Cultural Norm-Fulfillment, Interpersonal-Belonging, or Getting-Ahead?

A Large-Scale Cross-Cultural Test of Three Perspectives on the Function of Self-Esteem

Jochen E. Gebauer

Universität Mannheim

Constantine Sedikides

University of Southampton

Jenny Wagner

Leibniz Institute for Science and

Mathematics Education

Wiebke Bleidorn

Tilburg University &

University of California, Davis

Peter J. Rentfrow

University of Cambridge

Jeff Potter

Cambridge, Massachusetts

Samuel D. Gosling

University of Texas at Austin

& University of Melbourne

ABSTRACT

What is the function of self-esteem? We classified relevant theoretical work into three perspectives. The *cultural norm-fulfillment perspective* regards self-esteem a result of adherence to cultural norms. The *interpersonal-belonging perspective* regards self-esteem as a sociometer of interpersonal belonging. The *getting-ahead perspective* regards self-esteem as a sociometer for getting ahead in the social world, while describing low anxiety/Neuroticism as a sociometer for getting along with others. The three perspectives make contrasting predictions regarding the relation between the Big Five personality traits and self-esteem across cultures. We tested these predictions in a self-report study (2,718,838 participants from 106 countries) and an informant-report study (837,655 informants from 64 countries). We obtained some evidence for cultural norm fulfillment, but the effect size was small. Hence, this perspective does not satisfactorily account for self-esteem's function. We found a strong relation between Extraversion and self-esteem, but no relation between Agreeableness and self-esteem. These two traits are pillars of interpersonal belonging so the results do not fit the interpersonal-belonging perspective either. However, the findings closely fit the getting-ahead perspective. The relation between Extraversion and higher self-esteem is consistent with this perspective because Extraversion is the Big Five driver for getting ahead in the social world. The relation between Agreeableness and lower Neuroticism is also consistent with this perspective because Agreeableness is the Big Five driver for getting along with others.

##WITH ROBUST STANDARD ERRORS##

What is the function of self-esteem? This question poses longstanding and central issue in personality and social psychology. Relevant theoretical postulates fall into three broader perspectives. Self-esteem reflects the degree to which individuals (a) live up to cultural norms (*cultural norm-fulfillment perspective*), (b) are interpersonally included (*interpersonal-belonging perspective*), or (c) are getting ahead in the social world (*getting-ahead perspective*). An important next step is to competitively test the three perspectives against each other (Platt, 1968). The difficulty with undertaking such a test is that all perspectives trace self-esteem to social bases and are thus bound to make similar predictions (M. R. Leary, 2004). As demonstrated below, however, the three perspectives make contrasting predictions regarding the cross-cultural relations between self-esteem and the Big Five personality traits of E(xtraversion), A(greeableness), N(euroticism), C(onscientiousness), and O(penness to Experience; John, Naumann, & Soto, 2008). The present research competitively tests these predictions by capitalizing on self-report data (Study 1, 2,718,838 participants from 106 countries) and on informant-report data (Study 2, 837,655 informants from 64 countries).

<p style="text-align:center">Three Competing Perspectives on the Function of Self-Esteem</p>

Psychologists widely agree on self-esteem's definition. Namely, self-esteem is defined as the overall sense of worthiness and value that people place on themselves (Baumeister, 1998; Rosenberg, 1965). In contrast, there is little agreement about the function of self-esteem. A wealth of relevant theories emerged over the last decades. They can be sorted into three broader perspectives. We next describe these perspectives and derive their unique predictions regarding the cross-cultural relations between the Big Five personality traits and self-esteem.

Cultural Norm-Fulfillment Perspective

The cultural norm-fulfillment perspective rests on two interlocked propositions. First, individuals typically introject culturally normative traits, considering them as personally important. Second, self-esteem is the outcome of "owning" those introjected traits. In effect, this perspective predicts that self-esteem ultimately functions as a motivator to adhere to cultural norms via the proximal process of endorsing culturally valued traits as personally

important. The cultural norm-fulfillment perspective has deep intellectual roots and is still widely endorsed in personality/social psychology and in sociology. This perspective goes back, at least, to William James (1890), although it was Morris Rosenberg (1965) who formalized it and offered the first empirical evidence. Rosenberg argued that culturally normative traits become important to individuals and he demonstrated that "… a high self-rating on a trait was most closely related to global self-esteem when the trait was ... considered very important" (Rosenberg & Pearlin, 1978, p. 67). Several contemporary self-esteem theories build on this classic principle. For example, the self-evaluation maintenance model (Tesser, 1988) posits that self-esteem is threatened when a person is outperformed by others, but only if the threat is targeted to personally important traits. Even more relevant is the self-concept enhancing tactician model (SCENT; Sedikides & Strube, 1997), which explicitly highlights the importance of cultural norms (Sedikides & Gregg, 2003). According to the SCENT model, "people value personally the dimensions that imply successful role fulfillment" and derive their self-esteem from fulfillment of those cultural roles (Sedikides, Gaertner, & Toguchi, 2003, p. 63). Cultural norm-fulfillment also underlies Terror Management Theory (TMT; Greenberg et al., 1997): "for TMT, self-esteem is ultimately a culturally based construction that consists of viewing oneself as living up to specific contingencies of value...that are derived from the culture at large" (Pyszczynski et al., 2004, p. 437). Likewise, the contingencies of self-worth model (Crocker & Wolfe, 2001, p. 594-595) proposes that "the impact of events and circumstances on self-esteem depends on the perceived relevance of those events to one's contingencies of self-worth" and "contingencies of self-worth develop over the course of time in response to many forms of socialization and social influence."

Unique predictions. According to the cultural norm-fulfillment perspective, a given Big Five trait should be related to self-esteem only if it is culturally normative. For example, E is culturally normative in the US (McCrae, 2002), and hence E should be a strong predictor of self-esteem in that culture. E, however, is less normative in Japan (McCrae, 2002), and hence E should be a much weaker predictor of self-esteem in that culture. Parallel predictions apply to the other Big Five traits. Figure 1's upper panel displays those predictions.

Existing evidence. We know of four relevant studies. First, Fulmer, Gelfand, Kruglanski, Kim-Prieto, Diener, Pierro, and Higgins (2010) examined the relation between E and self-esteem in a sample of 1,107 undergraduates across nine countries. They found high correlations in countries where E was normative and lower correlations in countries where E was not normative. Second, Goodwin, Marshall, Fulop, Adonu, Spiewak, Neto, and Hernandez Plaza (2012) examined five mating-relevant traits ("caring," "socially attractive," "passionate romantic," "adventurer," "mature confident") and their cross-cultural relations with self-esteem. Their data came from 1,066 undergraduates from eight cultural groups. Their evidence largely supported the cultural norm-fulfillment perspective. For example, "caring" (a close relative of A) was most strongly related to self-esteem in traditional cultures, which value this trait most. Third, Gebauer, Wagner, Sedikides, and Neberich (2013) focused on the traits of agency and communion (Bakan, 1966; Wiggins, 1991). Their sample contained data from 187,957 online-daters across 11 European countries. They found a stronger agency-esteem relation with increasing country-level agency and a stronger communion-esteem relation with increasing country-level communion. Finally, Becker et al. (2014) asked participants to what degree their self-esteem is based on four sources ("controlling one's life," "doing one's duty," "benefitting others," "achieving social status"). Their data came from 4,852 adolescents across 20 countries. Participants reported that their self-esteem was strongly based on sources that were culturally normative, and this finding also replicated longitudinally. Together, the evidence is consistent with the cultural norm-fulfillment perspective. Yet, it is too early to conclude that cultural norm-fulfillment is the main basis for self-esteem: the pool of relevant studies was small, effect sizes were rarely reported, evidence was typically restricted to few Western cultures, and predictions of this perspective were not pitted against alternative explanations.

Interpersonal-Belonging Perspective

Human beings have a need for interpersonal belonging (Baumeister & M. R. Leary, 1995), which is satisfied by relatedness such as attachment bonds with parents (Bowlby, 1969) and romantic partners (Hazan & Shaver, 1987), friendships (Reis, 1990), and integration into social groups (Tajfel & Turner, 1979). Cooley (1902) recognized the

relevance of interpersonal belonging for self-esteem early on and the idea has remained in favor ever since. For example, attachment theorists describe secure attachment as the foundation of self-esteem (Feeney & Noller, 1990; Roberts, Gotlib, & Kassel, 1996), and social identity theorists argue that self-esteem stems from close ties to desirable ingroups (Rubin & Hewstone, 1998; Tajfel & Turner, 1979). Sociometer theory is another prominent example (M. R. Leary & Downs, 1995). It postulates that belongingness is so paramount to human reproduction and survival that self-esteem evolved as a meter or gauge of belonging prospects (M. R. Leary & Baumeister, 2000). This meter fulfils two interrelated functions (M. R. Leary, 2006): The pain of low self-esteem both alarms people of insufficient belonging and motivates them to strengthen their interpersonal ties.

Unique predictions. According to the interpersonal-belonging perspective, only traits that foster interpersonal belonging should be related to self-esteem. In the Big Five sphere, E and A are the interpersonal traits (M. R. Leary & Hoyle, 2009). Indeed, abundant research has shown that E and A are both independent predictors of higher interpersonal belongingness (Cuperman & Ickes, 2009; Graziano & Tobin, 2013; Jensen-Campbell et al., 2002; Newcomb et al., 1993; Ozer & Benet-Martínez, 2006; Schmutte & Ryff, 1997; Wagner, Lüdtke, Roberts, & Trautwein, 2014). It follows that only E and A should be related to self-esteem. This derivation was anticipated by M. R. Leary and Baumeister (2000). In regard to E, they argued that "[social] dominance is related to self-esteem because status is sometimes a criterion for inclusion" (p. 18). In regard to A, they argued that "people prefer to spend time with others who are friendly, pleasant, and nice," whereas "unfriendly, argumentative, uncongenial people make undesirable partners and group members" (p. 17).

What predictions does the interpersonal-belonging perspective make regarding cultural norms? This perspective views cultural norm-fulfillment as an additional means for belongingness and, therefore, self-esteem (MacDonald, Saltzman, & M. R. Leary, 2003). In contrast to the cultural norm-fulfillment perspective, however, the interpersonal-belonging perspective gives particular weight to a universal influence of each interpersonal trait on belonging and, therefore, self-esteem. Hence, the perspective predicts (a) a relatively strong relation between E and self-esteem, (b) a similarly strong relation between A and self-esteem,

and (c) a weaker norm-fulfillment effect on self-esteem compared to that predicted by the cultural norm-fulfillment perspective. Figure 1's middle panel displays those predictions.

Existing evidence. As it stands, the interpersonal-belonging perspective has received only partial empirical backing from Big Five research. E is strongly related to self-esteem (Kwan, Bond, & Singelis, 1997; Robins, Hendin, & Trzesniewski, 2001; Schmitt & Allik, 2005), but A is not (Graziano, Jensen-Campbell, & Finch, 1997; Judge, Erez, Bono, & Thoresen, 2002; Kwan et al., 1997). In fact, once the relation between A and E is controlled for, a small negative relation between A and self-esteem emerges (Robins, Tracy, Tresniewski, Potter, & Gosling, 2001). On the basis of that evidence, a recent literature review concluded, "self-esteem is weakly, if at all, linked to the trait of agreeableness" (MacDonald & M. R. Leary, 2012, p. 539). The lack of association between A and self-esteem poses a serious validity threat to the interpersonal-belonging perspective (cf. Wojciszke, Baryla, Parzuchowski, Szymkow, & Abele, 2011) because A is a particularly relevant interpersonal trait (M. R. Leary & Hoyle, 2009) and agreeable behavior is integral to interpersonal belonging (Graziano et al., 1997).

Getting-Ahead Perspective

T. Leary (1957, p. 266) claimed that, "all interpersonal behavior serves to reduce anxiety and to maintain self-esteem." From this vantage point, it is misleading to study self-esteem independent of anxiety. According to T. Leary, the bases of self-esteem and low anxiety are rooted in the fulfillment of two interpersonal motives: Social dominance and affiliation. Other authors have elaborated on these motives and others still have focused on the relations between the two motives, self-esteem, and anxiety. There is strong consensus that T. Leary's (1957) two interpersonal motives are the pillars of interpersonal belonging (Hogan 1983; Paulhus & John, 1998; Sedikides & Skowronski, 1997). For example, Hogan and Roberts (2004, p. 209) contended that "getting ahead" (equivalent to achieving social dominance) and "getting along" (equivalent to achieving affiliation) are the "the two big problems" that humans face in order to secure interpersonal belonging. Baumeister (2005, p. 45) maintained that "the human self has to seek both common ground with others (to gain acceptance) and distinctive capabilities (to perform a unique role within the system)." M. R.

Leary (2006, p. 104) pointed out that "the ideal combination of similarity and uniqueness [...] allows one to fit in while maximising the value of one's unique contributions, thereby increasing one's relational value." In all, dominance/getting ahead and affiliation/getting along jointly form the basis for interpersonal belonging. But what is the relation among these interpersonal motives, self-esteem, and anxiety?

Barkow's (1980) dominance theory furnishes a partial answer. This theory posits that self-esteem is a sociometer for social dominance/getting ahead in the social world (see also M. R. Leary, Cottrell, & Phillips, 2001). However, dominance theory is mute about T. Leary's two other concepts, affiliation/getting along and anxiety. Inasmuch as self-esteem was a sociometer for getting ahead (Barkow, 1980), it would be tempting to speculate that anxiety is a sociometer for getting along. The resultant dual-sociometer system is intuitively sound: Getting ahead is vertical in nature. It means that one has more social influence than others, fostering a sense of self-importance and superiority, which heightens self-esteem. In contrast, getting along is horizontal in nature. It means that one has mutually caring relations with others, fostering a sense of trust and security, which lowers anxiety. Relatedly, Gebauer, Sedikides, Lüdtke, and Neberich (2014) suggested that N may function as a sociometer for getting along. This suggestion is relevant to T. Leary's (1957) reasoning because of a close tie between anxiety and N. Specifically, N reflects the habitual experience of negative affect, including anxiety, anger, guilt, and depression (Widiger, 2009). Of those, anxiety is by far the most prevalent (Noller, Law, & Comrey, 1987; Soto & John, 2009). To illustrate, John (1990) examined adjective-based Big Five markers. Five adjectives loaded higher than .70 on the N factor (tense, anxious, nervous, moody, worrying), and they all reflected anxiety. In fact, measures of N and measures of anxiety are often so highly correlated that there is little empirical justification to treat them as separate (Scheier, Carver, & Bridges, 1994; Watson & Clark, 1984). This empirical pattern led Jorm (1989) to propose the term "anxiety/neuroticism." From a genetic perspective, the term appears justified. Jardine, Martin, Henderson, and Rao (1984) found that N and anxiety share all their genetic underpinnings. Similarly, in a cross-temporal meta-analysis of N and anxiety, Twenge (2000) found practically identical changes over time, treating N and anxiety interchangeably.

Unique predictions. As described earlier, E and A are both key predictors of interpersonal belonging (Ozer & Benet-Martínez, 2006). Yet, E and A predict interpersonal belonging via fundamentally different pathways. Extraverts seek social attention (Ashton et al., 2002), social status (Anderson, John, Keltner, & Kring, 2001), and social dominance (Trapnell & Wiggins, 1990). As a result, extraverts achieve interpersonal belonging via *getting ahead in the social world* (Barrick, Stewart, & Piotrowski, 2002; Hogan, 1983; Roberts & Robins, 2000). In contrast, agreeable people seek social harmony (Graziano & Tobin, 2013), cooperation on an equal level (Graziano, Hair, & Finch, 1997), and interpersonal warmth (Trapnell & Wiggins, 1990). As a result, agreeable people achieve interpersonal belonging via *getting along with others* (Barrick et al., 2002; Hogan, 1983; Roberts & Robins, 2000).

Together, the predictions of the getting-ahead perspective are straightforward. Higher E should be linked to higher self-esteem, but not to lower N. Furthermore, if N functioned as a sociometer for getting along, higher A should be linked to lower N, but not to higher self-esteem. We test the ensuing *double-dissociation hypothesis*. On first sight, the relations involving N may appear peripheral to our overall research objective to better understand the function of self-esteem. Yet, testing the double dissociation hypothesis helps in distinguishing the predictions of the getting-ahead perspective from those of the interpersonal-belonging perspective (M. R. Leary et al., 2001).

E probably is the only *direct* Big Five predictor of getting ahead in the social world. Additionally, C may be an indirect predictor via getting ahead in the non-social world (Hogan & Roberts, 2004). More precisely, conscientious people's goal directedness and their impulse control make them relatively successful in the working world (Roberts, Jackson, Fayard, Edmonds, & Meints, 2009) and this success may help them to get ahead in the social world too. Yet, conscientious people are not particularly motivated to get ahead socially (Paulhus & John, 1998). As a result, it is unclear whether and when conscientious people make use of their non-social success in order to advance socially. In fact, a set of studies by Anderson et al. (2001) suggests that conscientious people rarely get ahead socially. Anderson et al. (2001) examined the relations between the Big Five and social status, noting the conceptual

similarity between social status and getting ahead in the social world. E was a strong and consistent predictor of social status across their three studies. C, however, was consistently unrelated to social status. These results support the view that E is a much stronger predictor of getting ahead in the *social* world than C (Trapnell & Wiggins, 1990). From the standpoint of the getting-ahead perspective, then, it appears reasonable to expect a relation between C and self-esteem, but that relation should be smaller than the relation between E and self-esteem.

What predictions does the getting-ahead perspective make regarding cultural norms? Individuals who live up to their cultural norms will get ahead more easily than those who fail to do so. Therefore, the perspective predicts at the cross-cultural level: (a) a comparatively strong relation between E and self-esteem but a much weaker relation between E and N (at best); (b) a comparatively strong relation between A and N but a much weaker relation between A and self-esteem (at best); and (c) a weaker norm-fulfillment effect on self-esteem compared to what is predicted by the cultural norm-fulfillment perspective. Figure 1's bottom panel displays these predictions.

Existing evidence. No research to date has directly tested the double-dissociation hypothesis but some indirect evidence is available. The literature we reviewed for the interpersonal-belonging perspective suggests that most empirical findings pertinent to the relation between the Big Five's interpersonal traits and self-esteem are congruent with the getting-ahead perspective. In particular, E, but not A, is associated with self-esteem (MacDonald & M. R. Leary, 2012). Furthermore, Agency (a close relative of E) is more strongly linked to self-esteem than is Communion (a close relative of A) (Gebauer, Wagner et al., 2013; Gecas & Seff, 1989; Wojciszke et al., 2011). Another set of findings pertain to the relation between the Big Five's social traits and N. Factor analyses of the Big Five have revealed two higher-order factors (DeYoung, 2006; Digman, 1997). One subsumes E and O, the other subsumes A, C, and N. This pattern offers preliminary evidence that low N is more strongly linked to A than it is to E.

STUDY 1: SELF-REPORTS

Study 1 examines the cross-cultural relations between the Big Five and self-esteem to competitively test the cultural norm-fulfillment, interpersonal-belonging, and getting-ahead

perspectives. Over and above providing this first competitive test, Study 1 presents the most systematic description of the Big Five's cross-cultural relations with self-esteem to date. One prior investigation has addressed cultural norm-fulfillment effects regarding E (Fulmer et al., 2010) but the current study is the first to examine cultural norm-fulfillment effects for all Big Five traits.

A strength of this self-report study is its reliance on a very large sample ($N =$ 2,718,838) across 106 countries. As such, the study is well-positioned to uncover the relation of each Big Five trait with self-esteem, while additionally attending to the role of each Big Five trait at the country level. The study's large sample size also allowed us to control for the other Big Five traits in the analysis of each Big Five trait with self-esteem. Such controls are important at the individual level and at the country level, because the Big Five are intercorrelated at both levels. For example, a positive correlation between A and self-esteem may appear as support for the interpersonal-belonging perspective, but this correlation might be explained by a third variable-correlation with N (Neiss et al., 2005). Examining the unique relation of each Big Five trait with self-esteem safeguards against such alternative third-variable explanations (Gebauer, Haddock, Broemer, & von Hecker, 2013).

Method

Participants

We used data from 2,718,838 participants across 106 countries (59.8% female, 40.2% male; $M_{age} = 25.25$ years, $SD_{age} = 10.49$). The data were collected from December 1998 to December 2009, as part of the Gosling-Potter Internet Personality Project (Gosling, Vazire, Srivastava, & John, 2004). The project features a website for taking part in various online-studies. We arrived at the above sample by applying five selection criteria to the full, multi-study dataset. First, we excluded participants who responded with "no" to the question "did you answer truthfully on all of these questions?" Second, we excluded participants who responded with "yes" to the question "have you ever previously filled out this particular questionnaire on this site?" Third, we excluded participants who simultaneously named a US state as well as a country other than the US as their current place of residence. Fourth, we only included participants who completed at least one item from the relevant measures,

resulting in no missing data at the construct level. Finally, we excluded participants who came from countries represented by less than 300 participants, ensuring that the relations within each country were estimated with high precision (Schönbrodt & Perugini, 2013). Table 1 lists this study's 106 countries and provides demographic information for each country.

Procedure

The study was available in four languages. 77.5% of participants completed the study in English, 15.6% in Spanish, 4.0% in German, and 3.0% in Dutch. Participants first consented to take part and then responded to measures of the Big Five, self-esteem, and the demographics (in that order). At the end, participants received feedback on their personality and background information about personality psychology.

Measures

Participants responded to all measures on rating scales (1 = *disagree*, 5 = *agree*).

Individual-level Big Five. The Big Five were assessed with the Big Five Inventory (BFI; English version: John, Donahue, & Kentle, 1991; Spanish version: Benet-Martínez & John, 1998; German version: Rammstedt, 1997; Dutch version: Denissen, Geenen, van Aken, Gosling, & Potter, 2008). Table 2 includes detailed information on the BFI's five scales (i.e., number of items, example items, internal consistencies, and measurement invariance tests across the 106 countries). The table shows that all BFI scales had adequate psychometric properties.[1]

Self-esteem. Self-esteem was assessed with Robins et al.'s (2001) single-item scale ("I have high self-esteem"). Robins et al. (2001) estimated its reliability to surpass .75. Furthermore, in Robins et al.'s research, this single-item scale manifested virtually perfect correlations with the Rosenberg Self-Esteem Scale (Rosenberg, 1965) once attenuation due to unreliability was accounted for. Given that the Rosenberg Self-Esteem Scale is the gold standard for self-esteem assessment (Blascovich & Tomaka, 1991), the single item scale constitutes a valid measure of self-esteem.

Country-level Big Five. Following past research (Fulmer et al., 2010; McCrae, 2002; Schmitt, Allik, McCrae, & Benet-Martínez, 2007), we averaged participants' responses on

each Big Five trait within each of the 106 countries. Table 2's measurement invariance tests illustrates the suitability of that approach for the present dataset.[2]

Statistical Analyses

Participants were nested in countries. Hence, we conducted multi-level analyses, using the computer program HLM 7.01 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011). Specifically, we conducted random slope models (Raudenbush & Bryk, 2002), country-mean centering all level 1 predictors and grand-mean centering all level 2 predictors. Those centering decisions allowed us to unambiguously interpret the results of our cross-level interactions (Edres & Tofighi, 2007). We followed Snijders and Bosker's (2004, p. 50) recommendations to *z*-standardize all variables, resulting in standardized coefficients that can be interpreted akin to betas in single-level regression. Finally, as noted above, the present study has sufficient power to test our hypotheses in a single multi-level model, which simultaneously includes all Big Five traits at the individual level and at the country level. The model is shown below:

LEVEL 1 MODEL

$$z(\text{self-esteem}) = \beta_0 + \beta_1{}^*z(E) + \beta_2{}^*z(A) + \beta_3{}^*z(N) + \beta_4{}^*z(C) + \beta_5{}^*z(O) + r \quad \text{(eq. 1)}$$

where z-standardized self-esteem is modeled as a combination of one country-specific intercept, β_0, five country-specific linear slopes, β_1-β_5, and a residual, r. Country-specific intercepts and slopes were modeled as level 2 criteria:

LEVEL 2 MODEL

$$\beta_0 = \gamma_{00} + \gamma_{01}{}^*z(\mathbf{E_c}) + \gamma_{02}{}^*z(\mathbf{A_c}) + \gamma_{03}{}^*z(\mathbf{C_c}) + \gamma_{04}{}^*z(\mathbf{O_c}) + \gamma_{05}{}^*z(\mathbf{N_c}) + u_0 \quad \text{(eq. 2)}$$

$$\beta_1 = \gamma_{10} + \gamma_{11}{}^*z(\mathbf{E_c}) + \gamma_{12}{}^*z(\mathbf{A_c}) + \gamma_{13}{}^*z(\mathbf{C_c}) + \gamma_{14}{}^*z(\mathbf{O_c}) + \gamma_{15}{}^*z(\mathbf{N_c}) + u_1 \quad \text{(eq. 3)}$$

$$\beta_2 = \gamma_{20} + \gamma_{21}{}^*z(\mathbf{E_c}) + \gamma_{22}{}^*z(\mathbf{A_c}) + \gamma_{23}{}^*z(\mathbf{C_c}) + \gamma_{24}{}^*z(\mathbf{O_c}) + \gamma_{25}{}^*z(\mathbf{N_c}) + u_2 \quad \text{(eq. 4)}$$

$$\beta_3 = \gamma_{30} + \gamma_{31}{}^*z(\mathbf{E_c}) + \gamma_{32}{}^*z(\mathbf{A_c}) + \gamma_{33}{}^*z(\mathbf{C_c}) + \gamma_{34}{}^*z(\mathbf{O_c}) + \gamma_{35}{}^*z(\mathbf{N_c}) + u_3 \quad \text{(eq. 5)}$$

$$\beta_4 = \gamma_{40} + \gamma_{41}{}^*z(\mathbf{E_c}) + \gamma_{42}{}^*z(\mathbf{A_c}) + \gamma_{43}{}^*z(\mathbf{C_c}) + \gamma_{44}{}^*z(\mathbf{O_c}) + \gamma_{45}{}^*z(\mathbf{N_c}) + u_4 \quad \text{(eq. 6)}$$

$$\beta_5 = \gamma_{50} + \gamma_{51}{}^*z(\mathbf{E_c}) + \gamma_{52}{}^*z(\mathbf{A_c}) + \gamma_{53}{}^*z(\mathbf{C_c}) + \gamma_{54}{}^*z(\mathbf{O_c}) + \gamma_{55}{}^*z(\mathbf{N_c}) + u_5 \quad \text{(eq. 7)}$$

where γ_{00}-γ_{50} are sample means, γ_{01}-γ_{55} are sample-specific slopes of country-level Big Five, and u_0-u_5 are level 2 residuals indicating country-level deviations from sample means.

The main text describes the results of this model. Table S1 in the online supplement reports parallel tests from models that examine each predictor separately, not controlling for any other trait (at the individual level and at the country level). Those supplementary results are informative because they provide a closer link to past research (which typically lacked the power to include all relevant variables in a single model). Those results are also informative because they are as close as one can get to zero-order correlation results within a multi-level framework. As such, they provide the most comprehensive description of Big Five relations with self-esteem to date, given that they are based on data from 2,718,838 participants across 106 countries.

All three self-esteem perspectives predict that cultural norm-fulfillment is related to self-esteem. Crucially, however, only the cultural norm-fulfillment perspective anticipates the potency of these effects. Thus, we sought to quantify the size of the cultural norm-fulfillment effect: We employed the pseudo ΔR^2 test, gauging the proportion of criterion-variance explained by a given multi-level predictor (Raudenbush & Bryk, 2002).[3]

Results

Main Effects

To begin, we examined the main effects of each Big Five trait on self-esteem. The upper-left part of Table 3 presents the results. Much in line with the evaluative, genetic, and evolutionary overlap between N and self-esteem that we described above, there was a sizable relation between these two emotional traits. Over and above N, however, E emerged as the strongest predictor of self-esteem, followed by C, then O, and A which was weakly but negatively related to self-esteem. These results fit the getting-ahead perspective best. The results pose difficulties for the interpersonal-belonging perspective, given that A is a unique predictor of interpersonal belonging.[4]

Cross-Level Interactions

Next, we examined the role of culture in the Big Five relations with self-esteem. The lower-left part of Table 3 presents the results. In support of cultural norm-fulfillment, the relation between E and self-esteem (hereafter, E-esteem relation) strengthened with increasing country-level E and, likewise, the C-esteem relation strengthened with increasing country-level C. A parallel effect emerged for N, although this cross-level interaction did not reach significance. Finally, the A-esteem and O-esteem relations were not moderated by country-level A and O, respectively. Thus, not all cross-level interactions supported cultural norm-fulfillment as a source of self-esteem. However, cultural norm-fulfillment effects did emerge more consistently in the supplementary analyses, which tested each Big Five trait separately. Table S1 shows that cross-level interactions were significant for E, C, O, and marginally significant for A.[5]

As described earlier, all three self-esteem perspectives are in line with cultural norm-fulfillment effects. Yet, the perspectives differ in their predictions regarding the strength of these effects. Table 1 includes the results of simultaneous regressions of all Big Five traits on self-esteem for each of the 106 countries separately. Inspection of those independent relations indicates that there are clear differences across cultures, but these differences are modest in size (see Table S2 for corresponding zero-order correlations within each country). The ΔR^2 estimates of the cross-level interactions (Tables 3 and S1) further support the conclusion that cultural norm-fulfillment effects are generally modest. Their size is more consistent with the predictions of the getting-ahead perspective (and also of the interpersonal-belonging perspective, which, however, received little support from the main effect analyses).[6] So far, then, the results favor the getting-ahead perspective over the other two perspectives. We turned next to a test of the getting-ahead perspective's supplementary hypothesis that A is uniquely linked to anxiety/N.

N as Criterion

This second model was identical to the first one (eq. 1-7) with a crucial exception: self-esteem and N were interchanged at the individual level and at the country level. (Again, Table S1 reports equivalent tests from models that examine each predictor separately, not controlling for any other trait.) The upper-right part of Table 3 presents the results for the

main effects. Again, we found a sizable (negative) relation between self-esteem and N. More important, however, A now emerged as the strongest (negative) predictor of N, followed by C, E, and O which was weakly but positively related to N. Once more, these results fit the getting-ahead perspective well.

It is generally assumed that norm-fulfillment effects on self-esteem are direct and strong, whereas relevant effects on other emotional dispositions, such as anxiety/N, are indirect and weak (Fulmer et al., 2010; Gebauer, Wagner et al., 2013; Greenberg, Solomon, & Pyszczynski, 1997; Higgins, 2000; Sedikides, Gaertner, & Vevea, 2005). Hence, we did not expect unequivocal evidence for cultural norm-fulfillment in the cross-level interactions on N. The lower-right part of Table 3 shows virtually no support for cultural norm-fulfillment effects on N. More precisely, the results supported this perspective for A, but they opposed it for C, O, and self-esteem.

Extreme-Group Comparisons

The above analyses suggest that cultural norm-fulfillment may partly underlie Big Five relations with self-esteem. These analyses also suggest, though, that such norm-fulfillment effects are modest in size (Table 3). Following Diener, Tay, and Myers (2011), this section supplements the above analyses with extreme-group comparisons. Such comparisons provide an alternative way to judge the strength of norm-fulfillment effects compared to the strength of the Big Five's main effects. We proceeded to examine the unique relation between a given Big Five trait and self-esteem in the top 25% countries (i.e., first quartile) on this Big Five trait, and we compared those results with equivalent results from the bottom 25% countries (i.e., fourth quartile) on that Big Five trait. For the sake of completeness, we also examined the same relations within the second and third quartiles. We used standard meta-analytic techniques to estimate the relations within each quartile. Our estimates reflect the average unique correlations in Table 1. Before averaging the correlations, we Fisher-Z transformed the correlation coefficients and weighted them by $n_{country}$ - 3 (Shadish & Haddock, 1994).

Figure 2's left-hand panel displays the extreme-group comparisons for self-esteem as the criterion. The panel clearly shows that culture matters, but it also shows that culture

matters only to a modest degree. Specifically, the Big Five relations with self-esteem replicated across the extreme-group samples, which speaks against the cultural norm-fulfillment perspective as the key explanation for self-esteem. Additionally, Figure 2's left-hand panel also speaks against the interpersonal-belongingness perspective as the key self-esteem explanation. This is because the figure illustrates a strong relation between E and higher self-esteem within each subsample, but no such relation between A and higher self-esteem. In contrast, the results fit well with the getting-ahead perspective. Complementing that evidence, Figure 2's right-hand panel displays equivalent extreme-group comparisons for N as the criterion. In support of the getting-ahead perspective, there was a comparatively strong relation between A and lower N within each quartile of countries, whereas the relation between E and lower N was considerably smaller.

Discussion

Study 1 provided the first competitive test of three major perspectives on the function of self-esteem. The test capitalized on the Big Five's cross-cultural relations with self-esteem. The most important finding was a unique and universal relation between E and self-esteem, coupled with a unique and universal relation between A and lower N. No such relations emerged between A and self-esteem or between E and lower N. Stated another way, we obtained clear, cross-cultural evidence for the double-dissociation hypothesis. The evidence is fully consistent with the getting-ahead perspective, but at odds with the cultural norm-fulfillment and interpersonal-belongingness perspectives (see Figure 1 for the predictions of all perspectives). The support for the double-dissociation hypothesis notwithstanding, we also found some evidence for cultural norm-fulfillment on self-esteem (but not on N). This evidence, however, was weak and can be parsimoniously explained by the getting-ahead perspective, according to which cultural norm-fulfillment is one means for getting ahead in the social world.[7,8]

Study 1 contributed to the literature in two additional ways. First, it offered the most complete test of the Big Five's cross-cultural relations with self-esteem to date. We used data from 2,718,838 participants, resulting in highly precise estimates of those relations. We also sampled our participants from an unusually large number of countries ($n = 106$). Second,

although a prior investigation looked at cultural norm-fulfillment effects regarding E (Fulmer et al., 2010), our study was the first to focus on cultural norm-fulfillment effects across all Big Five traits.

STUDY 2: INFORMANT-REPORTS

The prior study relied on self-reports. Self-reports certainly have their place. For example, emotional traits are inherently subjective and may be most appropriately assessed by self-reports (Baumeister et al., 2003). Nonetheless, self-reports can be influenced by socially desirable responding. Socially desirable responding is typically motivated either by self-presentation/impression management (M. R. Leary & Kowalski, 1990; Paulhus, 1998) or self-deceptive enhancement (Paulhus, 1998, 2002). Self-presentation is an unlikely confound in Study 1 because the motivation to self-present is absent when participants feel anonymous (Paulhus, 1984, 1991) as they do in anonymous online studies such as the present one, where they don't provide identifying information (Gosling et al., 2004).

In contrast, we cannot *a priori* rule out self-deceptive enhancement as a confound. Granted, our statistical approach ameliorates this concern because it controlled for the shared variance between the Big Five traits (eqs. 1-7). It typically is this variance that is at risk of being confounded by self-deceptive enhancement (Anusic, Schimmack, Pinkus, & Lookwood, 2009). Nonetheless, a replication of Study 1 with informant-reports would offer convincing evidence that our results are not liable to any sort of self-report bias (Paulhus, 2002). Therefore, in Study 2, we set out to replicate the findings with informant-reports on 826,980 acquaintances across 65 countries. To the best of our knowledge, this is the first informant-report investigation on the Big Five's cross-cultural relations with self-esteem.

Study 2's informants served as participants in Study 1. Therefore, we were in the fortunate position to use the informants' self-reports (Big Five and self-esteem) as statistical controls. These controls help to keep several potential informant-report confounds in check, including self-projection (i.e., informants projecting their own attributes onto their acquaintance; Wood, Harms, & Vazire, 2010) and differences in informants' general scale use (e.g., acquiescence tendency, extreme scoring; Paulhus & Vazire, 2007). It is essential to note that adding the self-reports as controls also partials out valid variance in informant-reports;

this is because there typically is covariation between informants' and acquaintances' "true" traits due to assortative pairing (Luo & Klohnen, 2005), genetic overlap (Bleidorn et al., 2010), or shared social contexts (Caspi, Herbener, & Ozer, 1992). Thus, inclusion of these control variables provides a very conservative test of the three perspectives.

Method

Participants

We used data from 826,980 informants across 65 countries (53.3% female, 41.7% male; M_{age} = 25.43 years, SD_{age} = 10.44). 62.5% completed the study in English, 27.1% in Spanish, 5.1% in German, and 5.3% in Dutch. As in Study 1, the data were collected as part of the Gosling-Potter Internet Personality Project (March 2001 to December 2009). We arrived at the above sample by applying selection criteria parallel to those of Study 1. Specifically, we again excluded participants who indicated that their responses were not truthful as well as participants who indicated that they have completed the same study before. We also excluded participants who named a US state as well as a country other than the US as their current place of residence. Again, we only included participants who completed at least one item of each measure. Finally, we again excluded participants who came from countries with less than 300 respondents. Table 4 list this study's 65 countries.

Procedure

The procedure was identical to Study 1's, with one exception. In addition to self-reports, participants provided informant-reports on a close acquaintance. They were instructed to "rate someone whom you know well, such as a close friend, coworker, or family member." Past research has validated informant-reports from close friends (Funder & Colvin, 1988), coworkers (Hogan, Hogan, & Roberts, 1996), and family members (Vazire & Mehl, 2008).

Measures

The measures were identical to those of Study 1, with one exception. For each item, participants had two rating scales. The first scale (labeled "Myself") assessed participants' own traits. The second scale (labeled "Other") assessed the traits of a close acquaintance via informant-report. All multi-item measures had adequate psychometric properties (Table 2).

Results

Informant-Reports Only

The statistical analyses were parallel to Study 1's. In a first step, we examined the direct replicability of Study 1, and thus we did not include informants' self-reports as statistical controls. That is, we examined the same model as described in Study 1's eq. 1-7, but replaced individuals' self-reports with informant-reports. In effect, this study's key model re-examined all traits simultaneously. (The online supplement reports the results of models that only include one trait at a time; Table S3.)

We first inspected the independent main effects of each informant-reported Big Five trait on informant-reported self-esteem. The upper-left part of Table 5 presents those results. As in the self-report data, we obtained the expected sizable relation between N and self-esteem. Apart from N, however, E again emerged as the strongest predictor of self-esteem, followed by C, then O, and A which was weakly but negatively related to self-esteem. These informant-report results fully replicate Study 1's self-report results and thus fit the getting-ahead perspective best. The results are difficult to explain from an interpersonal-belonging perspective, given that A chiefly matters for interpersonal belonging.

Next, we examined the role of culture in the Big Five relations with self-esteem. The lower-left part of Table 5 presents those results. We found strong support for cultural norm-fulfillment in the cases of E, A, C, and N. The relation between O and self-esteem did not strengthen with increasing country-level O. As described earlier, all three self-esteem perspectives are in line with those cultural norm-fulfillment effects. The perspectives differ, however, in their predictions about the size of the effects. Table 4 includes the simultaneous regression results of all informant-reported Big Five traits on informant-reported self-esteem for each of the 65 countries. Inspection of those unique relations indicates differences across cultures that are only modest in size (see Table S2 for corresponding zero-order correlations within each country). The ΔR^2 estimates of the cross-level interactions (Tables 5 and S3) once more buttress the conclusion that cultural norm-fulfillment effects are generally modest. Their size is consistent with the getting-ahead perspective; it is also consistent with the interpersonal-belonging perspective, which, however, received little support from the main-effect analyses.

Next, we tested the getting-ahead perspectives supplementary hypothesis that A, but not E, is uniquely related to N. We computed a second model, which was identical to the first model (see eq. 1-7) with the exception that we switched the roles of informant-reported self-esteem and informant-reported N (at the individual level, but also at the country level). This second model examined all Big Five traits simultaneously. (The online supplement reports the results of models that include only one Big Five trait at a time; Table S3.) We first attended to the independent main effects. The upper-right part of Table 5 presents those results. We obtained, once again, the sizable (negative) relation between informant-reported self-esteem and informant-reported N. More important, however, A emerged as the strongest (negative) Big Five predictor, followed by C, than E, and O which was weakly but positively related to N. The results fit the getting-ahead perspective very well.

We proceeded to test for cultural norm-fulfillment on N and again expected little evidence for it. The lower-right part of Table 5 shows no support for cultural norm-fulfillment effects on N. The cross-level interactions were far from being significant for E, A, C, and O. The cross-level interaction involving self-esteem was significant, but not in the direction predicted by this perspective.

Finally, we conducted extreme group analyses to better detect the influence of culture on the Big Five's relations with self-esteem. We followed the same procedure as in Study 1's extreme-group comparisons. The results were remarkably similar to those of Study 1 (Figure 3) and thus strongly favor the getting-ahead perspective over the interpersonal-belonging and cultural norm-fulfillment perspectives.

Informant-Reports, Controlling for Informants' Self-Reports

In a second step, we repeated all the analyses just described but this time we included informants' self-reported Big Five traits and their self-reported self-esteem in the models. Tables 6 and S4 show that inclusion of these conservative controls did not conceptually alter any of our earlier conclusions. Furthermore, Figure 4 shows the extreme group comparisons after controlling for informants' self-reports. This figure illustrates the strong fit with the results described in the "informant-report only" section above (Figure 3).

<div align="center">

Discussion

</div>

Study 2's informant-report results replicated Study 1's self-report results. In addition, the informant-report results remained essentially unchanged, even after controlling for informants' self-reported Big Five and their self-reported self-esteem. Thus, the universality of the double-dissociation hypothesis stands on firm empirical grounds, a pattern that supports the getting-ahead perspective over the cultural norm-fulfillment and the interpersonal-belonging perspectives. The universality of the double-dissociation hypothesis notwithstanding, the present study also revealed informant-report evidence for cultural norm-fulfillment effects on self-esteem (but not on N).[11] This in itself is a key extension of prior research on cultural norm-fulfillment because all prior research has relied exclusively on self-reports (Becker et al., 2004; Fulmer et al., 2010; Gebauer, Wagner et al., 2013; Goodwin et al., 2012).

GENERAL DISCUSSION

What is the function of self-esteem? The literature on this question can be sorted into three broad perspectives. The *cultural norm-fulfillment perspective* dates back to James (1907) and was famously elaborated upon by Rosenberg (1965). Both assumed that self-esteem results from living up to introjected cultural norms. Contemporary formulations that build on this idea include the self-evaluation maintenance model (Tesser, 1988), the SCENT model (Sedikides & Strube, 1997), TMT (Greenberg et al., 1997), and the contingencies of self-worth model (Crocker & Wolfe, 2001). The *interpersonal-belonging perspective* dates back to Cooley (1902). He reasoned that self-esteem reflects the degree to which individuals are held in esteem by others. More broadly, that perspective maintains that interpersonal belonging is the basis for self-esteem. Contemporary formulations in line with this proposal include attachment theory (Mikulincer, 1995), social identity theory (Tajfel & Turner, 1986), sociometer theory (M. R. Leary & Baumeister, 2000), and sociometer theory's extensions (Kavanagh et al., 2010). Finally, the *getting-ahead perspective* has its roots in T. Leary's (1957) writings. He considered self-esteem alongside anxiety, and claimed that high self-esteem and low anxiety result from satisfying two distinct interpersonal motives: social dominance and affiliation. Barkow (1980) argued that high self-esteem constitutes a sociometer for social dominance (or getting ahead; Hogan, 1983). Barkow did not suggest a

sociometer for affiliation, but, based on T. Leary's writings, low anxiety/N is a strong candidate for the sociometer of affiliation (or getting along; Hogan, 1983) (Gebauer, Sedikides, et al., 2014).

Summary of Our Findings

We engaged in a competitive test of the three self-esteem perspectives. We first sought to identify a domain in which these perspectives make contrasting predictions. This was not a simple task because all perspectives trace self-esteem to social bases and consequently are bound to be somewhat similar in their predictions (M. R. Leary, 2004). However, the different models make different predictions in terms of the cross-cultural relations between the Big Five and self-esteem. So we examined those relations in two studies based on self-reports (Study 1; $N = 2,408,475$ from 101 countries) and informant-reports (Study 2; $N = 826,980$ from 65 countries). The results converged across the complementing reporting methods.

All three self-esteem perspectives endorse the view that cultural norm-fulfillment is relevant to self-esteem. However, only the cultural norm-fulfillment perspective predicts that norm-fulfillment is a major determinant of self-esteem. Yet, this strong position was unsupported: norm-fulfillment played only a modest role in the relation between the Big Five and self-esteem. Our research paradigm also revealed no support for the interpersonal-belonging perspective. According to that perspective, E and A should both predict higher self-esteem because both traits are important contributors to interpersonal belonging. Yet, only E consistently emerged as a key predictor of self-esteem. In contrast, A consistently failed to predict self-esteem, although A is just as important for interpersonal belonging as is E. In M. R. Leary's (2010, p. 479) words, "We do not value our relations with people whom we view as disagreeable ... as much as our relations with people with whom it is more pleasant to interact."

We obtained compelling support for the getting-ahead perspective. E was related to higher self-esteem, and this link replicated across countries with different average E-levels. Specifically, E emerged as the strongest predictor of self-esteem even in cultures with the lowest mean-levels in E (Figures 2-4). We found no evidence for A as a basis of self-esteem, but A was consistently related to lower N. The results offer the first empirical backing that

self-esteem functions as a sociometer for getting ahead, whereas anxiety/N functions as a sociometer for getting along. These findings can be meaningfully integrated in a dual sociometer system.

Towards a Dual Sociometer System for Getting Ahead and Getting Along

A dual sociometer system has theoretical advantages over a global one. A global sociometer would have the capacity to alarm people that their interpersonal-belonging prospects are insufficient, but people would remain in the dark about the reasons for it. In other words, they would have no information about whether their belonging is at risk due to failure to get ahead or failure to get along. Such information is crucial because it can prevent them from directing all their efforts on the wrong domain in order to re-establish their belongingness. The lack of specificity of a global sociometer would not be problematic, if getting ahead compensated easily for failure to get along (and vice versa). Such compensation, however, is not easy. Narcissism is a case in point. Narcissists are preoccupied with getting ahead at the expense of getting along (Paulhus, 2001), and, as a consequence, they are rejected and excluded in the long run (Paulhus, 1998).

Evidence from physiological psychology also supports a dual sociometer system. Bodily pains (acute and chronic) evolved as meters of bodily impairment (Melzack & Casey, 1968), and different pain experiences signal different impairment types (Price, Harkins, & Baker, 1987). Further, emotion researchers have assumed that *all* emotions serve as affective-motivational signals or meters (Frijda, 1986; McClelland, 1985). As such, anxiety/N may well serve as a meter signaling insufficient getting-along prospects (T. Leary, 1957). Finally, self-esteem and anxiety/N have optimally distinct affective signatures allowing people to readily tell them apart. High self-esteem is marked by high arousal positive affect, whereas low self-esteem is marked by low arousal negative affect (Moretti & Higgins, 1990). The reverse is true for anxiety/N. Low anxiety/N is marked by low arousal positive affect, whereas high anxiety/N is marked by high arousal negative affect (Higgins, Klein, & Strauman, 1985).

Denissen and Penke (2008) referred to sociometer theory (M. R. Leary & Baumeister, 2000) in their effort to understand the motivational underpinnings of N. These authors argued that, "neuroticism can be plausibly conceptualized as individual differences in people's

sensitivity to signals of social exclusion" (p. 1289). We are not the first, then, to evoke the idea that N may function as a sociometer. In contrast to our proposal for a dual sociometer system, however, Denissen and Penke linked N to interpersonal belonging in general rather than to getting along in particular.

M. R. Leary (2010) proposed that social anxiety serves as a sociometer. He argued that "individual differences in social anxiety should be related to the degree to which people desire to be valued and accepted, as well as to the degree to which they perceive that others do, in fact, value and accept them" (p. 480). Thus, M. R. Leary linked social anxiety to global interpersonal belonging. The key difference to the self-esteem sociometer is that the social anxiety sociometer is more directly attuned to prospects of making "a desired impression on other people" (p. 472). This view is consistent with our proposal that anxiety/N is the sociometer for getting along rather than getting ahead, because a socially desirable impression hinges much more on qualities that foster getting along than on qualities that foster getting ahead (Abele & Wojciszke, 2014; Paulhus & John, 1998).

Limitations and Future Research

The primary objective of our research was to clarify the function of self-esteem. A secondary objective was to test for the emotional signature of getting along. We generated initial evidence that the personality driver of getting along is uniquely linked to some form of low arousal-positive affect, but future research should seek greater specificity. For example, is it low N (Gebauer, Sedikides et al., 2014), low anxiety (T. Leary, 1956), or low social anxiety (M. R. Leary, 2010)? That research will have to confront a perennial difficulty. Specifically, the conceptual and empirical overlap among N, anxiety, and social anxiety is immensely high (Watson & Clark, 1984). For example, it is difficult to tease apart anxiety and social anxiety, because both have been exclusively traced back to *social* threats (Baumeister & Tice, 1990; see also Matthews, 2004). Similarly, anxiety and N both possess virtually identical change trajectories in response to changes in people's social relationships (Lehnart, Neyer, & Eccles, 2010).

The present research also raises questions about the nature of N. At the conceptual level, our dual sociometer account describes N (or anxiety, N's most dominant component) as

an affective-motivational meter, which is functionally more akin to self-esteem than to the other Big Five traits. On first sight this conceptualization may appear problematic, because factor analyses in the lexical tradition revealed an N factor alongside the E, A, C, and O factors. At the same time, however, no self-esteem factor emerged from those factor analyses. Yet, the factor analytic method is mute about whether or not its factors are functionally parallel (cf. Wood, Gardner, & Harms, 2015). Thus, it is well possible that N functionally differs from the other Big Five traits. At the same time, self-evaluative traits were removed from the original item-base that eventually lead to the Big Five (Allport & Odbert, 1936; Cattell, 1943; Norman, 1967). Thus, it was impossible for such self-evaluative traits (e.g., self-esteem) to emerge as a "Big" trait (Benet & Waller, 1995; Benet-Martínez & Waller, 1997, 2002). Over and above that, diverse research lines converge in the conclusion that N and self-esteem are functionally related. Specifically, both traits belong to the same category of evaluative traits (Furr & Funder, 1999; Judge, Erez, Bono, & Thoresen, 2002; M.R. Leary & Hoyle, 2009; Leising et al., 2013) and are less content laden than the other four Big Five traits (Paulhus & John, 1998). N and self-esteem also possess similar genetic underpinnings (Neiss, Stevenson, Legrand, Iacono, & Sedikides, 2009) and they share evolutionary histories (Sedikides & Skowronski, 1997). Not surprisingly, then, N and self-esteem are moderately correlated (Judge et al., 2002; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004).

When engaging in competitive testing, it is crucial to operationalize the constructs at the same level of specificity or generality in order to achieve a fair outcome (Platt, 1964; Sedikides, Gaertner, Luke, O'Mara, & Gebauer, 2013). We did so in focusing on the relation between Big Five traits and self-esteem, but follow-up research will do well to consider additional, and perhaps more direct tests. For example, a more direct test of the getting-ahead perspective would involve the assessment of (getting ahead) social dominance and (getting along) affiliation. Future research might benefit from examining the causal relations underlying the findings we obtained, thus bypassing the weaknesses of purely correlational designs.

We assessed each Big Five trait with a multi-item scale from the BFI (John et al., 1999), but we assessed self-esteem with the single-item SISES (Robins et al., 2001). The

psychometric properties of single-item measures typically fall behind those of multi-item measures; however a large body of evidence suggests that the SISES may be an exception (Gebauer, Broemer, Haddock, & von Hecker, 2008; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Ross & Wilson, 2002). For example, the SISES is so highly correlated with Rosenberg's (1965) Self-Esteem Scale that the two scales can be regarded as parallel measures of the same construct (Robins et al., 2001b). Nonetheless, compared to Rosenberg's (1965) Self-Esteem Scale, the SISES may be somewhat less strongly correlated with A/communion (Robins et al., 2001; Zeigler-Hill, 2010; but see Gecas [1982], Gecas & Seff [1989], and Wojciszke et al. [2011] for contrary evidence). To be sure, the differences are not large enough to threaten the validity of the double-dissociation hypothesis. Nevertheless, we sought to clarify whether the unique relations between A and self-esteem are somewhat more positive, when using other self-esteem measures. To do so we examined two additional samples, not drawn from the OOS. The first additional sample contained data from 435 German first-year psychology students (M_{age} = 24.41, SD_{age} = 6.72; 69% women). They completed the BFI as well as Collani and Herzberg's (2003) German version of Rosenberg's (1965) Self-Esteem Scale (RSES; α = .89). The second additional sample contained data from 610 American MTurk workers (M_{age} = 34.18, SD_{age} = 11.76; 47% women). They also completed the BFI, but self-esteem was assessed with three measures: the RSES (α = .94), the State Self-Esteem Scale (SSES; α = .94; Heatherton & Polivy, 1991), and the SISES (r_{RSES} = .75, r_{SSES} = .74). In both additional samples, we simultaneously regressed self-esteem on the Big Five. We found comparatively strong E-esteem relations, $\beta(431)$ = .32, $p < .001$ (German sample; RSES), $\beta(609)$ = .17, $p < .001$ (US sample; RSES), $\beta(609)$ = .21, $p < .001$ (US sample; SSES), $\beta(609)$ = .29, $p < .001$ (US sample; SISES). At the same time, we found small and negative A-esteem relations, $\beta(431)$ = -.05, $p = .17$ (German sample; RSES), $\beta(609)$ = -.03, $p = .41$ (US sample; RSES), $\beta(609)$ = -.08, $p = .008$ (US sample; SSES), $\beta(609)$ = -.16, $p < .001$ (US sample; SISES). Comparison of the A-esteem relations across the different self-esteem measures revealed that type of measure indeed mattered. This relation was closest to zero when using the RSES, and it was significantly more negative when using the SSES, z = 3.41, $p < .001$. The relation was even more negative, when using the SISES, z = 4.57, $p <$

.001. Importantly, these differences were small and do not challenge our conclusions from Studies 1-2. In fact, they provide additional and independent support for the getting-ahead perspective.

The cultural norm-fulfillment perspective typically defines culture at the country-level (Bernard, Gebauer, & Maio, 2006; Pyszczynski et al., 2004; Rosenberg, 1965). Following this definition, we examined cross-cultural differences in the Big Five relations with self-esteem across countries. Cultural norm-fulfillment, however, may have a somewhat stronger relation with self-esteem, if the focus lies on subcultures within countries. For example, there may be stronger evidence for cultural norm-fulfillment when the focus lies on Big Five norms of different ethnic groups within a country. The role of ethnicity is beyond the scope of the current work, but we did want to assure that the double dissociation hypothesis replicates across different ethnicities within a single country. Therefore, we re-tested this hypothesis in each of the 13 major ethnic groups from Study 1's US subsample (Black, Chicano, Chinese, Filipino, Indian/Pakistani, Japanese, Korean, Latino, Middle Eastern, Native American, Pacific Islander, Puerto Rican, White). Table S6 in the online supplement presents those results. The double-dissociation hypothesis replicated in each and every ethnic group.

We focused on trait self-esteem and traits in general. This approach is in line with the bulk of literature on cultural norm-fulfillment (Fulmer et al., 2010; Rosenberg, 1965), interpersonal belonging (Feeney & Noller, 1990; Roberts et al., 1996), and getting ahead (Barrick et al., 2002; Roberts & Robins, 2000). However, sociometer theory was initially formulated as an explanation for state self-esteem (M. R. Leary & Downs, 1995). Our theorizing about a dual sociometer system draws heavily on sociometer theory. Is this appropriate, given that our evidence concerns traits, rather than states? Also, the interpersonal-belonging perspective generally refers to trait self-esteem. Is it justifiable, then, to mix sociometer theory with the interpersonal-belonging perspective?

We believe that it is justified to draw on sociometer theory in proposing a dual sociometer system. We also claim that our evidence is informative for the interpersonal-belonging perspective in general, including sociometer theory. To begin, trait extensions of sociometer theory have been tested and been found valid (M. R. Leary, Tambor, Terdal, &

Downs, 1995). Indeed, MacDonald, Satzman, and M. R. Leary (2003) argued that sociometer theory is relevant to the understanding of trait self-esteem. In addition, empirical tests of sociometer theory have treated state and trait self-esteem interchangeably (Denissen, Penke, Schmitt, & van Aken, 2008; Gebauer, M. R. Leary, & Neberich, 2012; Stinson et al., 2008). Moreover, traits can be understood as the average of states over time (Fleeson, 2001) or as the result of repeated state experiences (Roberts & Jackson, 2008), and recent research indicates that this effect also pertains to state and trait self-esteem (Huttemann, Nestler, Wagner, Egloff, & Back, 2014). The latter finding supports earlier theory by M. R. Leary (1990, p. 227): "state self-esteem is tied to one's assessment of inclusion in the immediate situation; trait self-esteem is a compilation of the individual's history of experienced inclusion and exclusion." Finally, the sociometer system presumably evolved in *Homo sapiens* (or their hominid ancestors) when they lived in small hunter-gatherer groups in the African savannah (M. R. Leary, 2010). In these groups, the social structure was seemingly fixed and changes were presumably slow, pointing to the usefulness of a sociometer system that is calibrated to slow changes in trait-like interpersonal belonging. Research on immediate reactions to social exclusion squares with the proposal that the sociometer tracks slow changes. Specifically, threats to interpersonal belonging in the immediate situation stir emotional numbness rather than low state self-esteem (Baumeister, Brewer, Tice, & Twenge, 2007; MacDonald & M. R. Leary, 2005). Nonetheless, future research should examine the generalizability of our results to the state level. Might extraverted behavior engender social influence in the moment and, thus, increase state self-esteem? Might agreeable behavior lead to trusting interpersonal interaction in the moment and, thus, lower state anxiety?

Concluding Remarks

We tested the predictions of three major self-esteem perspectives by investigating the Big Five relations with self-esteem across cultures. E was a unique predictor of higher self-esteem across all cultures, whereas A was not. At the same time, A was a unique predictor of lower N across all cultures, whereas E was not. The cultural norm-fulfillment and the interpersonal-belonging perspectives cannot fully explain this double-dissociative pattern, but

the getting-ahead can. The findings favor the getting-ahead perspective as an explanation for self-esteem's function.

The results also offer initial evidence for a dual sociometer system. Self-esteem can be conceptualized as a sociometer for getting ahead in the social world, whereas anxiety/N can be conceptualized as a sociometer for getting along with others. We have argued that a dual sociometer system, which separately monitors each pillar of interpersonal belonging, has theoretical value over one global sociometer. M. R. Leary (2006, p. 96) has offered an analogy to describe sociometer theory. He "compared self-esteem to the fuel gauge on a car—a device that serves an incredibly important function by alerting drivers to how much fuel is in the tank." The dual sociometer system is an offspring of sociometer theory. As such, an extension of M. R. Leary's analogy may be suitable to illustrate the value of the dual sociometer system. In order to attain a desirable social position, people need a meter assuring that they keep outrunning others (getting ahead, corresponding to a fuel meter for cars), but also a meter assuring that they advance smoothly (getting along, corresponding to an oil meter for cars).

REFERENCES

Abele, A. E., & Wojciszke, B. (2014). Communal and agentic content in social cognition: A dual perspective model. *Advances in Experimental Social Psychology, 50,* 195-255.

Ashton, M. C., Lee, K., & Paunonen, S. V. (2002). What is the central feature of extraversion? Social attention versus reward sensitivity. *Journal of Personality and Social Psychology, 83,* 245-252.

Barrick, M. R., Stewart, G. L., & Piotrowski, M. (2002). Personality and job performance: Test of the mediating effects of motivation among sales representatives. *Journal of Applied Psychology, 87,* 43-51.

Barkow, J. (1980). Prestige and self-esteem: A biosocial interpretation. In D. R. Omark, F .F. Strayer, & D. G. Freedman (Eds.), *Dominance relations: An ethological view of human conflict and social interaction* (pp. 319-332). New York, NY: Garland STPM Press.

Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., pp. 680–740). New York: McGraw- Hill.

Baumeister, R. F. (2005). *The cultural animal*. New York, NY: Oxford University Press.

Baumeister, R. F., Brewer, L. E., Tice, D. M., & Twenge, J. M. (2007). Thwarting the need to belong: Understanding the interpersonal and inner effects of social exclusion. *Social and Personality Psychology Compass*, *1*, 506-520.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness or healthier lifestyle? *Psychological Science in the Public Interest, 4*, 1-44.

Baumeister, R. F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.

Baumeister, R. F., & Tice, D. M. (1990). Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9,* 165-195.

Becker, M., Vignoles, V. L., Owe, E., Easterbrook, M. J., Brown, R., Smith, P. B., ... & Koller, S. H. (2014). Cultural bases for self-evaluation: Seeing oneself positively in different cultural contexts. *Personality and Social Psychology Bulletin*, 40, 657-675.

Bem, S. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155-162.

Benet-Martínez, V., & John, O. P. (1998). Los Cinco Grandes across cultures and ethnic groups: Multitrait-multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology, 75,* 729-750.

Bleidorn, W., Kandler, C., Hülsheger, U. R., Riemann, R., Angleitner, A., & Spinath, F. M. (2010). Nature and nurture of the interplay between personality traits and major life goals. *Journal of Personality and Social Psychology, 99,* 366-379.

Bleidorn, W., Klimstra, T. A., Denissen, J. J. A., 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.

Bowlby, J. (1969). *Attachment and loss: Attachment*. New York, NY: Basic Books.

Caspi, A., Herbener, E. S., & Ozer, D. J. (1992). Shared experiences and the similarity of personalities: A longitudinal study of married couples. *Journal of Personality and Social Psychology*, *62*, 281-291.

Charles, S. T., & Carstensen, L. L. (2010). Social and emotional aging. *Annual Review of Psychology, 61,* 383-409.

Cooley, C. H. (1902). *Human nature and social order*. New York, NY: Scribner's.

Cuperman, R., & Ickes, W. (2009). Big Five predictors of behavior and perceptions in initial dyadic interactions: Personality similarity helps extraverts and introverts, but hurts "disagreeables". *Journal of Personality and Social Psychology, 97,* 667-684.

Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review, 108*, 593-623.

Denissen, J. J. A., Geenen, R., van Aken, M. A. G., Gosling, S. D., & Potter, J. (2008). Development and validation of a Dutch translation of the Big Five Inventory (BFI). *Journal of Personality Assessment, 90,* 152-157.

Denissen, J. J. A., & Penke, L. (2008). Motivational individual reaction norms underlying the Five-Factor model of personality: First steps towards a theory-based conceptual framework. *Journal of Research in Personality, 42,* 1285-1302.

Denissen, J. J. A., Penke, L., Schmitt, D. P., & van Aken, M. A. G. (2008). Self-esteem reactions to social interactions: Evidence for sociometer mechanisms across days, people, and nations. *Journal of Personality and Social Psychology, 95*, 181-196.

DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology, 91,* 1138-1151.

Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73,* 1246-1256.

Digman, J. M., & Takemoto-Chock, N. K. (1981). Factors in the natural language of personality: Re-analysis, comparison and interpretation of six major studies. *Multivariate Behavioral Research, 16,* 149-170.

Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior. *American Psychologist, 54,* 408-423.

Eaton, L. G., & Funder, D. C. (2003). The creation and consequences of the social world: An interactional analysis of extraversion. *European Journal of Personality, 17,* 375-395.

Elliott, G., Kao, S., & Grant, A. M. (2004). Mattering: Empirical validation of a social-psychological concept. *Self and Identity*, *3*, 339-354.

Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*, 121-138.

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relations. *Journal of Personality and Social Psychology, 58,* 281–291.

Fleeson, W. (2001). Towards a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology*, *80*, 1011-1027.

Frijda, N. H. (1986). *The emotions*. New York, NY: Cambridge University Press.

Fulmer, C. A., Gelfand, M. J., Kruglanski, A. W., Kim-Prieto, C., Diener, E., Pierro, A., & Higgins, E. T. (2011). On "feeling right" in cultural contexts: How person-culture

match affects self-esteem and subjective well-being. *Psychological Science, 21,* 1563-1569.

Funder, D. C., & Colvin, C. R. (1988). Friends and strangers: Acquaintanceship, agreement, and the accuracy of personality judgment. *Journal of Personality and Social Psychology, 55,* 149-158.

Gebauer, J. E., Bleidorn, W., Gosling, S. D., Rentfrow, P. J., Lamb, M., & Potter, J. (in press). Cross-cultural variations in Big Five relations with religiosity: A socio-cultural motives perspective. *Journal of Personality and Social Psychology.*

Gebauer, J. E., Leary, M. R., & Neberich, W. (2012). Unfortunate first names: Effects of name- based relational devaluation and interpersonal neglect. *Social Psychological and Personality Science, 3,* 590-596.

Gebauer, J. E., Paulhus, D. L., & Neberich, W. (2013). Big Two personality and religiosity across cultures: Communals as religious conformists and agentics as religious contrarians. *Social Psychological and Personality Science, 4,* 21-30.

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.

Gebauer, J. E., Sedikides, C., Lüdtke, O., & Neberich, W. (2014). Agency-communion and interest in prosocial behavior: Social motives for conformity and deviance explain socio-contextual inconsistencies. *Journal of Personality, 82*, 452-466.

Gebauer, J. E., Wagner, J., Sedikides, C., & Neberich, W. (2013). Agency-communion and self-esteem relations are moderated by culture, religiosity, age, and sex: Evidence for the "Self-Centrality Breeds Self-Enhancement" principle. *Journal of Personality, 81,* 261-275.

Gecas, V., & Schwalbe, M. L. (2983). Beyond the looking-glass self: Social structure and efficacy-based self-esteem. *Social Psychology Quarterly, 46,* 77-88.

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.

Goodwin, R., Marshall, T., Fulop, M., Adonu, J., Spiewak, S., Neto, F., & Hernandez Plaza, S. (2012). Mate value and self-esteem: Evidence from eight cultural groups. *PLoS ONE*, *7*, e36106.

Graziano, W. G., Bruce, J., Sheese, B. E., & Tobin, R. A. (2007). Attraction, personality, and prejudice: Liking none of the people most of the time. *Journal of Personality and Social Psychology, 93,* 565-582.

Graziano, W. G., Hair, E. C., & Finch, J. F. (1997). Competitiveness mediates the link between personality and group performance. *Journal of Personality and Social Psychology, 73,* 1394-1408.

Graziano, W. G., Jensen-Campbell, L. A., & Finch, J. F. (1997). The self as a mediator between personality and adjustment. *Journal of Personality and Social Psychology, 73***,** 392-404.

Graziano, W. G., & Tobin, R. M. (2009). Agreeableness. In M. Leary & R. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 46-61). New York, NY: Guilford.

Graziano, W. G., & Tobin, R. M. (2013). The cognitive and motivational foundations underlying agreeableness. In M. D. Robinson, E. R. Watkins, & E. Harmon-Jones (Eds.), *Handbook of cognition and emotion* (pp. 347-364). New York, NY: Guilford.

Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and cultural refinements. *Advances in Experimental Social Psychology, 29*, 61-139.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511-524.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60,* 895-910.

Higgins, E. T., Klein, R., & Strauman, T. (1985). Self-concept discrepancy theory: A psychological model for distinguishing among different aspects of depression and anxiety. *Social Cognition*, *3*, 51-76.

Hogan, R. (1983). A socioanalytic theory of personality. In M. M. Page (Ed., *Nebraska symposium on motivation* (Vol. 29, pp. 55-89). Lincoln, NE: University of Nebraska Press.

Hogan, R., Hogan, J., & Roberts, B. W. (1996). Personality and employment decisions. *American Psychologist, 51,* 469-477.

Hogan, R., & Roberts, B. W. (2004). A socioanalytic model of maturity. *Journal of Career Assessment, 12,* 207-217.

Horn, J. L., & McArdle, J. J. (1992). A practical and theoretical guide to measurement invariance in aging research. *Experimental Aging Research, 18,* 117-144.

Huttemann, R., Nestler, S, Wagner, J., Egloff, B., & Back, M. D. (in press). Wherever I may roam: Processes of self-esteem development from adolescence to emerging adulthood in the context of international mobility. *Journal of Personality and Social Psychology.*

James, W. (1907). *The principles of psychology* (Vol. 1). New York, NY: Holt.

Jardine, R., Martin, N. G., Henderson, A. S., & Rao, D. C. (1984). Genetic covariation between neuroticism and the symptoms of anxiety and depression. *Genetic Epidemiology*, *1*, 89-107.

John, O. P. (1990). The "Big Five" factor taxonomy: Dimensions of personality in the natural language and questionnaires. In L. A. Pervin (Ed.) *Handbook of personality: Theory and research* (pp. 66-100) New York, NY: Guilford Press.

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

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O.P. John, R.W. Robins, & L.A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114–158). New York, NY: Guilford.

Jorm, A. F. (1989). Modifiability of trait anxiety and neuroticism: A meta-analysis of the literature. *Australian and New Zealand Journal of Psychiatry*, *23*, 21-29.

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology, 83,* 693-710.

Kandler, C., & Riemann, R. (2013). Genetic and environmental sources of individual religiousness: The roles of individual personality traits and perceived environmental religiousness. *Behavior Genetics, 43,* 297-313.

Kavanagh, P. S., Robins, S., & Ellis, B. J. (2010). The mating sociometer: A regulatory mechanism for mating aspirations. *Journal of Personality and Social Psychology, 99,* 120-132.

Kenny, D. A., & McCoach, D. B. (2003). Effect of the number of variables on measures of fit in Structural Equation Modeling. *Structural Equation Modeling, 10,* 333-351.

King, L. A. (1995). Wishes, motives, goals, and personal memories: Relations and correlates of measures of human motivation. *Journal of Personality, 63,* 985-1007.

King, L. A., & Broytes, S. (1997). Wishes, gender, personality, and well-being. *Journal of Personality, 65,* 50-75.

Kirkpatrick, L. A., & Ellis, B. J. (2001). Evolutionary perspectives on self-evaluation and self-esteem. In G. Fletcher, M. Clark, (Eds.), *The Blackwell handbook of social psychology: Vol. 2: Interpersonal processes* (pp. 411–436). Oxford, England: Blackwell.

Kitayama, S., & Markus, H. R. (2000). The pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 113-161). Cambridge, MA: MIT Press.

Küfner, A. C. P., Nestler, S., & Back M. D. (2013). The two pathways to being an (un-)popular narcissist. *Journal of Personality, 81,* 184-195.

Kwan, V. S. Y., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relation harmony to self-esteem. *Journal of Personality and Social Psychology, 73,* 1038-1051.

Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relations. *Psychology and Aging, 17,* 125-139.

Leary, M. R. (1990). Responses to social exclusion: Social anxiety, jealousy, loneliness, depression, and low self-esteem. *Journal of Social and Clinical Psychology, 9,* 221–229.

Leary, M. R. (2004). The function of self-esteem in terror management theory and sociometer theory: Comment on Pyszczynski et al. (2004). *Psychological Bulletin, 130,* 478-482.

Leary, M. R. (2006). Sociometer theory and the pursuit of relational value: Getting to the root of self-esteem. *European Review of Social Psychology, 16,* 75-111.

Leary, M. R. (2010). Social anxiety as an early warning system: A refinement and extension of the self-presentation theory of social anxiety. In S. G. Hofmann and P. M. DiBartolo (Eds.), *Social anxiety* (pp. 472-489). London, UK: Elsevier.

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, *32*, 1-62.

Leary, M. R., Cottrell, C. A., & Phillips, M. (2001). Deconfounding the effects of dominance and social acceptance on self-esteem. *Journal of Personality and Social Psychology, 81,* 898-909.

Leary, M. R., & Downs, D. L. (1995). Interpersonal functions of the self-esteem motive: The self-esteem system as a sociometer. In M. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 123-144). New York: Plenum Press.

Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two component model. *Psychological Bulletin, 107,* 34-47.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, *68*, 518-530.

Leary, T. (1957). *Interpersonal diagnosis of personality.* New York, NY: Ronald Press.

Lehnart, J., Neyer, F. J., & Eccles, J. (2010). Long-term effects of social investment: The case of partnering in young adulthood. *Journal of Personality, 78*, 639-669.

Little, T. D. (1997). Mean and covariance structures (MACS) analyses of cross-cultural data: practical and theoretical issues. *Multivariate Behavioral Research, 32,* 53-76.

Luo, S., & Klohnen, E. C. (2005). Assortative mating and marital quality in newlyweds: A couple-centered approach. *Journal of Personality and Social Psychology*, *88*, 304-326.

MacDonald, G., & Leary, M. R. (2012). Individual differences in self-esteem: A review and theoretical integration. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 354-377). New York, NY: Guilford.

MacDonald, G., Saltzman, J. L., & Leary, M. R. (2003). Social approval and trait self-esteem. *Journal of Research in Personality, 37,* 23-40.

Matthews, G. (2004). Neuroticism from the top down: Psychophysiology and negative emotionality. In R. M. Stelmack (Ed.), *On the psychobiology of personality: Essays in honor of Marvin Zuckerman* (pp. 249–266). New York, NY: Elsevier Science.

McClelland, D. L. (1985). How motives, skills, and values determine what people do. *American Psychologist, 40,* 812-825.

McCrae, R. R. (2002). NEO-PI-R data from 36 cultures: Further intercultural comparisons. In R.R. McCrae & J. Allik. (Eds.), *The Five-Factor Model of personality across cultures* (pp. 105-125). New York, NY: Kluwer Academic/Plenum Publishers.

McCrae, R. R., & Costa, P. T. (1989). The structure of interpersonal traits: Wiggins's circumplex and the five-factor model. *Journal of Personality and Social Psychology*, *56,* 586-595.

McCrae, R. R., Costa, P. T. Jr., & Yik, M. S. M. (1996). Universal aspects of Chinese personality structure. In M. H. Bond (Ed.), *The handbook of Chinese psychology* (pp. 189–207). Hong Kong: Oxford University Press.

McGaw, B., & Joreskog, K.G. (1971). Factorial invariance of ability measures in groups differing in intelligence and socio-economic status. *British Journal of Mathematical and Statistical Psychology, 24,* 154-168.

Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology, 90,* 862-877.

Melzack, R., & Casey, K. L. (1968). Sensory, motivational, and control determinants of pain: a new conceptual model. In D. Kenshalo (Ed.), *The skin senses* (pp. 423-443). Springfield, IL: Thomas.

Mikulincer, M. (1995). Attachment style and the mental representation of the self. *Journal of Personality and Social Psychology, 69,* 1203-1215.

Moretti, M. M., & Higgins, E. T. (1990). Relating self-discrepancy to self-esteem: The contribution of discrepancy beyond actual self-ratings. *Journal of Experimental Social Psychology, 26,* 108-123.

Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113,* 99-128.

Neiss, M. B., Stevenson, J., Sedikides, C., Kumashiro, M., Finkel, E., J., & Rusbult, C. E. (2005). Executive self, self-esteem, and negative affectivity: Relations at the phenotypic and genotypic level. *Journal of Personality and Social Psychology*, *89*, 593-606.

Neyer, F. J., & Lehnart, J. (2007). Relations matter in personality development: Evidence from an 8-year longitudinal study across young adulthood. *Journal of Personality, 75,* 535-568.

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

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128,* 3-72.

Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57,* 401-421.

Paulhus, D. L. (1998). Interpersonal adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology, 74,* 1197-1208.

Paulhus, D. L. (2001). Normal narcissism: Two minimalist views. *Psychological Inquiry, 12,* 228-230.

Paulhus, D. L. (2002). Socially desirable responding: The evolution of a construct. In H. Braun, D. N. Jackson, & D. E. Wiley (Eds.), *The role of constructs in psychological and educational measurement* (pp. 67-88). Hillsdale, NJ: Lawrence Erlbaum.

Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic bias in self-perceptions: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality, 66,* 1025-1060.

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, and R. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224–239). New York, NY: Guilford Press.

Paunonen, S. V. (2003). Big Five factors of personality and replicated prediction of behavior. *Journal of Personality and Social Psychology, 84,* 411-424.

Platt, J. R. (1964). Strong inference. *Science, 146*, 347-353.

Price, D. D., Harkins, S. W., & Baker, C. (1987). Sensory-affective relations among different types of clinical and experimental pain. *Pain, 28,* 297-307.

Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem: A theoretical and empirical review. *Psychological Bulletin, 130*, 435-468.

Raju, N. S., Laffitte, L. J., & Byrne, B. M. (2002). Measurement equivalence: a comparison of methods based on confirmatory factor analysis and item response theory. *Journal of Applied Psychology*, *87*, 517-529.

Rammstedt, B. (1997). Die deutsche Version des Big Five Inventory (BFI): Übersetzung und Validierung eines Fragebogens zur Erfassung des Fünf-Faktoren-Modells der Persönlichkeit. [The German version of the Big Five Inventory (BFI): Translation and validation of a questionnaire assessing the Five Factor Model of personality]. Unpublished diploma thesis. University of Bielefeld, Germany.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R. T., & du Toit, M. (2011). *HLM 7: Hierarchical linear and nonlinear modeling* [Computer software]. Chicago, IL: Scientific Software International.

Reis, H. T. (1990). The role of intimacy in interpersonal relations. *Journal of Social and Clinical Psychology, 9,* 15-30.

Roberts, B. W., & Jackson, J. J. (2008). Sociogenomic personality psychology. Journal of Personality, 76, 1523–1544.

Roberts, B. W., & Robins, R. W. (2001). Broad dispositions, broad aspirations: The intersection of personality traits and major life goals. *Personality and Social Psychology Bulletin*, *26*, 1284-1296.

Roberts, J. E., Gotlib, I. H., & Kassel, J. D. (1996). Adult attachment security and symptoms of depression: The mediating roles of dysfunctional attitudes and low self-esteem. *Journal of Personality and Social Psychology, 70,* 310-320.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001a). 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.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rubin, M., & Hewstone, M. (1998). Social identity theory's self-esteem hypothesis: A review and some suggestions for clarification. *Personality and Social Psychology Review, 2*, 40-62. doi: 10.1207/s15327957pspr0201_3

Saroglou, V. (2010). Religiousness as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review*, *14*, 108-125.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*, 1063-1078.

Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization and model. *Psychological Bulletin, 92,* 641–669.

Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89,* 623-642.

Schmitt, D. P., Allik, J., McCrae, R. R., & Benet-Martinez, V. (2007). The geographic distribution of Big Five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology, 38,* 173-212.

Schmutte, P. S., & Ryff, C. D. (1997). Personality and well-being: Reexamining methods and meanings. *Journal of Personality and Social Psychology*, *73*, 540-559.

Schwartz, S. H. (1994). Beyond individualism/collectivism: New cultural dimensions of values. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. C. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, methods, and applications* (pp. 85-119). Thousand Oaks: Sage Publications.

Sedikides, C., Gaertner, L., Luke, M. A., O'Mara, E. M., & Gebauer, J. (2013). A three-tier hierarchy of motivational self-potency: Individual self, relational self, collective self. *Advances in Experimental Social Psychology, 48*, 235-295.

Sedikides, C., Gaertner, L., & Toguchi, Y. (2003). Pancultural self-enhancement. *Journal of Personality and Social Psychology, 84,* 60-79.

Sedikides, C., & Gregg, A. P. (2003). Portraits of the self. In M. A. Hogg & J. Cooper (Eds.), *Sage handbook of social psychology* (pp. 110-138). London, England: Sage Publications.

Sedikides, C., & Skowronski, J. A. (1997). The symbolic self in evolutionary context. *Personality and Social Psychology Review, 1*, 80-102.

Sedikides, C., & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. *Advances in Experimental Social Psychology*, *29*, 209-269.

Shadish, W. R., & Haddock, C. K. (1994). Combining estimates of effect sizes. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 261-281). New York, NY: Russell Sage Foundation.

Soto, C. J., & John, O. P. (2009). Ten facet scales for the Big Five Inventory: Convergence with NEO PI-R facets, self-peer agreement, and discriminant validity. *Journal of Research in Personality, 43,* 84-90.

Stinson, D. A., Logel, C., Zanna, M. P., Holmes, J. G., Cameron, J. J., Wood, J. V., & Spencer, S. J. (2008). The cost of lower self-esteem: Testing a self- and social-bonds model of health. *Journal of Personality and Social Psychology, 94,* 412-428.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24) Chicago, MI: Nelson-Hall Publishers.

Teppers, E., Klimstra, T., Van Damme, C., Luyckx, K., Vanhalst, J., & Goossens, L. (2013). Personality traits, loneliness, and attitudes to being alone in adolescence. *Journal of Social and Personal Relationships, 30*, 1045-1063.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. *Advances in Experimental Social Psychology, 21*, 181-222.

Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology, 59,* 781-790.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38,* 1–10.

Twenge, J. M. (2000). The age of anxiety? The birth cohort change in anxiety and neuroticism, 1952–1993. *Journal of Personality and Social Psychology, 79,* 1007-1021.

Vazire, S., & Mehl, M. R. (2008). Knowing me, knowing you: The accuracy and unique predictive validity of self-ratings and other-ratings of daily behavior. *Journal of Personality and Social Psychology, 95,* 1202-1216.

Wagner, J., Lüdtke, O., Roberts, B. W., & Trautwein, U. (2014). Who Belongs to Me? Social Relationship and Personality Characteristics in the Transition to Young Adulthood. *European Journal of Personality*, n/a–n/a. doi:10.1002/per.1974

Watson, D., & Clark, L A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96,* 465-494.

Wiggins, J. S., & Pincus, H. A. (1992). Personality: structure and assessment. *Annual Review of Psychology, 43,* 473-504.

Wilt, J., & Revelle, W. (2009). Extraversion. In M. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 27-45). New York, NY: Guilford Press.

Wojciszke, B., Baryla, W., Parzuchowski, M., Szymkow, A., & Abele, A. E. (2011). Self-esteem is dominated by agentic over communal information. *European Journal of Social Psychology*, *40*, 1-11.

Wood, D., Gosling, S. D., & Potter, J. (2007). Normality evaluations and their relation to personality traits and well-being. *Journal of Personality and Social Psychology, 93,* 861-879.

Wood, D., Harms, P., & Vazire, S. (2010). Perceiver effects as projective tests: What your perceptions of others say about you. *Journal of Personality and Social Psychology, 99,* 174-190.

Table 1. Demographics, country-level indices, and simultaneous regressions on self-esteem and N for each of the 101 countries in Study 1.

		age		sex	country-level indices						simultaneous regressions on self-esteem					simultaneous regressions on N				
Country	*N*	*M*	*SD*	% ♀	E	A	C	O	N	Se	E	A	C	O	N	E	A	C	O	Se
ABC-Islands	1,094	28.1	11.9	72.2	3.39	3.48	3.45	3.71	3.15	3.46	.26**	-0.06*	.17**	.05	-.29**	-.03	-.24**	-.10**	.04	-.30**
Afghanistan	411	30.3	15.9	46.8	3.25	3.46	3.35	3.69	2.97	3.40	.22**	.10*	.01	.06	-.35**	-.19**	-.16**	-.18**	.03	-.33**
Albania	535	26.4	15	59.9	3.26	3.56	3.35	3.77	3.02	3.37	.26**	-0.04	.18**	.15**	-.25**	-.06	-.19**	-.13**	.13**	-.27**
Andorra	352	25.9	10.8	65	3.30	3.51	3.34	3.73	3.05	3.15	.34**	-0.02	.03	.14**	-.33**	-.05	-.23**	-.13**	.07	-.37**
Argentina	70,004	23.4	8.68	72.9	3.28	3.41	3.24	3.74	3.36	3.06	.29**	-.09**	.11**	.10**	-.30**	.05**	-.22**	-.04**	.03**	-.33**
Armenia	678	24.6	9.95	72.7	3.31	3.44	3.29	3.75	3.27	3.14	.30**	-.12**	.14**	.03	-.32**	-.03	-.15**	.00	.03	-.36**
Australia	62,278	25.2	10.8	55.9	3.26	3.60	3.37	3.74	2.96	3.24	.30**	-.07**	.11**	.08**	-.41**	-.09**	-.22**	-.09**	.03**	-.44**
Austria	9,290	26.7	10.7	59.2	3.40	3.43	3.42	3.79	3.02	3.38	.40**	-.12**	.08**	.07**	-.33**	-.06**	-.22**	-.12**	.06**	-.38**
Bahamas	533	25	11.9	68.3	3.23	3.66	3.53	3.74	2.94	3.68	.28**	.00	.18**	.01	-.29**	-.05	-.25**	-.13**	.00	-.3**
Bahrain	429	24.7	10.9	65.2	3.21	3.59	3.35	3.75	3.22	3.52	.24**	.05	.13**	.11*	-.16**	-.16**	-.17**	-.15**	.08	-.16**
Bangladesh	607	24.4	10.6	45.2	3.14	3.57	3.29	3.67	3.07	3.69	.19**	.03	.17**	.09*	-.16**	-.26**	-.22**	-.17**	.03	-.15**
Barbados	329	28.1	11.7	66.6	3.16	3.55	3.52	3.72	3.04	3.40	.18**	-.02	.28**	.07	-.40**	-.05	-.31**	-.04	.06	-.41**
Belgium	15,066	26.4	10.7	57.1	3.34	3.49	3.35	3.65	3.04	3.00	.23**	-.14**	.09**	.14**	-.32**	-.11**	-.24**	-.08**	.02*	-.32**
Belize	306	25.4	12.9	61	3.21	3.54	3.43	3.66	3.08	3.43	.22**	.09	.21**	.25**	-.13*	-.38**	-.25**	-.13*	.06	-.12*
Bolivia	3773	23.1	7.32	65.6	3.19	3.37	3.27	3.8	3.28	3.35	.30**	-.02	.17**	.12**	-.27**	.00	-.16**	-.07**	.02	-.32**
Bosnia-Herzegovina	372	25.4	8.29	62	3.40	3.54	3.42	3.85	3.03	3.60	.33**	-.18**	.12*	.13**	-.23**	-.16**	-.20**	-.19**	.14**	-.24**
Brazil	4,453	28	10.5	36.4	3.14	3.53	3.42	3.83	2.98	3.38	.24**	-.07**	.20**	.07**	-.33**	-.02	-.34**	-.05**	.07**	-.33**
Brunei Darussalam	313	23.5	10.7	65.8	3.09	3.6	3.08	3.60	3.22	3.31	.19**	.01	.13*	.20**	-.23**	-.11*	-.22**	-.31**	.09	-.21**
Bulgaria	1,017	23	7.72	61.8	3.26	3.48	3.27	3.89	3.1	3.35	.33**	-.15**	.12**	.14**	-.17**	-.19**	-.20**	-.20**	.10**	-.18**
Canada	118,455	24.6	10.6	58.7	3.25	3.63	3.42	3.73	2.97	3.30	.27**	-.07**	.13**	.09**	-.41**	-.07**	-.22**	-.08**	.02**	-.43**
Chile	32,882	23.3	9.33	72.8	3.25	3.43	3.40	3.88	3.16	3.30	.31**	-.06**	.15**	.08**	-.31**	-.01*	-.19**	-.10**	.02**	-.35**
China	6,554	27.6	7.92	61.3	3.08	3.66	3.45	3.50	2.90	3.63	.11**	-.03*	.11**	.12**	-.07**	-.20**	-.27**	-.24**	.00	-.05**
Colombia	21,576	22.6	8.02	70.9	3.28	3.47	3.40	3.87	3.16	3.60	.27**	-.04**	.15**	.11**	-.31**	-.01	-.22**	-.05**	.03**	-.34**
CostaRica	3,741	23.8	8.6	67.7	3.31	3.44	3.43	3.86	3.14	3.50	.27**	-.03	.14**	.10**	-.34**	.07**	-.18**	-.02	.01	-.38**
Croatia	1,991	23.2	7.29	59.2	3.32	3.49	3.32	3.83	3.00	3.34	.29**	-.17**	.14**	.10**	-.29**	-.13**	-.28**	-.16**	.07**	-.28**
Cuba	632	27.3	10.1	72.1	3.42	3.60	3.46	3.97	3.17	3.67	.24**	-.10**	.16**	.22**	-.34**	.04	-.21**	-.07	.14**	-.39**
Cyprus	820	26.1	10.1	66.3	3.26	3.60	3.45	3.78	3.14	3.31	.37**	-.11**	.13**	.08**	-.30**	-.07	-.24**	-.07*	.08**	-.35**
Czech Republic	865	24.7	8.99	46.1	3.16	3.41	3.29	3.85	2.94	3.35	.26**	-.13**	.11**	.18**	-.29**	-.10**	-.22**	-.16**	.12**	-.3**
Denmark	6,126	27	9.71	42.9	3.30	3.58	3.41	3.79	2.74	3.42	.29**	-.16**	.09**	.12**	-.37**	-.12**	-.22**	-.11**	.06**	-.38**
Dominican Republic	4,050	23	7.83	75.6	3.23	3.61	3.47	3.90	3.12	3.56	.25**	-.01	.16**	.10**	-.33**	.02	-.19**	-.12**	.07**	-.36**
Ecuador	4,082	24	8.4	67.5	3.24	3.50	3.40	3.83	3.20	3.52	.29**	-.01	.15**	.11**	-.28**	-.05**	-.17**	-.05**	.03	-.32**

Egypt	2,227	23.2	7.32	67.9	3.20	3.72	3.38	3.72	3.33	3.48	.23**	-.06**	.22**	.13**	-.22**	-.09**	-.18**	-.07**	.00	-.25**
El Salvador	2,241	23.6	7.92	67.9	3.24	3.43	3.40	3.86	3.20	3.54	.27**	-.01	.13**	.11**	-.32**	.00	-.22**	-.05*	.03	-.35**
Estonia	795	22.2	7.94	63.9	3.05	3.35	3.17	3.83	3.13	3.31	.34**	-.21**	.16**	.10**	-.26**	-.17**	-.22**	-.07*	.07*	-.29**
Finland	9,252	24.1	8.37	56.4	3.09	3.47	3.25	3.76	3.02	3.26	.29**	-.09**	.11**	.14**	-.42**	-.06**	-.21**	-.08**	.08**	-.45**
France	5,668	27.4	10.2	53.8	3.21	3.53	3.36	3.87	2.97	3.09	.23**	-.20**	.09**	.15**	-.29**	-.1**	-.29**	-.13**	.06**	-.28**
Germany	81,179	28.1	10.9	57.2	3.35	3.41	3.4	3.75	3.08	3.29	.42**	-.13**	.06**	.07**	-.33**	-.02**	-.21**	-.11**	.07**	-.41**
Greece	3,051	25.8	8.35	62.6	3.23	3.60	3.29	3.89	3.20	3.22	.30**	-.15**	.15**	.11**	-.31**	-.05**	-.28**	-.06**	.04*	-.34**
Guatemala	3,355	23.8	7.8	67.2	3.22	3.45	3.37	3.82	3.20	3.49	.25**	-.01	.14**	.10**	-.33**	-.06**	-.17**	-.05**	.03	-.36**
Honduras	1,462	24.4	7.69	72.7	3.23	3.50	3.48	3.86	3.16	3.56	.29**	-.06**	.15**	.09**	-.36**	.07**	-.20**	-.03	.02	-.41**
Hong Kong	4,345	25.9	9.21	65.9	3.12	3.55	3.28	3.42	3.07	3.43	.19**	-.08**	.17**	.10**	-.17**	-.2**	-.26**	-.20**	.01	-.14**
Hungary	1,271	26	8.77	56.8	3.22	3.47	3.39	3.85	3.00	3.30	.28**	-.17**	.07**	.13**	-.34**	-.12**	-.28**	-.12**	.12**	-.33**
Iceland	768	25.6	9.48	50.8	3.18	3.58	3.35	3.78	2.85	3.26	.35**	-.09**	.18**	.09**	-.31**	-.05	-.24**	-.15**	.02	-.34**
India	21,173	24.8	7.15	48.6	3.27	3.71	3.37	3.73	3.03	3.89	.14**	-.04**	.20**	.18**	-.13**	-.19**	-.22**	-.21**	-.01	-.12**
Indonesia	2,916	24.2	7.76	58.1	3.25	3.54	3.26	3.66	3.06	3.58	.22**	-.06**	.13**	.19**	-.19**	-.13**	-.28**	-.23**	.05**	-.17**
Iran	1,041	25.5	7.62	57.4	3.09	3.64	3.41	3.71	3.12	3.54	.19**	-.07*	.18**	.21**	-.23**	-.11**	-.31**	-.10**	.05*	-.23**
Ireland	11,704	24.3	8.83	57.1	3.29	3.64	3.36	3.69	3.00	3.07	.29**	-.11**	.12**	.10**	-.39**	-.13**	-.22**	-.08**	.03**	-.41**
Israel	2,605	27.1	10.4	55.9	3.17	3.59	3.46	3.84	3.01	3.28	.27**	-.11**	.15**	.15**	-.32**	-.09**	-.30**	-.15**	.06**	-.31**
Italy	4,572	29.5	10.2	54.2	3.22	3.55	3.47	3.86	2.94	3.32	.27**	-.15**	.09**	.13**	-.34**	-.07**	-.29**	-.17**	.08**	-.33**
Jamaica	811	26.2	9.83	75.9	3.15	3.72	3.61	3.73	3.00	3.60	.19**	-.08*	.28**	.07*	-.38**	-.13**	-.28**	-.04	.03	-.39**
Japan	4,011	26.8	9.64	55	3.18	3.55	3.35	3.73	2.97	3.33	.25**	-.07**	.10**	.13**	-.29**	-.11**	-.24**	-.15**	.04*	-.29**
Jordan	580	24.2	7.64	62.7	3.24	3.65	3.53	3.74	3.16	3.74	.18**	-.03	.22**	.23**	-.22**	-.13**	-.20**	-.12**	.10**	-.24**
Kenya	644	26.9	8.37	61.6	3.27	3.70	3.70	3.79	2.81	3.69	.36**	.05	.22**	.11**	-.18**	-.14**	-.28**	-.14**	-.08*	-.20**
Kuwait	592	24.9	9.14	61.7	3.14	3.77	3.45	3.74	3.14	3.63	.24**	-.08*	.27**	.09*	-.18**	-.17**	-.23**	-.21**	.04	-.19**
Latvia	502	24	7.08	61.9	3.19	3.47	3.27	3.76	2.96	3.47	.37**	-.14**	.21**	.03	-.15**	-.22**	-.19**	-.10*	.12**	-.16**
Lebanon	1,171	23.5	7.22	59.4	3.31	3.63	3.51	3.79	3.20	3.77	.25**	-.11**	.17**	.12**	-.21**	-.01	-.22**	-.20**	.03	-.22**
Lithuania	470	23.3	7.55	65.8	3.11	3.40	3.26	3.74	3.13	3.43	.26**	-.07	.10*	.12**	-.23**	-.19**	-.17**	-.07	.03	-.24**
Luxembourg	397	28.1	11.8	59.3	3.24	3.45	3.29	3.81	3.11	3.14	.35**	-.13**	.14**	.11*	-.34**	-.02	-.27**	-.12*	.06	-.38**
Malaysia	9,137	23.3	7.48	65.5	3.16	3.59	3.17	3.56	3.10	3.46	.25**	-.04**	.21**	.15**	-.22**	-.15**	-.27**	-.17**	.03**	-.22**
Malta	460	25.3	9.79	58	3.22	3.65	3.31	3.76	3.17	3.08	.34**	-.09*	.10*	.11**	-.33**	-.10*	-.21**	-.12**	.10**	-.36**
Mauritius	443	24.2	8.07	57.1	3.33	3.60	3.43	3.75	3.07	3.56	.20**	.08	.12**	.19**	-.24**	-.14**	-.18**	-.18**	-.01	-.25**
Mexico	82,928	22.8	7.54	65.7	3.18	3.39	3.33	3.82	3.19	3.43	.27**	-.02**	.14**	.12**	-.34**	.00	-.17**	-.08**	.02**	-.38**
Morocco	303	23.5	8.51	64.8	3.16	3.59	3.36	3.77	3.12	3.47	.25**	-.09	.14*	.08	-.19**	-.02	-.25**	-.18**	.11*	-.19**
Netherlands	73,856	29.8	11.8	61.8	3.43	3.56	3.46	3.62	2.90	3.14	.25**	-.12**	.06**	.13**	-.35**	-.16**	-.23**	-.10**	.04**	-.35**
Netherlands Antilles	350	30	12.3	60.3	3.35	3.52	3.49	3.73	2.97	3.33	.27**	.04	.04	.10*	-.26**	-.12*	-.23**	-.06	.00	-.27**
New Zealand	15,480	26.5	11.9	61.5	3.27	3.62	3.42	3.73	2.93	3.25	.27**	-.08**	.11**	.09**	-.41**	-.11**	-.25**	-.08**	.03**	-.42**
Nicaragua	1,282	24.6	8.13	74.2	3.26	3.48	3.44	3.81	3.17	3.65	.26**	.01	.17**	.10**	-.30**	.01	-.12**	-.01	-.06*	-.35**
Nigeria	623	27.9	7.37	51.1	3.12	3.79	3.61	3.76	2.80	3.87	.22**	.00	.22**	.13**	-.24**	-.21**	-.24**	-.19**	.08*	-.23**

Norway	12,974	27.3	10.3	56.4	3.27	3.66	3.45	3.70	2.81	3.22	.29**	-.12**	.09**	.15**	-.37**	-.11**	-.21**	-.15**	.09**	-.38**
Pakistan	4,103	23.2	6.84	53.1	3.19	3.72	3.37	3.65	3.19	3.83	.12**	.00	.19**	.16**	-.06**	-.23**	-.18**	-.20**	.03	-.06**
Panama	1,603	24.7	9.49	69.8	3.31	3.54	3.45	3.94	3.09	3.72	.31**	-.03	.13**	.13**	-.29**	-.01	-.24**	-.14**	.00	-.32**
Paraguay	1,859	23.7	8.36	69.8	3.28	3.43	3.40	3.80	3.26	3.44	.26**	.00	.12**	.14**	-.29**	.07**	-.19**	-.03	.04	-.33**
Peru	13,566	23.4	8.36	68.1	3.25	3.45	3.36	3.84	3.17	3.46	.27**	-.03**	.16**	.13**	-.30**	-.03**	-.15**	-.12**	.03**	-.34**
Philippines	19,147	21.4	6.55	74.5	3.17	3.63	3.28	3.73	3.12	3.43	.29**	-.03**	.20**	.16**	-.23**	-.11**	-.23**	-.22**	.05**	-.24**
Poland	2,667	23.8	7.62	52.4	3.05	3.36	3.15	3.82	3.12	3.25	.24**	-.18**	.09**	.20**	-.32**	-.17**	-.21**	-.11**	.12**	-.32**
Portugal	2,191	25.1	8.71	48.2	3.09	3.59	3.23	3.90	3.12	3.02	.31**	-.15**	.12**	.06**	-.41**	-.08**	-.22**	-.09**	.09**	-.44**
Puerto Rico	681	25.5	10.1	61.1	3.34	3.69	3.52	3.97	3.02	3.65	.37**	.05	.17**	.08*	-.31**	.06	-.14**	-.10**	-.04	-.40**
Qatar	366	26.7	9.92	60.6	3.24	3.72	3.38	3.70	3.10	3.54	.26**	-.05	.13*	.11*	-.22**	-.05	-.21**	-.23**	.01	-.22**
Romania	3,218	23.4	7.4	63.5	3.20	3.49	3.29	3.93	3.06	3.35	.29**	-.17**	.12**	.10**	-.27**	-.13**	-.25**	-.17**	.05**	-.26**
Russia	1,282	25.2	8.74	62.8	3.21	3.42	3.36	3.75	3.04	3.53	.22**	-.13**	.17**	.13**	-.22**	-.15**	-.21**	-.20**	.10**	-.22**
Saudi Arabia	1,197	25.7	9.5	53.1	3.18	3.75	3.42	3.72	3.11	3.65	.17**	-.06*	.22**	.15**	-.29**	-.13**	-.22**	-.15**	.08**	-.30**
Serbia-Montenegro	1,432	24.5	7.33	57.1	3.26	3.48	3.31	3.90	3.13	3.41	.30**	-.20**	.17**	.15**	-.24**	-.16**	-.25**	-.13**	.13**	-.26**
Singapore	11,193	22.3	7.68	61.3	3.14	3.51	3.12	3.58	3.11	3.32	.25**	-.06**	.18**	.11**	-.24**	-.18**	-.26**	-.15**	.00	-.24**
Slovak Republic	398	23.8	8.87	59.6	3.24	3.56	3.33	3.83	2.92	3.13	.37**	-.16**	.05	.08	-.24**	-.16**	-.26**	-.16**	.01	-.24**
Slovenia	907	23.9	8.45	48.3	3.26	3.44	3.27	3.89	2.96	3.31	.31**	-.16**	.15**	.15**	-.31**	-.13**	-.18**	-.16**	.04	-.35**
South Africa	5,880	27.9	10.4	60.5	3.26	3.6	3.51	3.80	2.97	3.35	.30**	-.05**	.13**	.10**	-.37**	-.09**	-.24**	-.11**	.00	-.39**
South Korea	2,382	27.3	8.19	42.8	3.17	3.59	3.43	3.65	2.92	3.56	.20**	-.05*	.17**	.07**	-.27**	-.15**	-.31**	-.09**	.02	-.25**
Spain	105,233	23.6	8.7	69.9	3.31	3.56	3.24	3.72	3.16	3.06	.31**	-.10**	.09**	.09**	-.38**	.07**	-.22**	-.07**	.03**	-.42**
Sri Lanka	498	26	9.53	53.5	3.25	3.70	3.40	3.78	3.04	3.64	.15**	-.06	.18**	.21**	-.16**	-.23**	-.18**	-.16**	.07	-.16**
Sweden	13,333	27.1	10.4	52.6	3.27	3.59	3.40	3.78	2.83	3.33	.31**	-.14**	.10**	.12**	-.40**	-.06**	-.22**	-.11**	.09**	-.43**
Switzerland	13,408	29	12.5	55.8	3.45	3.56	3.54	3.75	2.86	3.45	.36**	-.13**	.06**	.08**	-.32**	-.06**	-.22**	-.15**	.07**	-.35**
Taiwan	1,261	26.4	9.11	60.9	3.13	3.55	3.34	3.58	3.00	3.57	.18**	-.11**	.21**	.13**	-.15**	-.27**	-.24**	-.19**	.04	-.13**
Thailand	2,005	25.7	9.56	59.9	3.21	3.62	3.41	3.64	2.95	3.51	.26**	-.04	.20**	.13**	-.16**	-.20**	-.29**	-.18**	.07**	-.15**
Trinidad and Tobago	747	25.1	8.93	68	3.14	3.64	3.47	3.79	3.01	3.43	.23**	-.08*	.21**	.07*	-.39**	-.07*	-.25**	-.14**	.03	-.39**
Turkey	1,630	25.5	8.28	51.1	3.27	3.58	3.45	3.84	3.03	3.65	.34**	-.04	.16**	.14**	-.20**	-.13**	-.23**	-.13**	-.01	-.22**
United Arab Emirates	3,916	26.8	10.9	56.6	3.30	3.69	3.45	3.72	3.00	3.63	.22**	.02	.16**	.13**	-.22**	-.16**	-.20**	-.19**	.05**	-.22**
United Kingdom	157,372	25.1	9.98	49.6	3.29	3.56	3.32	3.76	3.00	3.05	.28**	-.11**	.10**	.09**	-.41**	-.12**	-.23**	-.10**	.03**	-.42**
United States	1,276,327	25.6	11.1	60.1	3.29	3.68	3.51	3.75	2.95	3.40	.27**	-.05**	.14**	.07**	-.41**	-.04**	-.23**	-.09**	-.01**	-.43**
Uruguay	4,486	24.1	10.1	73.1	3.28	3.43	3.28	3.77	3.28	3.18	.31**	-.10**	.10**	.09**	-.33**	.09**	-.20**	-.04**	.01	-.36**
Venezuela	13,402	22.7	8.63	73.8	3.29	3.48	3.39	3.90	3.17	3.66	.30**	-.02	.14**	.09**	-.28**	-.01	-.19**	-.07**	.02*	-.31**
Vietnam	532	25.6	9.27	57.6	3.21	3.62	3.42	3.65	2.93	3.73	.23**	-.12**	.15**	.11**	-.19**	-.22**	-.22**	-.17**	.00	-.17**

Note. % ♀ ⇔ percent women in the subsample, Se ⇔ self-esteem, **⇔ $p < .01$, *⇔ $p < .05$.

Table 2. Example items and psychometric properties of the BFI scales (Studies 1-2).

	E				A				C				O				N			
Scale length:	8 items				9 items				9 items				10 items				8 items			
Example items:									I see myself as someone who…											
	…is outgoing, sociable.				…has a forgiving nature.				…is a reliable worker				…has an active imagination				…worries a lot.			
	…is sometimes shy, inhibited.				…starts quarrels with others.				…tends to be disorganized				…has few artistic interests.				…is calm in tense situations.			
Cronbach's α:	Eng	Es	Ger	NL	Eng	Es	Ger	NL	Eng	Es	Ger	NL	Eng	Es	Ger	NL	Eng	Es	Ger	NL
Study 1	.85	.77	.80	.77	.79	.59	.63	.66	.83	.75	.79	.76	.78	.75	.75	.74	.83	.76	.80	.79
Study 2	.82	.72	.79	.75	.83	.64	.71	.71	.83	.74	.80	.75	.80	.76	.79	.75	.80	.70	.76	.76
MI Study 1:	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR
config model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
metric model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
scalar model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
fit difference	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR
metric	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
scalar	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
MI Study 2:	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR	CFI	RMSEA		SRMR
config model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
metric model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
scalar model	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
fit difference	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR	ΔCFI	ΔRMSEA		ΔSRMR
metric	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##
scalar	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##	.##	.##		.##

Note. Language: Eng = English, Es = Spanish, Ger = German, NL = Dutch. To probe for measurement invariance, we ran multi-group confirmatory factor analyses (Raju, Laffitte, & Byrne, 2002). Countries served as groups. For each measure we compared three models: (1) The *configural model* ("config model") consists of a latent variable (e.g., Extraversion), as defined by that variable's items (e.g., 8 items for Extraversion). The configural model has no constraints across groups, allowing free variation of all scale properties across countries. (2) The *metric model* deviates from the configural model in only one aspect. Specifically, each item's loading on the latent variable is constrained to be equal across countries (Meredith & Horn, 2001). (3) The scalar model deviates from the metric model in one aspect. Specifically, each item's intercept is constrained to be equal across countries (Meredith & Horn, 2001). One speaks of *metric invariance*, if the configural and metric models possess acceptable fit and if the fit indices of both models are similar (Cheung & Rensvold, 2002). Metric invariance is *necessary und sufficient* to meaningfully interpret differences in correlations across countries (Horn & McArdle, 1992). One speaks of *scalar invariance*, if the metric and scalar models possess acceptable fit and if the fit indices of both models are similar (Cheung & Rensvold, 2002). Scalar invariance is *necessary und sufficient* to meaningfully interpret differences in scale means across countries (Horn & McArdle, 1992). What qualifies as similar fit between two models? Frequently used recommendations are Δ ≤ .050 (Little, 1997; Tucker & Lewis, 1973), Δ ≤ .022 (McGaw & Jöreskog, 1971), and Δ ≤ .010 (Cheung & Rensvold, 2002). As can be seen, the present measures generally yielded evidence satisfying even the more conservative recommendations. With an increasing number of indicators, the CFI increasingly underestimates model fit (Kenny & McCoach, 2003). Hence, we reported CFIs based on models using four item-parcels.

Table 3. Study 1's results (based on the model described by eqs. 1-7).

criterion: self-esteem							criterion: N						
individual-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²	individual-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²
E	.27	.004	63.44	100	.001		E	-.11	.006	-17.11	100	.001	
A	-.07	.005	-14.74	100	.001		A	-.23	.004	-61.56	100	.001	
C	.14	.003	43.29	100	.001		C	-.13	.005	-28.18	100	.001	
O	.13	.004	32.40	100	.001		O	.05	.004	12.24	100	.001	
N	-.27	.007	-41.70	100	.001		Se	-.27	.005	-49.86	100	.001	
country-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²	country-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²
E_C	-.39	.19	-2.12	100	.04		E_C	.20	.15	1.34	100	.18	
A_C	.28	.16	1.71	100	.09		A_C	-.14	.16	-0.84	100	.37	
C_C	.84	.16	5.17	100	.001		C_C	-.74	.13	-5.52	100	.001	
O_C	-.09	.15	-0.58	100	.57		O_C	.27	.11	2.59	100	.01	
N_C	.31	.10	3.11	100	.002		Se_C	.21	.06	3.28	100	.001	
cross-level interactions	*b*	*SE*	*t*	*df*	*p*	ΔR²	cross-level interactions	*b*	*SE*	*t*	*df*	*p*	ΔR²
$E \times E_C$	.25	.06	4.22	100	.001		$E \times E_C$	.16	.10	1.70	100	.09	
$A \times A_C$	.01	.06	0.12	100	.91		$A \times A_C$	-.10	.04	-2.38	100	.02	
$C \times C_C$	.14	.05	2.83	100	.006		$C \times C_C$	.15	.07	2.31	100	.02	
$O \times O_C$	.01	.05	0.28	100	.78		$O \times O_C$	.08	.04	2.00	100	.05	
$N \times N_C$	.07	.05	1.35	100	.18		$Se \times Se_C$	.27	.03	8.55	100	.001	

Note. Se ⇔ self-esteem.

Table 4. Simultaneous regressions of informant-reported Big Five on informant-reported self-esteem and informant-reported N for each of the 65 countries in Study 2.

country	N	simultaneous regression on self-esteem					simultaneous regression on N				
		E	A	C	O	N	E	A	C	O	Se
ABC-Islands	630	.30**	-.12**	.12**	.06	-.22**	.00	-.25**	-.05	.04	-.23**
Argentina	43,420	.29**	-.11**	.11**	.07**	-.22**	.07**	-.27**	.02**	.07**	-.23**
Armenia	389	.35**	-.12**	.23**	.07	-.25**	.05	-.28**	-.01	.11*	-.28**
Australia	20,380	.32**	-.09**	.11**	.06**	-.38**	-.04**	-.31**	-.03**	.03**	-.39**
Austria	4,002	.41**	-.15**	.07**	.08**	-.29**	-.01	-.28**	-.04**	.05**	-.34**
Belgium	7,468	.26**	-.20**	.09**	.06**	-.24**	-.08**	-.28**	-.04**	.03*	-.25**
Bolivia	2,479	.30**	-.03	.13**	.10**	-.16**	-.04	-.21**	-.02	.09**	-.18**
Brazil	1,725	.34**	-.13**	.16**	.14**	-.25**	.10**	-.39**	.06*	.03	-.26**
Canada	32,515	.30**	-.09**	.12**	.07**	-.38**	-.02**	-.31**	-.03**	.02**	-.39**
Chile	19,503	.30**	-.08**	.12**	.06**	-.24**	.03**	-.25**	-.03**	.03**	-.26**
China	1,527	.17**	-.08**	.11**	.12**	-.11**	-.12**	-.35**	-.18**	.05*	-.10**
Colombia	13,873	.26**	-.04**	.12**	.13**	-.22**	.01	-.24**	.00	.07**	-.24**
Costa Rica	2,294	.28**	-.02	.13**	.10**	-.24**	.03	-.26**	-.01	.03	-.27**
Croatia	541	.25**	-.20**	.19**	.09*	-.25**	-.07	-.39**	-.03	.04	-.24**
Cuba	386	.27**	-.09	.18**	.13**	-.27**	.05	-.34**	.01	.04	-.28**
Denmark	2,444	.31**	-.18**	.11**	.13**	-.31**	-.05**	-.28**	-.06**	.01	-.33**
Dominican Republic	2,473	.24**	.00	.15**	.13**	-.24**	.03	-.18**	-.06**	.11**	-.27**
Ecuador	2,464	.26**	-.01	.17**	.12**	-.20**	.00	-.21**	.02	.03	-.23**
Egypt	429	.20**	-.05	.20**	.05	-.10**	-.04	-.26**	-.05	.08	-.10**
El Salvador	1,450	.25**	.01	.11**	.19**	-.19**	.04	-.26**	.02	.02	-.21**
Finland	3,014	.31**	-.11**	.12**	.10**	-.35**	.01	-.33**	-.04*	.05**	-.36**
France	1,720	.30**	-.21**	.02	.09**	-.27**	-.02	-.31**	-.07**	-.02	-.27**
Germany	34,813	.42**	-.16**	.07**	.06**	-.31**	.00	-.30**	-.05**	.08**	-.37**
Greece	718	.31**	-.15**	.16**	.14**	-.22**	-.05	-.32**	-.02	.08*	-.24**
Guatemala	2,078	.23**	.00	.15**	.16**	-.22**	-.01	-.26**	.02	.03	-.24**
Honduras	836	.27**	.02	.15**	.10**	-.22**	.09**	-.18**	.05	.05	-.24**
Hong Kong	992	.22**	-.08**	.20**	.14**	-.15**	-.09**	-.37**	.02	.02	-.15**
Hungary	353	.29**	-.16**	.03	.17**	-.24**	-.12*	-.31**	-.10*	.03	-.24**
India	4,871	.15**	-.08**	.19**	.21**	-.09**	-.18**	-.25**	-.16**	.02	-.08**
Indonesia	633	.29**	-.08	.10*	.15**	-.13**	-.13**	-.30**	-.15**	.06	-.13**
Ireland	2,960	.29**	-.15**	.11**	.05**	-.36**	-.05**	-.33**	-.02	.02	-.36**
Israel	815	.32**	-.16**	.09**	.10**	-.28**	.00	-.26**	-.08*	.03	-.30**
Italy	1,472	.29**	-.21**	.12**	.10**	-.30**	.00	-.39**	-.09**	.06*	-.29**
Japan	1,065	.25**	-.09**	.13**	.12**	-.26**	-.10**	-.29**	-.08**	.06*	-.26**
Malaysia	2,300	.29**	-.05*	.20**	.21**	-.19**	-.10**	-.32**	-.08**	.05*	-.22**
Mexico	53,738	.27**	-.02**	.13**	.13**	-.25**	.01*	-.21**	-.01**	.03**	-.28**
Netherlands	42,267	.24**	-.18**	.05**	.10**	-.31**	-.12**	-.29**	-.07**	.04**	-.30**
New Zealand	5,830	.29**	-.11**	.12**	.08**	-.41**	-.04**	-.34**	-.02	.03*	-.41**
Nicaragua	794	.20**	.01	.10**	.22**	-.25**	.05	-.21**	-.02	.08*	-.28**
Norway	1,937	.35**	-.14**	.10**	.08**	-.34**	-.02	-.34**	-.06**	.08**	-.35**
Pakistan	970	.11**	-.04	.14**	.24**	-.02	-.18**	-.18**	-.13**	.09**	-.02
Panama	904	.28**	.02	.08*	.10**	-.19**	.04	-.26**	.02	.06	-.20**
Paraguay	1,165	.28**	-.06*	.15**	.10**	-.16**	.13**	-.23**	.02	.03	-.18**
Peru	8,213	.28**	-.05**	.16**	.15**	-.21**	-.02	-.20**	-.04**	.06**	-.24**
Philippines	4,613	.30**	-.04**	.18**	.16**	-.16**	-.11**	-.27**	-.13**	.09**	-.18**
Poland	564	.33**	-.27**	.07*	.11**	-.28**	-.02	-.35**	-.08*	.12**	-.30**
Portugal	784	.30**	-.18**	.06	.09**	-.40**	.04	-.31**	-.05	.12**	-.41**
Puerto Rico	428	.29**	.06	.19**	.11*	-.29**	.02	-.26**	-.02	.00	-.34**
Romania	669	.26**	-.24**	.13**	.19**	-.21**	-.04	-.37**	-.06	.00	-.21**
Russia	360	.23**	-.26**	.19**	.19**	-.16**	-.04	-.32**	-.17**	.07	-.16**
Singapore	3,484	.27**	-.12**	.14**	.13**	-.25**	-.16**	-.29**	-.04*	.07**	-.26**
Slovenia	312	.37**	-.18**	.09	.07	-.13*	-.02	-.20**	-.14**	-.09	-.15**

South Africa	1,543	.31**	-.06*	.07**	.06**	-.35**	-.06**	-.29**	-.08**	.02	-.35**
South Korea	543	.24**	-.10*	.20**	.08*	-.24**	-.10*	-.36**	-.01	.01	-.24**
Spain	55,351	.32**	-.12**	.08**	.06**	-.30**	.11**	-.30**	-.02**	.04**	-.31**
Sweden	3,670	.32**	-.10**	.06**	.07**	-.39**	.05**	-.30**	-.10**	.06**	-.39**
Switzerland	5,452	.36**	-.16**	.09**	.08**	-.28**	-.01	-.30**	-.09**	.06**	-.31**
Taiwan	302	.02	-.13*	.10	.13*	-.21**	-.18**	-.26**	-.18**	.06	-.19**
Thailand	521	.28**	-.01	.22**	.08	-.14**	-.19**	-.26**	-.16**	.05	-.14**
Turkey	443	.23**	-.13**	.16**	.26**	-.27**	.03	-.41**	.06	.07	-.29**
United Arab Emirates	1,001	.25**	-.08**	.20**	.12**	-.24**	-.09**	-.26**	-.08*	.10**	-.25**
United Kingdom	54,987	.31**	-.15**	.08**	.05**	-.38**	-.08**	-.31**	-.03**	.03**	-.38**
United States	346,544	.29**	-.06**	.14**	.06**	-.38**	-.01**	-.33**	-.05**	.01**	-.38**
Uruguay	2,738	.25**	-.11**	.14**	.13**	-.23**	.07**	-.24**	.02	.09**	-.24**
Venezuela	7,821	.28**	-.01	.12**	.12**	-.20**	.00	-.19**	-.04**	.06**	-.23**

Note. Se ⇔ self-esteem, **⇔ $p < .01$, *⇔ $p < .05$.

Table 5. Study 2's "informant-reports only" results (based on the model described by eqs. 1-7).

criterion: self-esteem							criterion: N						
individual-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²	individual-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²
E	.29	.006	50.24	59	.001		E	-.03	.007	-3.49	59	.001	
A	-.10	.007	-15.30	59	.001		A	-.29	.007	-42.40	59	.001	
C	.13	.004	31.33	59	.001		C	-.05	.005	-8.66	59	.001	
O	.12	.006	20.50	59	.001		O	.05	.004	12.40	59	.001	
N	-.25	.008	-30.30	59	.001		Se	-.25	.008	-30.70	59	.001	
country-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²	country-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR²
E_C	-.03	.016	-1.76	59	.08		E_C	.013	.015	0.89	59	.38	
A_C	.007	.017	0.44	59	.66		A_C	-.02	.015	-1.15	59	.26	
C_C	.07	.019	3.84	59	.001		C_C	-.04	.018	-2.38	59	.02	
O_C	.001	.016	0.07	59	.94		O_C	.04	.014	2.78	59	.007	
N_C	.06	.016	4.01	59	.001		Se_C	.02	.014	1.18	59	.24	
cross-level interactions	*b*	*SE*	*t*	*df*	*p*	ΔR²	cross-level interactions	*b*	*SE*	*t*	*df*	*p*	ΔR²
$E \times E_C$	.02	.007	2.95	59	.005		$E \times E_C$	-.002	.009	-0.24	59	.81	
$A \times A_C$	.02	.008	2.10	59	.04		$A \times A_C$	-.01	.008	-0.93	59	.36	
$C \times C_C$	.01	.006	2.31	59	.03		$C \times C_C$	.004	.008	0.52	59	.61	
$O \times O_C$	-.004	.007	-.60	59	.55		$O \times O_C$	-.002	.005	-0.48	59	.63	
$N \times N_C$	.04	.01	3.97	59	.001		$Se \times Se_C$	.06	.009	6.94	59	.001	

Note. Se ⇔ self-esteem.

Table 6. Study 2's "informant-reports, controlling for informants' self-reports" results.

criterion: self-esteem							criterion: N						
individual-level effects	*B*	*SE*	*T*	*df*	*p*	ΔR^2	individual-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR^2
E	.28	.006	49.86	59	.001		E	-.005	.007	-0.66	59	.51	
A	-.12	.007	-17.30	59	.001		A	-.29	.007	-42.40	59	.001	
C	.12	.004	31.54	59	.001		C	-.02	.005	-3.85	59	.001	
O	.10	.005	19.72	59	.001		O	.03	.004	7.61	59	.001	
N	-.27	.008	-34.20	59	.001		Se	-.29	.008	-33.90	59	.001	
country-level effects	*B*	*SE*	*T*	*df*	*p*	ΔR^2	country-level effects	*b*	*SE*	*t*	*df*	*p*	ΔR^2
E_C	-.03	.016	-1.75	59	.09		E_C	.013	.015	0.85	59	.40	
A_C	.007	.017	0.41	59	.68		A_C	-.02	.015	-1.17	59	.25	
C_C	.07	.019	3.85	59	.001		C_C	-.04	.018	-2.35	59	.02	
O_C	.0009	.016	0.06	59	.96		O_C	.04	.014	2.75	59	.008	
N_C	.06	.016	3.99	59	.001		Se_C	.02	.014	1.24	59	.22	
cross-level interactions	*B*	*SE*	*T*	*df*	*p*	ΔR^2	cross-level interactions	*b*	*SE*	*t*	*df*	*p*	ΔR^2
$E \times E_C$	.02	.007	2.82	59	.007		$E \times E_C$	.0009	.008	0.11	59	.92	
$A \times A_C$	.02	.008	2.14	59	.04		$A \times A_C$	-.01	.008	-1.06	59	.29	
$C \times C_C$	.02	.006	2.64	59	.01		$C \times C_C$	.003	.007	0.40	59	.69	
$O \times O_C$	-.001	.007	-0.16	59	.88		$O \times O_C$	-.001	.005	-0.21	59	.83	
$N \times N_C$	.04	.009	4.18	59	.001		$Se \times Se_C$	.06	.009	6.30	59	.001	

Note. Se ⇔ self-esteem.

Figure 1. ##

Figure 2. Extreme group comparisons (Study 1).
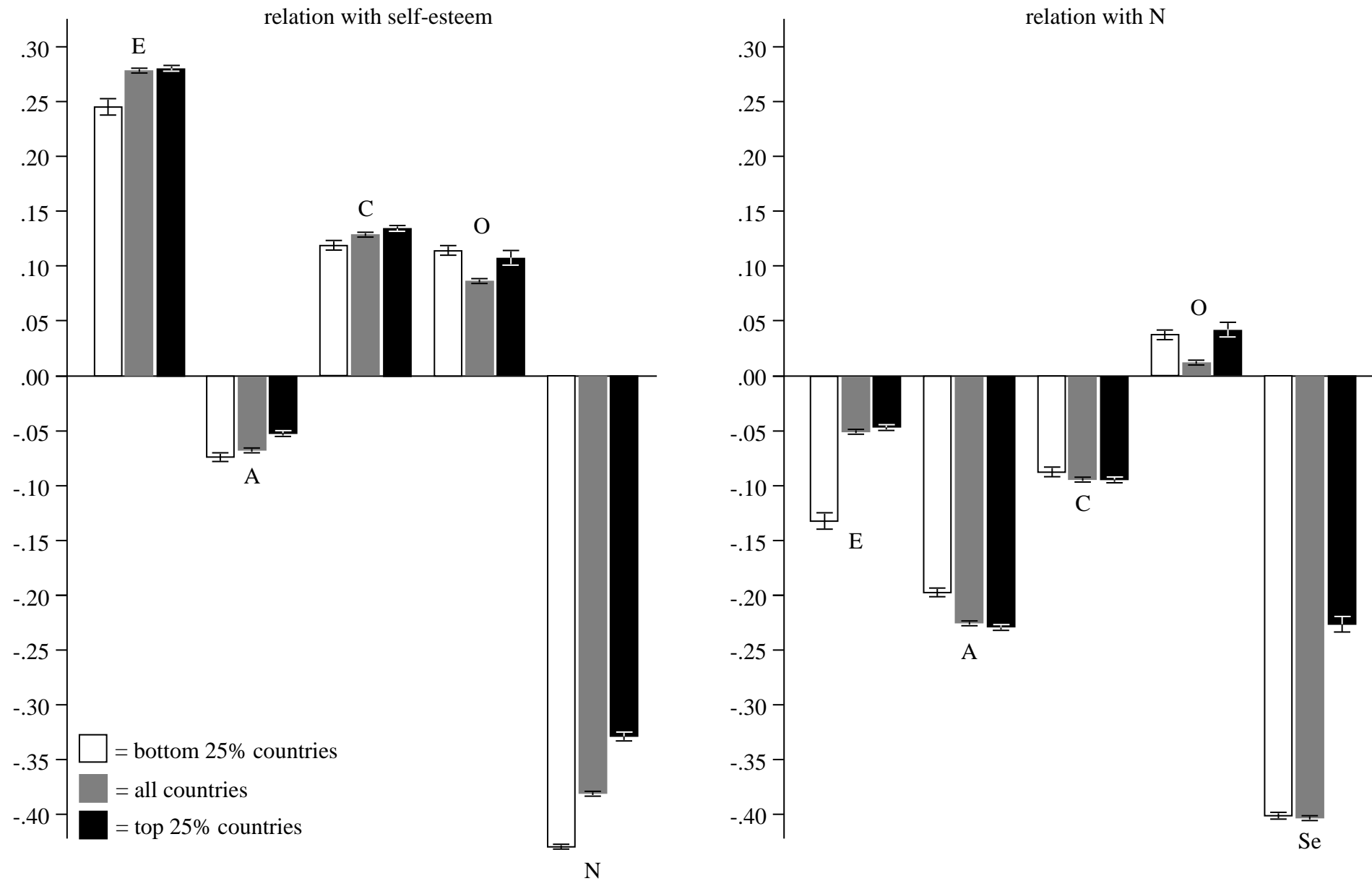
Figure 3. Extreme group comparisons (Study 2, informants' own traits not controlled)
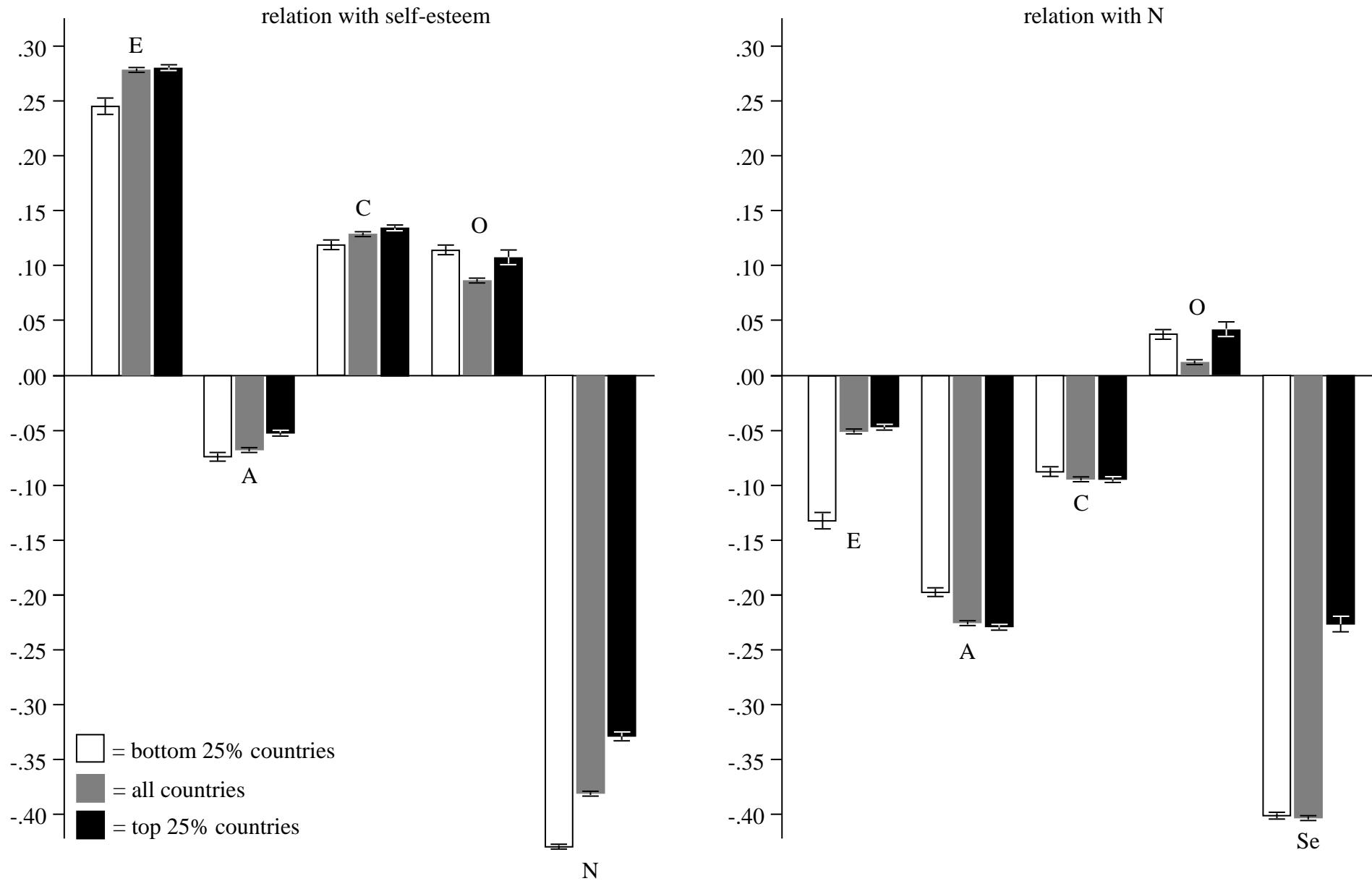
Figure 4. Extreme group comparisons (Study 2, informants' own traits controlled).
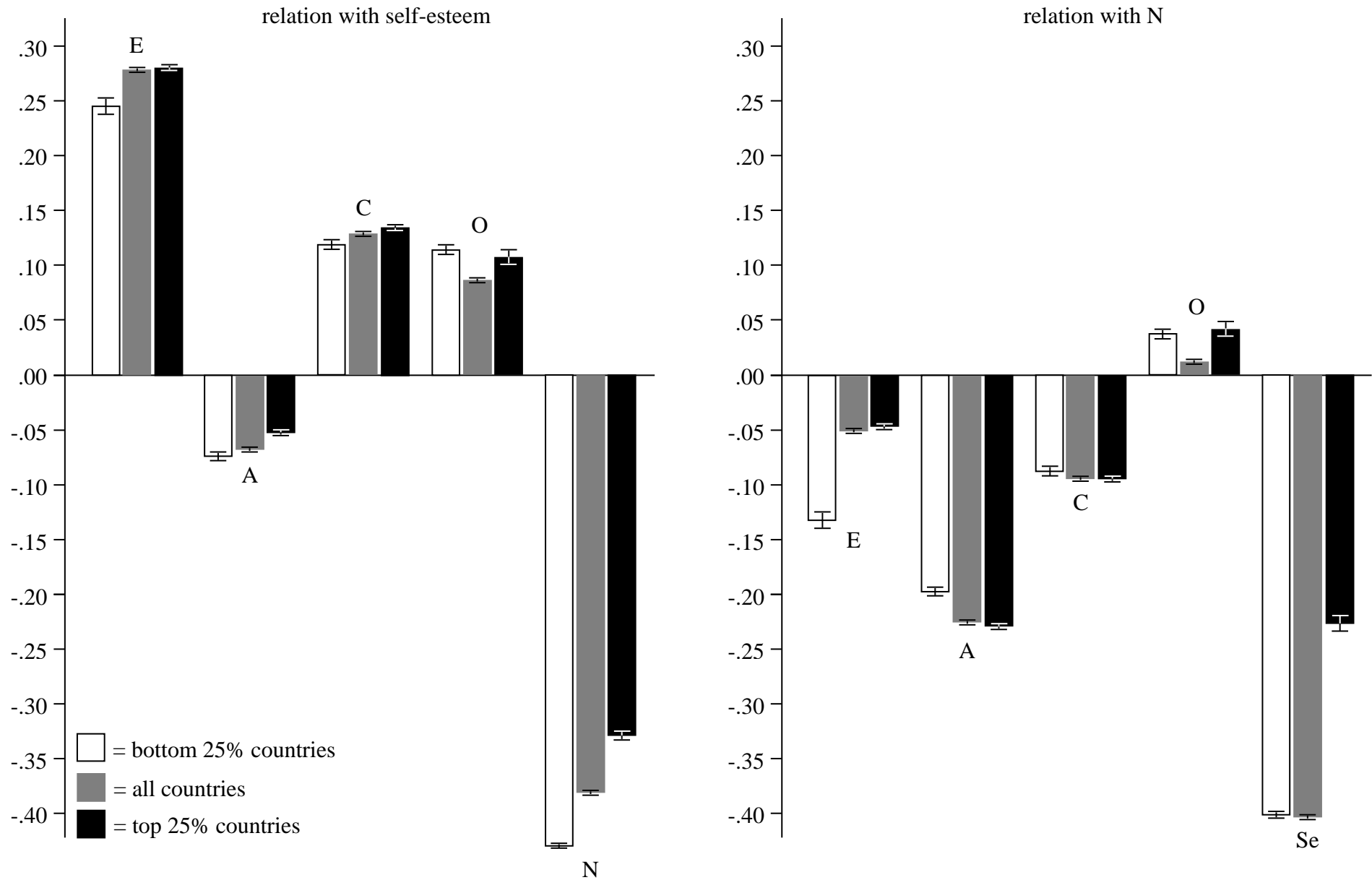
FOOTNOTES

[1]The Spanish version of the Agreeableness Scale comprised eight instead of nine items, because the online questionnaire accidentally omitted the item "...starts quarrels with others."

[2]We examined the interrelation between our country-level Big Five indices and external indices from two sources (McCrae, 2002; Schmitt et al., 2007). Our country-level E, A, and O indices were substantially related to the relevant external indices ($.19 \leq r\mathrm{s} \leq .58$, mean: $r = .39$). In fact, for those three Big Five traits, our indices were more strongly related to each external index than the external indices were related to each other ($.22 \leq r\mathrm{s} \leq .39$, mean: $r = .27$). This is remarkable, because the sampling of the two external sources was similar to each other (i.e., often university students), whereas the current study's sampling was quite different (i.e., online volunteers from all walks of life). Those sampling differences, however, may be the reason why our country-level N and C indices were only weakly related to the external indices ($-.24 \leq r\mathrm{s} \leq .53$, mean: $r = .15$), whereas the external indices were more strongly interrelated ($r\mathrm{s} = .40$). Together, those analyses suggest that the country-level indices (our own indices as well as the external ones) are not representative of the countries at large, but may be representative of more specific subcultures within each country. Hence, following past research (Fulmer et al., 2010; McCrae, 2002; Schmitt et al., 2007), it was most appropriate to focus on our own country-level Big Five indices.

[3]If the predictor of interest is situated at level 1, the proportion of variance it explains is calculated as: $\Delta R^2 = ([\text{level 1 variance}_{\text{baseline model}}] - [\text{level 1 variance}_{\text{full model}}]) / [\text{level 1 variance}_{\text{baseline model}}]$. If the predictor of interest is a cross-level interaction, the proportion of variance it explains is calculated as: $\Delta R^2 = ([\text{random slope variance}_{\text{baseline model}}] - [\text{random slope variance}_{\text{full model}}]) / [\text{random slope variance}_{\text{baseline model}}]$, with random slope variance = the variance of the level 1 slope that is involved in the cross-level interaction.

[4]12,409 US participants responded to the item "How much do you feel that you fit in with your peers?" (Wood, Gosling, & Potter, 2007), which is relevant to social belonging. This allowed us to test the replicability of the finding that Agreeableness and Extraversion are related to social belonging. This was the case. A multiple regression analysis yielded two

main effects on social belonging, one of Extraversion, $\beta = .32$, $SE = .01$, $t(12,408) = 38.98$, the other of Agreeableness, $\beta = .23$, $SE = .01$, $t(12,408) = 27.87$.

[5]Using random slope models may be overly conservative in complex multi-level designs like ours. Hence, we repeated the analysis described in eq. 1-7, but switched to a random intercept model. The results of this analysis revealed significant cultural norm-fulfillment effects for E ($b = .34$, $SE = .13$, $t = 2.64$, $p = .008$), A ($b = .15$, $SE = .07$, $t = 2.18$, $p = .03$), and C ($b = .16$, $SE = .03$, $t = 4.93$, $p < .001$).

[6]As described in footnote 2, our own country-level Big Five indices are more suitable for our analyses than external ones. This is because our own indices are more relevant for the sampled subpopulations within our countries. To test our claim, we repeated the analysis described in eqs. 1-7 using indices from two external sources. Specifically, for each trait, we averaged the two external indices. This yielded external country-level information from ## of our 101 countries. Indeed, the evidence for cultural norm-fulfillment was reduced in those additional analyses. Specifically, we found ##.

[7]Would the evidence for the cultural norm-fulfillment perspective be stronger, if we excluded Asian countries from our analysis? Testing this possibility is justified for two reasons. First, our data from Asia may not reflect typical Asian characteristics, because our Asian participants had to complete our studies in English (or in Spanish, German, or Dutch). Second, norm-fulfillment may not affect self-esteem in Asia (Heine, Lehman, Markus, & Kitayama, 1999; but see Kobayashi & Brown, 2003; Kurman, 2003; Sedikides et al., 2005). Thus, we repeated the analyses described in the main text, but excluded Study 1's ## Asian countries. The results did not yield stronger support for the cultural norm-fulfillment perspective, and were still consistent with the getting-ahead perspective. We also conducted parallel analyses in Study 2, excluding ## Asian countries. Once more, the results fitted the getting-ahead perspective best.

[8]Most theories in the norm-fulfillment tradition emphasize the role of cultural norms (Pyszczynski et al., 2004; Rosenberg, 1965; Sedikides et al., 2003). However, norm-fulfillment effects on self-esteem may also apply to more refined social norms, such as age, sex, and religiosity norms (Crocker & Major, 1989; Gebauer, Wagner et al., 2012). Gebauer,

Wagner et al. (2012) examined the role of age, sex, and religiosity in the relation between agency-communion and self-esteem. They found consistent evidence for norm-fulfillment, but those norm-fulfillment effects were much smaller than was cultural norm-fulfillment on self-esteem. Likewise, Robins et al. (2001) examined the role of age and sex in the relation between the Big Five and self-esteem. Age and sex did not substantially qualify their Big Five relations with self-esteem. Thus, theoretical and empirical reasons led us to focus exclusively on cultural norm-fulfillment in the main text. In a further test of this decision, we repeated our analyses, including age, sex, and religiosity as additional moderators of the Big Five's relations with self-esteem. Replicating past research, we generally found evidence for very small norm-fulfillment effects (Gebauer, Wagner et al., 2012). Such small effects are in line with the getting-ahead perspective and did not conceptually challenge any of our conclusions. That is, we still obtained universal support for the double-dissociation hypothesis.

[9]As in Study 1, we sought to examine whether our own country-level Big Five indices are more suitable for our analyses than external ones. To this end, we repeated Study 2's analyses using external country-level indices, instead of our own one's (footnote 2 provides more information on the external indices). As in Study 1, the evidence for cultural norm-fulfillment weakened. Specifically, we found ##.

ONLINE SUPPLEMENT

Table S1. Study 1's results using separate models for each trait (neither controlling for the other traits at the individual- nor at the country-level).

criterion: self-esteem							criterion: N						
individual-level effects	b	SE	t	df	p	ΔR²	individual-level effects	b	SE	t	df	p	ΔR²
E	.40	.006	65.90	99	.001		E	-.28	.008	-36.60	99	.001	
A	.12	.008	15.63	99	.001		A	-.32	.005	-68.20	99	.001	
C	.27	.005	51.23	99	.001		C	-.27	.007	-40.90	99	.001	
O	.23	.005	43.31	99	.001		O	-.08	.004	-17.60	99	.001	
N	-.39	.008	-47.90	99	.001		Se	-.38	.007	-53.20	99	.001	
country-level effects	b	SE	t	df	p	ΔR²	country-level effects	b	SE	t	df	p	ΔR²
E	-.01	.017	-0.50	99	.62		E	-.01	.015	-0.51	99	.61	
A	.07	.015	4.21	99	.001		A	-.05	.014	-3.24	99	.002	
C	.08	.015	5.22	99	.001		C	-.06	.014	-3.99	99	.001	
O	-.003	.017	-0.21	99	.84		O	.02	.015	1.52	99	.13	
N	-.001	.017	-0.07	99	.95		Se	-.001	.015	-0.08	99	.94	
cross-level interactions	b	SE	t	df	p	ΔR²	cross-level interactions	b	SE	t	df	p	ΔR²
E × E	.02	.006	2.97	99	.004		E × E	.02	.008	2.52	99	.01	
A × A	.01	.008	1.70	99	.09		A × A	-.03	.005	-5.67	99	.001	
C × C	.01	.005	2.08	99	.04		C × C	-.002	.007	-0.30	99	.76	
O × O	.01	.005	2.15	99	.03		O × O	.007	.004	1.72	99	.09	
N × N	.01	.008	1.21	99	.23		Se × Se	.03	.007	4.35	99	.001	

Note. Se ⇔ self-esteem.

Table S2. Zero-order correlations between the Big Five and self-esteem for each of the 101 countries in Study 1.

Country	zero-order correlations with self-esteem					zero-order correlations with N			
	E	A	C	O	N	E	A	C	O
ABC-Islands	.34**	.12**	.27**	.16**	-.36**	-.18**	-.30**	-.24**	-.07*
Afghanistan	.40**	.30**	.22**	.21**	-.48**	-.38**	-.36**	-.34**	-.17**
Albania	.35**	.13**	.28**	.19**	-.33**	-.18**	-.25**	-.26**	.02
Andorra	.49**	.25**	.20**	.27**	-.45**	-.32**	-.36**	-.26**	-.10
Argentina	.34**	.09**	.17**	.19**	-.33**	-.11**	-.24**	-.13**	-.06**
Armenia	.36**	.01	.19**	.13**	-.37**	-.18**	-.16**	-.09**	-.04
Australia	.45**	.14**	.25**	.17**	-.52**	-.32**	-.31**	-.27**	-.07**
Austria	.52**	.06**	.24**	.18**	-.44**	-.31**	-.27**	-.27**	-.05**
Bahamas	.35**	.16**	.29**	.08	-.39**	-.18**	-.34**	-.29**	-.06
Bahrain	.32**	.17**	.23**	.20**	-.26**	-.24**	-.26**	-.24**	-.03
Bangladesh	.30**	.15**	.27**	.17**	-.30**	-.34**	-.31**	-.30**	-.08*
Barbados	.31**	.26**	.42**	.14**	-.51**	-.22**	-.42**	-.29**	-.07
Belgium	.33**	.03**	.18**	.20**	-.38**	-.28**	-.29**	-.21**	-.09**
Belize	.34**	.25**	.30**	.32**	-.33**	-.43**	-.35**	-.27**	-.08
Bolivia	.40**	.17**	.30**	.25**	-.36**	-.17**	-.23**	-.20**	-.11**
Bosnia-Herzegovina	.42**	-.02	.23**	.20**	-.32**	-.30**	-.26**	-.32**	.03
Brazil	.36**	.17**	.32**	.10**	-.40**	-.22**	-.41**	-.24**	.01
Brunei Darussalam	.34**	.21**	.34**	.32**	-.37**	-.28**	-.37**	-.47**	-.13*
Bulgaria	.42**	.01	.21**	.26**	-.28**	-.31**	-.27**	-.29**	-.06*
Canada	.40**	.14**	.26**	.17**	-.50**	-.28**	-.31**	-.26**	-.08**
Chile	.41**	.15**	.27**	.22**	-.41**	-.22**	-.27**	-.23**	-.10**
China	.18**	.05**	.16**	.17**	-.14**	-.29**	-.38**	-.37**	-.09**
Colombia	.37**	.17**	.27**	.23**	-.39**	-.19**	-.28**	-.19**	-.10**
Costa Rica	.35**	.15**	.24**	.22**	-.39**	-.11**	-.23**	-.13**	-.08**
Croatia	.41**	.04	.26**	.18**	-.38**	-.33**	-.35**	-.33**	-.04
Cuba	.34**	.07	.28**	.30**	-.37**	-.10*	-.22**	-.18**	.00
Cyprus	.48**	.10**	.25**	.21**	-.40**	-.27**	-.30**	-.23**	-.02
Czech Republic	.37**	.05	.24**	.22**	-.35**	-.27**	-.29**	-.29**	.02
Denmark	.43**	.05**	.23**	.19**	-.46**	-.35**	-.29**	-.28**	-.07**
Dominican Republic	.35**	.20**	.31**	.23**	-.41**	-.15**	-.27**	-.26**	-.08**
Ecuador	.41**	.21**	.28**	.26**	-.38**	-.23**	-.25**	-.19**	-.11**
Egypt	.35**	.08**	.31**	.24**	-.31**	-.21**	-.23**	-.21**	-.09**
El Salvador	.38**	.21**	.26**	.24**	-.40**	-.19**	-.30**	-.19**	-.11**
Estonia	.44**	-.01	.25**	.19**	-.36**	-.35**	-.27**	-.23**	-.04
Finland	.45**	.14**	.25**	.22**	-.51**	-.32**	-.31**	-.25**	-.05**
France	.31**	-.03*	.17**	.19**	-.31**	-.25**	-.32**	-.26**	-.04**
Germany	.53**	.02**	.21**	.19**	-.43**	-.26**	-.24**	-.24**	-.04**
Greece	.41**	.02	.26**	.21**	-.37**	-.23**	-.30**	-.21**	-.07**

Guatemala	.37**	.19**	.24**	.23**	-.42**	-.23**	-.26**	-.18**	-.11**
Honduras	.36**	.12**	.24**	.22**	-.41**	-.11**	-.24**	-.16**	-.09**
Hong Kong	.31**	.08**	.26**	.20**	-.28**	-.34**	-.37**	-.36**	-.13**
Hungary	.40**	.02	.20**	.19**	-.39**	-.31**	-.33**	-.28**	.01
Iceland	.47**	.13**	.32**	.21**	-.44**	-.28**	-.32**	-.32**	-.10**
India	.26**	.11**	.29**	.25**	-.25**	-.31**	-.33**	-.35**	-.14**
Indonesia	.33**	.13**	.25**	.27**	-.29**	-.30**	-.41**	-.39**	-.08**
Iran	.31**	.11**	.29**	.29**	-.31**	-.24**	-.38**	-.26**	-.07*
Ireland	.44**	.09**	.23**	.16**	-.50**	-.35**	-.30**	-.25**	-.05**
Israel	.42**	.12**	.29**	.23**	-.42**	-.30**	-.39**	-.34**	-.06**
Italy	.38**	.05**	.23**	.18**	-.39**	-.26**	-.35**	-.33**	-.02
Jamaica	.32**	.20**	.38**	.16**	-.50**	-.27**	-.38**	-.30**	-.09*
Japan	.36**	.09**	.21**	.20**	-.37**	-.26**	-.31**	-.27**	-.06**
Jordan	.31**	.13**	.32**	.30**	-.31**	-.23**	-.28**	-.26**	-.02
Kenya	.50**	.22**	.38**	.26**	-.40**	-.32**	-.38**	-.33**	-.19**
Kuwait	.39**	.09*	.40**	.27**	-.35**	-.30**	-.32**	-.38**	-.15**
Latvia	.45**	.03	.29**	.16**	-.28**	-.31**	-.26**	-.25**	.00
Lebanon	.33**	.00	.26**	.19**	-.27**	-.13**	-.27**	-.31**	-.02
Lithuania	.38**	.05	.20**	.23**	-.32**	-.32**	-.23**	-.20**	-.10*
Luxembourg	.47**	.07	.30**	.16**	-.43**	-.26**	-.32**	-.29**	-.02
Malaysia	.39**	.17**	.35**	.27**	-.37**	-.31**	-.38**	-.36**	-.11**
Malta	.47**	.11*	.23**	.19**	-.44**	-.32**	-.31**	-.28**	-.01
Mauritius	.40**	.25**	.33**	.33**	-.41**	-.34**	-.32**	-.35**	-.18**
Mexico	.39**	.19**	.27**	.25**	-.43**	-.20**	-.26**	-.22**	-.12**
Morocco	.31**	.05	.23**	.16**	-.24**	-.13*	-.30**	-.29**	.04
Netherlands	.39**	.05**	.17**	.20**	-.43**	-.34**	-.29**	-.24**	-.09**
Netherlands Antilles	.38**	.23**	.17**	.19**	-.37**	-.29**	-.34**	-.21**	-.11*
New Zealand	.43**	.14**	.23**	.18**	-.51**	-.33**	-.34**	-.27**	-.08**
Nicaragua	.36**	.19**	.26**	.27**	-.39**	-.16**	-.20**	-.14**	-.18**
Nigeria	.37**	.23**	.37**	.24**	-.41**	-.35**	-.38**	-.38**	-.09*
Norway	.44**	.10**	.25**	.20**	-.47**	-.34**	-.32**	-.34**	-.01
Pakistan	.23**	.10**	.26**	.23**	-.17**	-.31**	-.28**	-.33**	-.10**
Panama	.43**	.18**	.30**	.28**	-.41**	-.23**	-.33**	-.29**	-.15**
Paraguay	.34**	.18**	.22**	.25**	-.33**	-.09**	-.24**	-.13**	-.05*
Peru	.41**	.19**	.33**	.28**	-.42**	-.24**	-.25**	-.28**	-.13**
Philippines	.41**	.19**	.35**	.28**	-.39**	-.26**	-.37**	-.40**	-.11**
Poland	.38**	-.02	.21**	.25**	-.38**	-.34**	-.25**	-.25**	-.03
Portugal	.46**	.04*	.28**	.14**	-.50**	-.32**	-.26**	-.28**	-.01
Puerto Rico	.49**	.27**	.36**	.23**	-.45**	-.20**	-.27**	-.27**	-.14**
Qatar	.37**	.14**	.28**	.25**	-.33**	-.24**	-.33**	-.37**	-.15**
Romania	.40**	.03	.26**	.21**	-.36**	-.32**	-.33**	-.34**	-.09**
Russia	.33**	.02	.27**	.18**	-.31**	-.28**	-.27**	-.32**	.00
Saudi Arabia	.31**	.13**	.35**	.25**	-.40**	-.26**	-.31**	-.33**	-.07*
Serbia-Montenegro	.42**	-.04	.28**	.22**	-.32**	-.31**	-.28**	-.27**	.00
Singapore	.38**	.11**	.28**	.23**	-.38**	-.33**	-.35**	-.31**	-.13**

Slovak Republic	.45**	.03	.20**	.17**	-.35**	-.37**	-.35**	-.34**	-.10
Slovenia	.47**	.02	.30**	.29**	-.45**	-.35**	-.24**	-.33**	-.12**
South Africa	.44**	.16**	.27**	.20**	-.49**	-.32**	-.34**	-.28**	-.11**
South Korea	.30**	.10**	.25**	.14**	-.35**	-.24**	-.36**	-.24**	-.06**
Spain	.38**	.12**	.19**	.20**	-.43**	-.15**	-.26**	-.18**	-.07**
Sri Lanka	.29**	.06	.27**	.26**	-.26**	-.32**	-.25**	-.29**	-.06
Sweden	.45**	.09**	.26**	.18**	-.49**	-.32**	-.30**	-.30**	-.01
Switzerland	.46**	.03**	.19**	.16**	-.40**	-.27**	-.27**	-.27**	-.04**
Taiwan	.28**	.01	.28**	.21**	-.26**	-.35**	-.31**	-.32**	-.09**
Thailand	.38**	.15**	.31**	.23**	-.31**	-.34**	-.40**	-.35**	-.06**
Trinidad and Tobago	.37**	.17**	.37**	.18**	-.50**	-.27**	-.37**	-.38**	-.09*
Turkey	.48**	.15**	.32**	.26**	-.36**	-.32**	-.33**	-.30**	-.11**
United Arab Emirates	.36**	.20**	.31**	.26**	-.36**	-.30**	-.33**	-.35**	-.12**
United Kingdom	.44**	.08**	.22**	.17**	-.50**	-.34**	-.30**	-.27**	-.07**
United States	.40**	.17**	.27**	.14**	-.51**	-.26**	-.33**	-.28**	-.08**
Uruguay	.34**	.08**	.16**	.18**	-.35**	-.09**	-.22**	-.13**	-.07**
Venezuela	.40**	.18**	.26**	.23**	-.37**	-.19**	-.27**	-.20**	-.10**
Vietnam	.30**	.07	.22**	.17**	-.29**	-.37**	-.35**	-.31**	-.10*

Note. ** $\Leftrightarrow p < .01$, * $\Leftrightarrow p < .05$.

Table S3. Study 2's results using separate models for each informant-report trait (neither controlling for the other traits at the individual- nor at the country-level).

criterion: self-esteem							criterion: N						
individual-level effects	b	SE	t	df	p	ΔR^2	individual-level effects	b	SE	t	df	p	ΔR^2
E	.35	.007	51.54	63	.001		E	-.15	.009	-17.00	63	.001	
A	.09	.011	8.69	63	.001		A	-.32	.007	-46.00	63	.001	
C	.19	.007	26.89	63	.001		C	-.16	.008	-20.80	63	.001	
O	.22	.008	28.63	63	.001		O	-.09	.006	-15.30	63	.001	
N	-.30	.009	-33.90	63	.001		Se	-.28	.01	-27.00	63	.001	
country-level effects	b	SE	t	df	p	ΔR^2	country-level effects	b	SE	t	df	p	ΔR^2
E	.0007	.016	0.04	63	.97		E	.0008	.014	0.05	63	.96	
A	.005	.016	0.28	63	.78		A	-.04	.013	-2.90	63	.005	
C	.04	.015	2.42	63	.02		C	-.03	.014	-1.92	63	.06	
O	.03	.016	1.66	63	.10		O	.04	.014	2.70	63	.009	
N	.04	.015	2.52	63	.01		Se	-.001	.014	-0.09	63	.93	
cross-level interactions	b	SE	t	df	p	ΔR^2	cross-level interactions	b	SE	t	df	p	ΔR^2
E × E	.02	.007	2.43	63	.02		E × E	-.003	.009	-0.30	63	.768	
A × A	.01	.011	1.12	63	.27		A × A	-.02	.007	-3.40	63	.001	
C × C	.01	.007	1.35	63	.18		C × C	-.01	.008	-1.07	63	.29	
O × O	.005	.008	0.59	63	.56		O × O	.005	.006	0.72	63	.48	
N × N	.03	.009	3.89	63	.001		Se × Se	.04	.011	3.39	63	.001	

Note. Se ⇔ self-esteem.

Table S4. Zero-order correlations between informant-reported Big Five and informant-reported self-esteem and informant-reported N for each of the 65 countries in Study 2.

Country	zero-order correlations with self-esteem					zero-order correlations with N			
	E	A	C	O	N	E	A	C	O
ABC-Islands	.35**	.06	.19**	.17**	-.25**	-.13**	-.27**	-.17**	-.09*
Argentina	.30**	.04**	.13**	.14**	-.21**	-.04**	-.25**	-.06**	-.01*
Armenia	.37**	.06	.25**	.16**	-.26**	-.08	-.27**	-.11*	.03
Australia	.41**	.12**	.17**	.19**	-.45**	-.22**	-.37**	-.19**	-.12**
Austria	.48**	-.01	.14**	.19**	-.34**	-.19**	-.27**	-.12**	-.07**
Belgium	.30**	-.05**	.11**	.13**	-.26**	-.20**	-.28**	-.14**	-.09**
Bolivia	.36**	.12**	.20**	.23**	-.21**	-.12**	-.22**	-.09**	-.03
Brazil	.36**	.11**	.19**	.22**	-.25**	-.06*	-.38**	-.09**	-.10**
Canada	.38**	.13**	.18**	.18**	-.43**	-.18**	-.36**	-.19**	-.13**
Chile	.33**	.09**	.16**	.18**	-.27**	-.10**	-.27**	-.12**	-.09**
China	.23**	.04	.16**	.19**	-.15**	-.17**	-.40**	-.29**	-.11**
Colombia	.31**	.15**	.19**	.24**	-.26**	-.09**	-.26**	-.10**	-.06**
Costa Rica	.34**	.16**	.20**	.24**	-.29**	-.10**	-.29**	-.12**	-.09**
Croatia	.28**	.01	.21**	.18**	-.26**	-.22**	-.41**	-.16**	-.08
Cuba	.33**	.14**	.25**	.28**	-.30**	-.11*	-.35**	-.11*	-.11*
Denmark	.41**	.04	.20**	.24**	-.37**	-.25**	-.32**	-.21**	-.17**
Dominican Republic	.31**	.19**	.26**	.27**	-.28**	-.06**	-.21**	-.16**	-.05*
Ecuador	.33**	.18**	.24**	.27**	-.26**	-.12**	-.24**	-.08**	-.09**
Egypt	.23**	.05	.22**	.14**	-.12**	-.06	-.26**	-.14**	-.01
El Salvador	.33**	.20**	.21**	.32**	-.24**	-.07**	-.28**	-.09**	-.10**
Finland	.38**	.10**	.19**	.20**	-.39**	-.17**	-.37**	-.18**	-.09**
France	.33**	-.05*	.06*	.16**	-.27**	-.17**	-.32**	-.15**	-.15**
Germany	.49**	-.02**	.14**	.18**	-.35**	-.18**	-.28**	-.14**	-.05**
Greece	.39**	.04	.21**	.25**	-.26**	-.17**	-.33**	-.13**	-.06
Guatemala	.31**	.20**	.23**	.29**	-.28**	-.12**	-.29**	-.09**	-.12**
Honduras	.29**	.16**	.19**	.23**	-.22**	.01	-.19**	-.03	-.01
Hong Kong	.31**	.08*	.24**	.26**	-.20**	-.18**	-.39**	-.13**	-.10**
Hungary	.36**	.01	.09**	.24**	-.29**	-.26**	-.35**	-.20**	-.13*
India	.24**	.09**	.28**	.30**	-.19**	-.25**	-.32**	-.28**	-.17**
Indonesia	.34**	.09*	.17**	.22**	-.21**	-.22**	-.36**	-.26**	-.12**
Ireland	.35**	.04*	.13**	.10**	-.39**	-.20**	-.35**	-.16**	-.09**
Israel	.37**	-.01	.15**	.19**	-.30**	-.13**	-.28**	-.19**	-.11**
Italy	.33**	.00	.17**	.18**	-.30**	-.13**	-.40**	-.22**	-.12**
Japan	.31**	.06	.17**	.20**	-.31**	-.18**	-.32**	-.19**	-.08**
Malaysia	.41**	.17**	.29**	.36**	-.31**	-.20**	-.38**	-.24**	-.16**
Mexico	.34**	.17**	.20**	.27**	-.30**	-.11**	-.25**	-.12**	-.10**
Netherlands	.32**	-.01	.11**	.18**	-.33**	-.27**	-.32**	-.18**	-.11**
New Zealand	.39**	.12**	.17**	.19**	-.46**	-.21**	-.39**	-.19**	-.13**
Nicaragua	.30**	.21**	.24**	.35**	-.29**	-.04	-.24**	-.12**	-.08*
Norway	.43**	.11**	.19**	.18**	-.39**	-.22**	-.39**	-.24**	-.07**
Pakistan	.20**	.08*	.21**	.29**	-.07*	-.19**	-.20**	-.21**	-.04

Panama	.32**	.14**	.13**	.21**	-.21**	-.04	-.26**	-.06	-.04
Paraguay	.31**	.10**	.20**	.21**	-.15**	.04	-.21**	-.07*	-.03
Peru	.36**	.15**	.26**	.29**	-.28**	-.14**	-.23**	-.15**	-.09**
Philippines	.38**	.15**	.27**	.29**	-.27**	-.18**	-.33**	-.28**	-.10**
Poland	.37**	-.14**	.08*	.14**	-.25**	-.13**	-.29**	-.12**	.00
Portugal	.34**	.02	.10**	.12**	-.40**	-.12**	-.29**	-.14**	-.02
Puerto Rico	.40**	.32**	.34**	.34**	-.42**	-.16**	-.37**	-.23**	-.20**
Romania	.34**	-.03	.20**	.28**	-.23**	-.16**	-.39**	-.24**	-.19**
Russia	.27**	-.04	.22**	.24**	-.18**	-.15**	-.35**	-.28**	-.11*
Singapore	.36**	.03*	.16**	.24**	-.31**	-.25**	-.31**	-.15**	-.09**
Slovenia	.38**	-.05	.13*	.17**	-.18**	-.15**	-.24**	-.22**	-.19**
South Africa	.40**	.12**	.14**	.17**	-.42**	-.22**	-.35**	-.20**	-.12**
South Korea	.30**	.07	.22**	.19**	-.29**	-.17**	-.38**	-.16**	-.14**
Spain	.33**	.08**	.11**	.15**	-.30**	-.06**	-.29**	-.11**	-.06**
Sweden	.38**	.12**	.15**	.16**	-.42**	-.14**	-.36**	-.24**	-.06**
Switzerland	.42**	.01	.16**	.20**	-.32**	-.17**	-.31**	-.20**	-.09**
Taiwan	.08	-.03	.13*	.14*	-.21**	-.20**	-.30**	-.28**	-.03
Thailand	.35**	.14**	.28**	.20**	-.28**	-.25**	-.35**	-.31**	-.11*
Turkey	.33**	.17**	.25**	.36**	-.31**	-.11*	-.41**	-.13**	-.17**
United Arab Emirates	.33**	.13**	.27**	.24**	-.31**	-.18**	-.30**	-.22**	-.09**
United Kingdom	.40**	.03**	.11**	.13**	-.42**	-.24**	-.33**	-.17**	-.10**
United States	.36**	.18**	.23**	.19**	-.45**	-.17**	-.41**	-.24**	-.15**
Uruguay	.27**	.06**	.15**	.19**	-.22**	-.03	-.21**	-.06**	.01
Venezuela	.34**	.17**	.20**	.24**	-.25**	-.11**	-.22**	-.12**	-.07**

Note. **⇔ $p < .01$, *⇔ $p < .05$.

Table S5. Study 2's results using separate models for each informant-report trait (neither controlling for the other traits at the individual- nor at the country-level), while controlling the corresponding traits of the informants themselves (self-reported by the informants).

criterion: self-esteem							criterion: N						
individual-level effects	b	SE	t	df	p	ΔR^2	individual-level effects	b	SE	t	df	p	ΔR^2
E	.33	.007	48.56	63	.001		E	-.13	.008	-15.70	63	.001	
A	.06	.010	5.368	63	.001		A	-.30	.007	-42.45	63	.001	
C	.16	.007	24.15	63	.001		C	-.12	.007	-16.09	63	.001	
O	.20	.007	28.84	63	.001		O	-.09	.006	-15.11	63	.001	
N	-.30	.009	-34.70	63	.001		Se	-.30	.011	-27.80	63	.001	
country-level effects	b	SE	t	df	p	ΔR^2	country-level effects	b	SE	t	df	p	ΔR^2
E	.001	.016	0.07	63	.94		E	.0003	.014	0.03	63	.98	
A	.004	.016	0.25	63	.80		A	-.04	.013	-2.88	63	.005	
C	.04	.015	2.40	63	.02		C	-.03	.014	-1.91	63	.06	
O	.03	.016	1.64	63	.11		O	.04	.013	2.73	63	.008	
N	.04	.015	2.52	63	.01		Se	-.0005	.014	-0.04	63	.97	
cross-level interactions	b	SE	t	df	p	ΔR^2	cross-level interactions	b	SE	t	df	p	ΔR^2
E × E	.02	0.007	2.38	63	.02		E × E	.0009	.008	0.06	63	.95	
A × A	.01	0.01	0.10	63	.32		A × A	-.02	.007	-3.13	63	.003	
C × C	.009	0.007	1.36	63	.18		C × C	-.01	.007	-0.86	63	.40	
O × O	.007	0.007	0.96	63	.34		O × O	.009	.007	1.32	63	.19	
N × N	.03	0.008	4.02	63	.001		Se × Se	.03	.011	2.99	63	.004	

Note. Se ⟺ self-esteem.

Table S6. Zero-order correlations between informant-reported Big Five and informant-reported self-esteem and informant-reported N for each of the 65 countries in Study 2.

Ethnicity	zero-order correlations with self-esteem					zero-order correlations with N			
	E	A	C	O	N	E	A	C	O
ABC-Islands	.35**	.06	.19**	.17**	-.25**	-.13**	-.27**	-.17**	-.09*
Argentina	.30**	.04**	.13**	.14**	-.21**	-.04**	-.25**	-.06**	-.01*
Armenia	.37**	.06	.25**	.16**	-.26**	-.08	-.27**	-.11*	.03
Australia	.41**	.12**	.17**	.19**	-.45**	-.22**	-.37**	-.19**	-.12**
Austria	.48**	-.01	.14**	.19**	-.34**	-.19**	-.27**	-.12**	-.07**
Belgium	.30**	-.05**	.11**	.13**	-.26**	-.20**	-.28**	-.14**	-.09**
Bolivia	.36**	.12**	.20**	.23**	-.21**	-.12**	-.22**	-.09**	-.03
Brazil	.36**	.11**	.19**	.22**	-.25**	-.06*	-.38**	-.09**	-.10**
Canada	.38**	.13**	.18**	.18**	-.43**	-.18**	-.36**	-.19**	-.13**
Chile	.33**	.09**	.16**	.18**	-.27**	-.10**	-.27**	-.12**	-.09**
China	.23**	.04	.16**	.19**	-.15**	-.17**	-.40**	-.29**	-.11**
Colombia	.31**	.15**	.19**	.24**	-.26**	-.09**	-.26**	-.10**	-.06**
Costa Rica	.34**	.16**	.20**	.24**	-.29**	-.10**	-.29**	-.12**	-.09**

Note. **⇔ $p < .01$, *⇔ $p < .05$.