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Vol. 3. The interpersonal context* (pp. 28–84). New York, NY: Guilford Press.

Higgins, E. T. (2005). Value from regulatory fit. *Current Directions in Psychological Science*, *14*, 209–213. doi:10.1111/j.0963-7214.2005.00366.x

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory—Versions 4a and 54*. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.

Jokela, M., Bleidorn, W., Lamb, M. E., Gosling, S. D., & Rentfrow, P. J. (2015). Geographically varying associations between personality and life satisfaction in the London metropolitan area. *Proceedings of the National Academy of Sciences, USA*, *112*, 725–730. doi:10.1073/pnas.1415800112

Leary, M. R. (1999). The social and psychological importance of self-esteem. In R. M. Kowalski & M. R. Leary (Eds.), *The social psychology of emotional and behavioral problems: Interfaces of social and clinical psychology* (pp. 197–221). Washington, DC: American Psychological Association.

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 32, pp. 1–62). New York, NY: Academic Press.

McCrae, R. R., & Terracciano, A., & 79 Members of the Personality Profiles of Cultures Project. (2005). Personality profiles of cultures: Aggregate personality traits. *Journal of Personality and Social Psychology*, *89*, 407–425. doi:10.1037/0022-3514.89.3.40

Motyl, M., Iyer, R., Oishi, S., Trawalter, S., & Nosek, B. A. (2014). How ideological migration geographically segregates groups. *Journal of Experimental Social Psychology*, *51*, 1–14. doi:10.1016/j.jesp.2013.10.010

Nakagawa, S., & Schielzeth, H. (2013). A general and simple method for obtaining R^2 from generalized linear mixed-effects models. *Methods in Ecology and Evolution*, *4*, 133–142. doi:10.1111/j.2041-210x.2012.00261.x

Norenzayan, A., & Hansen, I. G. (2006). Belief in supernatural agents in the face of death. *Personality and Social Psychology Bulletin*, *32*, 174–187. doi:10.1177/0146167205280251

Orth, U., & Robins, R. W. (2014). The development of self-esteem. *Current Directions in Psychological Science*, *23*, 381–387. doi:10.1177/0963721414547414

R Development Core Team. (2014). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing.

Rentfrow, P. J., Gosling, S. D., Jokela, M., Stillwell, D. J., Kosinski, M., & Potter, J. (2013). Divided we stand: Three psychological regions of the United States and their political, economic, social, and health correlates. *Journal of Personality and Social Psychology*, *105*, 996–1012. doi:10.1037/a0034434

Rentfrow, P. J., Gosling, S. D., & Potter, J. (2008). A theory of the emergence, persistence, and expression of geographic variation in psychological characteristics. *Perspectives on Psychological Science*, *3*, 339–369. doi:10.1111/j.1745-6924.2008.00084.x

Roberts, B. W., & Robins, R. W. (2004). Person-environment fit and its implications for personality development: A longitudinal study. *Journal of Personality*, *72*, 89–110. doi:10.1111/j.0022-3506.2004.00257.x

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, *27*, 151–161. http://dx.doi.org/10.1177/0146167201272002

Robins, R. W., Tracy, J. L., Trzesniewski, K., Potter, J., & Gosling, S. D. (2001). Personality correlates of self-esteem. *Journal of Research in Personality*, *35*, 463–482. doi:10.1006/jrpe.2001.2324

Rousseeuw, P. J., Ruts, I., & Tukey, J. W. (1999). The bagplot: A bivariate boxplot. *The American Statistician*, *53*, 382–387. doi:10.1080/00031305.1999.10474494

Schönbrodt, F. D. (2015). RSA: Response surface analysis (R package Version 0.9.6) [Computer software]. Retrieved from http://cran.r-project.org/web/packages/RSA

Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2008). The developmental psychometrics of Big Five self-reports: Acquiescence, factor structure, coherence, and differentiation from ages 10 to 20. *Journal of Personality and Social Psychology*, *94*, 718–737. doi:10.1037/0022-3514.94.4.718

Swann, W. B., Jr. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2, pp. 33–66). Hillsdale, NJ: Erlbaum.

UnitedStatesZipCodes.org. (2014). *ZIP code database*. Retrieved from http://www.unitedstateszipcodes.org/zip-code-database/