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Self-insight into emotional and cognitive abilities is not related to higher adjustment

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Contents

Supplementary Notes.....	2
First Pilot Study Participants.....	2
Second Pilot Study Participant.....	3
Third Pilot Study Participants.....	4
Fourth Pilot Study Methods.....	5
Fourth Pilot Study Results.....	6
Main Study Test of Assumptions of Statistical Tests.....	13
Supplementary Methods.....	14
Details of Study Provided on TurkPrime Interface.....	14
Consent Form.....	15
Measure of Emotional Abilities.....	16
Measure of Self-Views about Emotional Abilities.....	17
Measure of Cognitive Abilities.....	18
Measure of Self-Views about Cognitive Abilities.....	20
Measure of Psychological Adjustment (Life Satisfaction).....	21
Measure of Interpersonal Adjustment (Relationship Quality).....	22
Measure of Institutional Adjustment (Career Satisfaction).....	23
Measures of Demographics.....	24
Debriefing Form.....	26
Additional Demographic Information.....	27
Supplementary Tables.....	28
Supplementary Figure 1.....	33
Supplementary Reference.....	34

Supplementary Notes

First Pilot Study Participants

Participants were 60 individuals recruited from Amazon's Mechanical Turk (MTurk). Of these, 52 completed all the measures required for the analyses, and 50 completed all demographic information. Participants were on average 38 years old ($SD = 9$) and 54% female. Participants were primarily Caucasian ($n = 38$; 76%); 5 (10%) were African American; 2 (4%) were East Asian; and 5 (10%) reported other ethnicities. (Participants could choose more than one category.) A total of 25 (50%) participants reported high school graduation or some university; 17 (34%) reported university graduation; 5 (10%) obtained a Master's degree; 2 (4%) obtained a professional degree (MD or JD); and 1 (2%) reported another level of education. No participant reported less than high school or a PhD degree. On average, participants had an annual income of \$37000 ($SD = \31416).

Second Pilot Study Participants

Participants were 60 individuals recruited from Amazon's Mechanical Turk (MTurk). Of these, 54 completed all the measures required for the analyses, and 52 completed the demographic information. Participants were on average 37 years old ($SD = 11$) and 44% female. Participants were primarily Caucasian ($n = 37$; 71%); and 2 (4%) were Hispanic; 6 (11.5%) were African American; 6 (11.5%) were East Asian; and 1 (2%) reported other (Participants could choose more than one category.) For education, one (2%) participant reported less than high school, 20 (38%) participants reported high school graduation or some university; 25 (48%) reported university graduation; 5 (10%) obtained a Master's degree; 1 (2%) completed a PhD degree. No participant reported obtaining a professional degree (MD or JD) or another level of education. On average, participants had an annual income of \$29471 ($SD = \24098).

Third Pilot Study Participants

Participants were 100 individuals recruited from Amazon's Mechanical Turk (MTurk). Of these, 98 completed all the measures required for the analyses. Participants were on average 33 years old ($SD = 10$) and 52% female. Participants were primarily Caucasian ($n = 65$; 66%); and 8 (8%) were Hispanic; 11 (11%) were African American; 5 (5%) were East Asian; and 8 (8%) reported other ethnicities. (Participants could choose more than one category.) A total of 50 (51%) participants reported high school graduation or some university; 36 (37%) reported university graduation; 10 (10%) obtained a Master's degree; 1 (1%) obtained a professional degree (MD or JD); and 1 (1%) reported another level of education. No participant reported less than high school or completing a PhD degree. On average, participants had an annual income of \$32321 ($SD = \28518).

Fourth Pilot Study Methods

Participants

Participants were 608 individuals recruited from Amazon's Mechanical Turk (MTurk). Of these, 562 completed all the measures required for the analyses. Participants were on average 36 years old ($SD = 11$) and 50% female. Participants were primarily Caucasian ($n = 450$; 80%); and 34 (6%) were Hispanic; 57 (10%) were African American; 20 (4%) were East Asian; and 20 (4%) reported other ethnicities. (Participants could choose more than one category.) A total of 213 (38%) participants reported high school graduation or some university; 259 (46%) reported university graduation; 62 (11%) obtained a master's degree; 7 (1%) completed a PhD degree; 10 (2%) obtained a professional degree (MD or JD); and 11 (2%) reported another level of education. No participant reported less than high school. On average, participants had an annual income of \$42,095 ($SD = \$35,836$). All participants were currently employed in a job.

Procedure

We collected these pilot data as part of a larger study. Below, we only report the measures and analyses that are relevant to this registered report. Participants first completed a brief demographic survey. Then, they completed a 72-item test of emotional abilities that is very similar to the one that we plan to administer in the main study ($M = 52.61$, $SD = 1.69$, split-half reliability = .91). In the pilot study, participants were instructed to identify the emotion that the person in the photograph was trying to express, rather than the emotion that the person was expressing. Participants viewed pictures of people expressing emotions for two seconds and chose the emotion that these people tried to express, out of six possible emotions. In addition, participants reported their views about their performance on this test by indicating how many emotions they thought they identified correctly (from 0 to 72; $M = 52.32$, $SD = 14.43$). There

was a moderate correlation between emotional abilities test scores and self-views, $r(560) = .30$, $p < .001$. Participants also completed the Satisfaction with Life scale ($M = 4.46$, $SD = 1.62$, Cronbach alpha = .94; Diener et al., 1985). The materials, data, and code for analysis have been deposited at Harvard Dataverse:

<https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/BSUNGB>. To

download the csv versions of the data that are required by the code, researchers need to select the “Original File Format (Comma Separated Values)” option in Dataverse. The code for analysis will not work if researchers download the tab versions of the data files instead.

Pilot Study Results

Preprocessing Steps

As in the planned study, we deemed the emotional abilities test complete if participants responded to at least 36 of the 72 items. Out of 608 original participants, 577 met this criterion. We included in our final dataset only participants who had scores for emotional abilities, self-views, and life satisfaction, and 562 participants met these criteria. We centered the predictors (emotional abilities and self-views) by subtracting 36 from the scores, because 36 is the midpoint of the scale ranging from 0 to 72 correct answers.

We conducted analyses examining how emotional abilities and self-views relate to life satisfaction using the *RSA* and *getPar* functions in the *RSA* package (Version .9.11) for R (Schönbrodt, 2017). We first tested the full polynomial model in which life satisfaction is regressed on emotional abilities, self-views, their squared terms, and the interaction term (Edwards, 1994, 2002; Edwards & Parry, 1993). The full polynomial model was significant, $R^2 = .03$, $p < .01$. As such, we inferred that life satisfaction is related to self-views and/or abilities.

The relationship between emotional abilities, self-views, and adjustment is visually displayed in Supplementary Figure 1.

Focal Analyses

We conducted the analyses as described in the main text.

Test of self-insight only hypothesis (Hypothesis 1a). Three of the six criteria for inferring an effect of self-insight only listed in Table 1 were met. The three criteria that were met were as follows. There was significant curvature along the line of incongruence (indicated by a significant and negative a_4 coefficient; $a_4 = -.002$, $SE = .001$, $p < .01$, C.I. = $-.004$ to $-.001$). The first principal axis was parallel to the line of congruence (indicated by a 95% confidence interval for the p_{11} coefficient that includes 1; $p_{11} = 1.43$, $SE = .62$, $p < .05$, C.I. = $.21$ to 2.65). Also, there was no curvilinear trend along the line of congruence (indicated by a non-significant a_2 coefficient: $a_2 = -.0001$, $SE = .0004$, $p = .79$, C.I. = $-.001$ to $.001$). The three criteria that were not met were as follows. There was a significant slope along the line of incongruence (indicated by a significant a_3 coefficient: $a_3 = -.02$, $SE = .01$, $p < .05$, C.I. = $-.04$ to $-.001$). The first principal axis was shifted away from the line of congruence (indicated by a significant p_{10} coefficient; $p_{10} = 13.44$, $SE = 5.72$, $p < .05$, C.I. = 2.23 to 24.66). Also, there was a negative linear trend along the line of congruence (indicated by a significant a_1 coefficient; $a_1 = -.02$, $SE = .01$, $p < .05$, C.I. = $-.03$ to $-.0002$). Only some of the criteria to infer support for the self-insight hypothesis were met, failing to support this hypothesis.

Test of self-insight plus main effects hypothesis (Hypothesis 1b). Three of the six criteria for inferring an effect of self-insight plus main effects were met. There was significant curvature along the line of incongruence (indicated by a significant a_4 coefficient). The first principal axis was parallel to the line of congruence (indicated by a 95% confidence interval for

the p_{11} coefficient that includes 1). Also, there was no curvilinear trend along the line of congruence (indicated by a non-significant a_2 coefficient). The other three criteria were not met. There was a significant slope along the line of incongruence (indicated by a significant a_3 coefficient). The first principal axis was shifted away from the line of congruence in the surface (indicated by a significant p_{10} coefficient). Also, there was a negative linear trend along the line of congruence, rather than a positive linear trend (indicated by a significant but negative a_1 coefficient). Thus, some (but not all) of the criteria to infer support for this variant of the self-insight hypothesis were supported.

Test of positive self-views only hypothesis (linear version – Hypothesis 2a). Only one of the five criteria for inferring a linear effect of positive self-views were met. There was no curvilinear association between self-views and life satisfaction, $b_5 = -.0004$, $SE = .0003$, $p = .19$, C.I. = $-.001$ to $.0002$. The other four criteria were not met. Critically, the coefficient for the relationship between self-views and life satisfaction was not significant, $b_2 = .003$, $SE = .01$, $p = .71$, C.I. = $-.01$ to $.02$. There was an interaction between self-views and abilities, $b_4 = .001$, $SE = .0003$, $p < .01$, C.I. = $.0004$ to $.002$. There was a linear association between abilities and life satisfaction, $b_1 = -.02$, $SE = .01$, $p < .01$, C.I. = $-.03$ to $-.01$. There was also a curvilinear association between abilities and life satisfaction, $b_3 = -.001$, $SE = .0004$, $p < .05$, C.I. = $-.001$ to $-.00002$. Thus, this hypothesis was not supported.

Test of positive self-views only hypothesis (curvilinear version – Hypothesis 2b). The results described in the previous paragraph indicate that none of the criteria for inferring a curvilinear effect of self-views on life satisfaction—including the presence of a curvilinear effect of self-views—was met. Thus, we did not find support for this hypothesis.

Test of optimal margin of illusion hypothesis (Hypothesis 3). Four of the criteria for inferring support for the optimal margin of illusion hypothesis were met. There was significant curvature along the line of incongruence (indicated by a significant and negative a_4 coefficient). Importantly, the first principal axis was shifted away from the line of congruence in the surface in the expected direction (indicated by a significant and positive p_{10} coefficient). Further, the first principal axis was parallel to the line of congruence (indicated by a 95% confidence interval for the p_{11} coefficient that includes 1). Also, there was no curvilinear trend along the line of congruence (indicated by a non-significant a_2 coefficient). However, one criterion was not met: There was a negative linear trend along the line of congruence (indicated by a significant and negative a_1 coefficient). Thus not all of the criteria to infer support for the optimal margin of illusion hypothesis were met, failing to support this hypothesis.

Test of high abilities only hypothesis (linear version – Hypothesis 4a). Two of the five criteria to infer support for the high abilities perspective were met. The criteria that were met were the absence of linear and curvilinear effects of self-views (indicated by non-significant b_2 and b_5 coefficients). The other three criteria were not met. Critically, abilities were significantly and negatively related to life satisfaction (indicated by a significant and negative b_1 coefficient), suggesting the opposite of this hypothesis. Individuals with high abilities to recognize others' emotions were more poorly adjusted than their counterparts who recognize emotions poorly. In addition, there was a significant interaction between self-views and abilities (indicated by a significant b_4 coefficient). Finally, there was a curvilinear association between abilities and life satisfaction (indicated by a significant b_3 coefficient). Thus, this hypothesis was not supported.

Test of high abilities only hypothesis (curvilinear version – Hypothesis 4b). Two of the criteria to infer support for the high abilities perspective were met. There was no linear or

curvilinear effect of self-views (indicated by non-significant b_2 and b_5 coefficients). The other criteria were not met. Abilities exhibited a curvilinear association with life satisfaction (indicated by a significant b_3 coefficient). However, the shape of this curvilinear association was not consistent with the hypothesis because the vertex (the level of ability associated with the highest level of life satisfaction) was at a relatively low level of ability. This reveals that life satisfaction decreased as abilities increased for most levels of abilities. In addition, there was a significant interaction between self-views and abilities (indicated by a significant b_4 coefficient). Thus, this hypothesis was not supported.

Test of positive self-views and high abilities hypothesis (Hypothesis 5). One of the five criteria to infer support for the high abilities perspective was met: the absence of a curvilinear effect of self-views (indicated by a non-significant b_5 coefficient). The other four criteria were not met. There was a negative association (indicated by a significant b_1 coefficient) and a curvilinear association (indicated by a significant b_3 coefficient) between abilities and life satisfaction. Further, there was no association between self-views and life satisfaction (indicated by a non-significant b_2 coefficient). Finally, the interaction between self-views and abilities was significant (indicated by a non-significant b_4 coefficient). As such, we did not find support for the additive hypothesis.

Robustness Check

We conducted the analyses again with common grand-mean centering (i.e., the average of the mean of abilities and the mean of self-views). This value was 52.47, indicating that many data points exceeded the midpoint of the scales (i.e., 36). Centering influences the tests and interpretation of the coefficients for the effects of abilities (b_1) and self-views (b_2), as well as derived coefficients (Edwards & Parry, 1993).

The results can be obtained by running the R code for analysis that is posted online. The results should be considered tentative, because this sample did not provide the estimated required statistical power. Even so, we describe the results to show how we will describe this robustness check in the main study. The results show some changes in the b_1 and b_2 coefficients, although the tests of significance revealed the same conclusions ($b_1 = -.03$, $SE = .01$, $p < .01$, C.I. = $-.05$ to $-.01$; $b_2 = .01$, $SE = .01$, $p = .29$, C.I. = $-.01$ to $.02$).

Although the values changed somewhat, there remained a significant slope along the line of incongruence (indicated by a significant a_3 coefficient: $a_3 = -.03$, $SE = .01$, $p < .01$, C.I. = $-.06$ to $-.01$). However, there was no longer a significant negative linear trend along the line of congruence when it was tested with respect to the common grand mean (indicated by a non-significant a_1 coefficient; $a_1 = -.02$, $SE = .01$, $p = .06$, C.I. = $-.04$ to $.001$). This change indicates that the slope may have been slightly less steep in the area of the response surface where more data points lie. The change in the p value was very small, however (i.e., an increase in the p value from $.048$ to $.06$). Further, the first principal axis was no longer shifted away from the line of congruence when it was tested in relation to the common grand mean (indicated by a non-significant p_{10} coefficient; $p_{10} = 2.58$, $SE = 12.05$, $p = .09$, C.I. = -3.03 to 44.19). Again, the change in the p value was small (i.e., an increase from $.019$ to $.087$).

The results with common grand-mean centering show stronger support for the self-insight only perspective (five criteria are met, instead of three with midpoint centering). The results with the two forms of centering show a similar degree of support for the self-insight plus main effects and the optimal margin of illusion perspectives (in both cases, there are four criteria that are met, although they are not the same ones). These different inferences are the result of small changes

in p values that either cross or fail to cross the threshold of .05. We expect that in our main study with a larger sample, the results will be more robust to different ways of centering.

Exploratory Analyses

In Exploratory analyses with this pilot study should be considered very tentative because this sample did not provide the estimated required statistical power. Even so, because none of the hypotheses was supported, we interpreted the results as an example of the procedure that we would use for the main study. First, we examined the patterns of coefficients from the polynomial regression model and derived coefficients to see if they support any existing model described in past research (Humberg et al., in press). However, the pattern of coefficients did not match any of the existing models. The coefficients suggest a variation of the shifted decreasing ridge pattern (Schönbrodt, 2017), so that adjustment depends on a) perceiving that one's abilities are somewhat higher than they truly are by a set amount and b) having lower rather than higher abilities.

Main Study Test of Assumptions of Statistical Tests

We tested whether our data met the assumptions of OLS regression, specifically regarding normality of residuals and homoscedasticity, for each of the polynomial models. In total, there were six polynomial models (two types of abilities crossed with three facets of adjustment). The results of the tests of normality and heteroscedasticity that are reported in Supplementary Table 1 suggest that the residuals are non-normal (in all of the analyses) and heteroscedastic (in half of the analyses), violating the assumptions of OLS regression. We addressed these violations of assumptions in the following ways. First, evidence suggests that the assumption of normal distribution is typically rejected with large samples, and OLS regression performs adequately in sufficiently large samples (over 100) even when the distribution is non-normal¹. Second, we corrected for any bias in standard errors by estimating robust (White-Huber) standard errors in our models. The R syntax shows that all standard errors are set to be robust standard errors. We also used robust standard errors in our exploratory analyses of self-enhancement effects.

Supplementary Methods

Details of Study Provided on TurkPrime Interface

Title: Emotional and Cognitive Capabilities in Daily Life

Description: This study on emotional and cognitive capabilities in daily life involves completing a 1-hour survey plus seven brief 2-minute daily surveys. You will receive a total of \$12 upon completion of all the surveys in this study. To complete this initial survey, you must use a reliable Internet connection so that the images that are included in the survey load correctly.

Keywords: emotional intelligence, well-being, survey, emotions, questionnaire, attitudes, task.

Consent Form

I agree to take part in this study on emotional and cognitive capabilities in daily life, which involves completing a **1-hour survey plus seven brief 2-minute daily surveys**.

The benefits that I may expect from the study are:

(a) financial compensation of \$12 if I complete all the measures (specifically, \$3 for the initial 1-hour survey, \$1 for each of seven 2-minute daily surveys, and a monetary bonus of \$2 if I complete all of the above (i.e., the initial survey plus all seven daily surveys))

(b) an opportunity to contribute to scientific research

The questions posed to participants in the survey are minimally invasive and pertain to thoughts and feelings that I may commonly experience in daily life. I may choose to skip questions that I do not feel comfortable answering. I can withdraw from the study at any time and still receive compensation for the works that I have completed up to that point. If I wish to withdraw my responses from this study at any time, I will contact Chong He (Chong.He16@mail.rotman.utoronto.ca), and the researchers will discard my responses immediately. In addition, I can withdraw my responses even after completing the study. If I choose to withdraw, my data will be destroyed and not used by the researchers.

I realize my data will be treated in a secure manner, and that this web site will not covertly collect any information that could identify me (such as machine identifiers). Furthermore, I am aware that every effort will be made to ensure confidentiality of any information that is obtained in connection with this study. I will be asked to provide my Turk Prime ID on each of the surveys I will complete to enable the matching of my responses on the different surveys. My Turk Prime ID will be converted to a code number after all data have been matched and before data analyses. After any identifying information is removed, the researchers may post the dataset on research database sites for reviewers or colleagues to verify the analyses.

I understand that I may contact the principal investigator, Stéphane Côté, (Tel: 416-978-5704; Email: scote@rotman.utoronto.ca) or the University of Toronto's Ethics Review office (Tel: 416-946-3273; email: ethics.review@utoronto.ca) if I have any concerns or questions about my involvement in the study.

Upon completion of my participation, I will receive a full written explanation about the purpose of this research. The research study I am participating in may be reviewed for quality assurance to make sure that the required laws and guidelines are followed. If chosen, (a) representative(s) of the Human Research Ethics Program (HREP) may access study-related data and/or consent materials as part of the review. All information accessed by the HREP will be upheld to the same level of confidentiality that has been stated by the research team.

I have read the information letter and the consent form and understand that participation in this study is completely confidential and voluntary.

- Yes/No

Measure of Emotional Abilities

Citation: Beaupré, M. G., & Hess, U. (2005). Cross-cultural emotion recognition among Canadian ethnic groups. *Journal of Cross-Cultural Psychology*, 36, 355-37.

Instructions: In the following task, you will be shown a series of 72 photographs. Each of the 72 photographs will appear for 2 seconds. After 2 seconds, the photograph will disappear, and you will be asked to indicate what emotion the person in the photograph was expressing.

Sample photos:



Images reproduced with permission from Ursula Hess of the Montreal Set of Facial Displays of Emotion.

Measure of Self-Views about Emotional Abilities

Citation:

We adapted the assessment strategy used in: Sheldon, O. J., Dunning, D., & Ames, D. R. (2014). Emotionally unskilled, unaware, and uninterested in learning more: Reactions to feedback about deficits in emotional intelligence. *Journal of Applied Psychology*, 99, 125-137.

In the previous section, you were shown 72 photographs and asked to identify the emotion that the person was expressing in each of the photographs. How many of the emotions do you believe you identified correctly? Choose a number between 0 and 72 that you believe is the number of emotions that you identified accurately.

Measure of Cognitive Abilities

Citation for the original test:

Raven, J. C., Raven, J., & Court, J. H. (1962). *Advanced progressive matrices set II*. Oxford, England: Oxford Psychologists Press.

Citations for the shortened 15-item version of the test:

Denissen, J. J. A., Schönbrodt, F. D., van Zalk, M., Meeus, W. H., & van Aken, M. A. (2011). Antecedents and consequences of peer-rated intelligence. *European Journal of Personality*, 25, 108-119.

Humberg, S., Dufner, M., Schönbrodt, F. D., Geukes, K., Hutteman, R., van Zalk, M. H., ... & Back, M. D. (2018). Enhanced versus simply positive: A new condition-based regression analysis to disentangle effects of self-enhancement from effects of positivity of self-view. *Journal of Personality and Social Psychology*, 114, 303-322.

Instructions: In the following task you will complete a cognitive task. In the following page there will be patterns with a gap. According to the size, each of the pieces underneath fits into gap of the pattern, but only one piece supplements the pattern correctly. Have a thorough look at every piece. When you have found the right piece, select the respective letter (a, b, c, d, e, f, g, or h). At the beginning, the patterns are simple, and then the patterns become more and more difficult.

At first, there are two practice patterns, which will not be included in the test results. Please try to solve these two tasks as just explained. The correct answer to the practice patterns will be presented.

To start the test, please press the next button.

The practice tasks are completed.

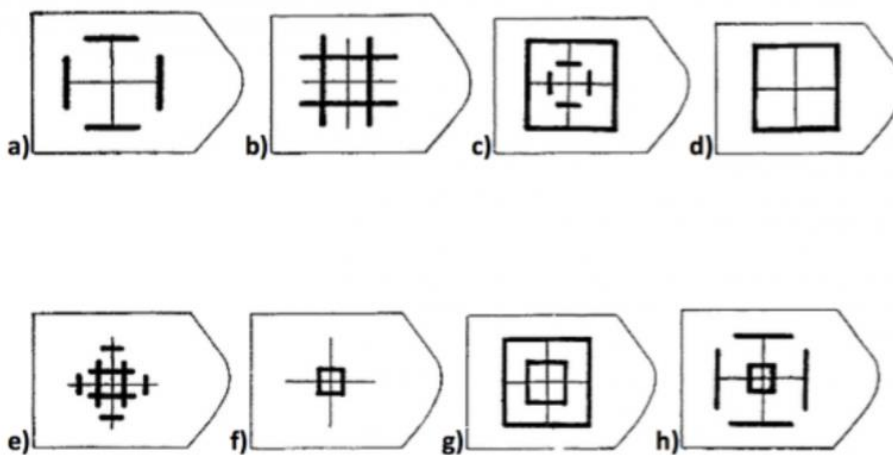
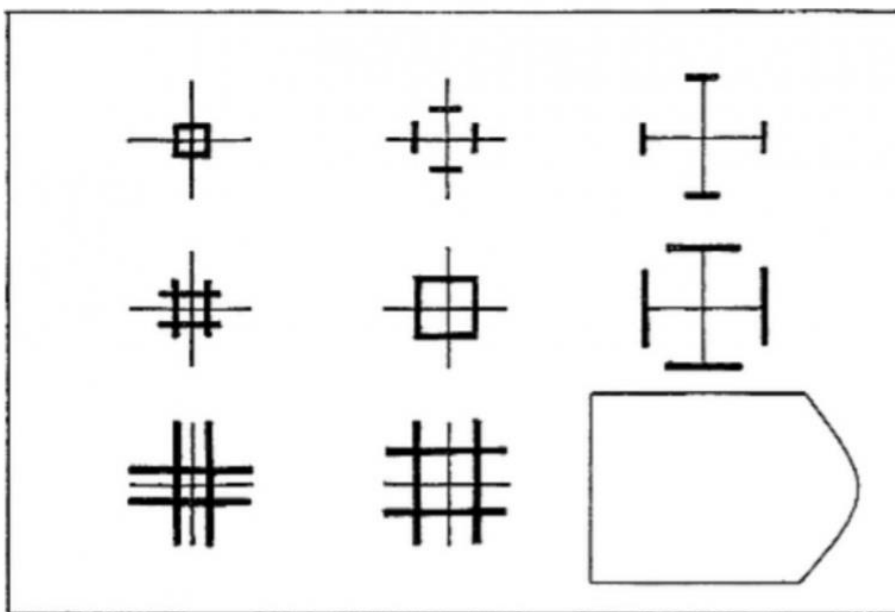
Now the actual test begins. You have 20 minutes. When the time is over, the test will stop automatically. If you are finished before the time, you must wait until the end of the 20 minutes to move to the next task. It is not important to be fast. It is more important to solve as many of the tasks correctly as possible.

Important: For each task, there is only one appropriate answer.

All of the tasks will appear on the same page. From now on, you have to work on the test independently until the end.

To start please click the next button.

Sample Items



What is the correct answer?

- a ☐
 b ☐
 c ☐
 d ☐
 e ☐
 f ☐
 g ☐
 h ☐

Measure of Self-Views about Cognitive Abilities

Citation:

We adapted the assessment strategy used in: Sheldon, O. J., Dunning, D., & Ames, D. R. (2014). Emotionally unskilled, unaware, and uninterested in learning more: Reactions to feedback about deficits in emotional intelligence. *Journal of Applied Psychology*, 99, 125-137.

In the previous section, you were asked to solve 15 problems. How many problems do you believe you solved correctly? Choose a number between 0 and 15 that you believe is the number of problems that you solved correctly.

Measures of Interpersonal Adjustment (Relationship Quality)

Citation: Impett, E. A., Javam, L., Le, B. M., Asyaby-Eshghi, B., & Kogan, A. (2013). The joys of genuine giving: Approach and avoidance sacrifice motivation and authenticity. *Personal Relationships*, 20, 740-754.

Relationship Quality Scale

Please indicate to what extent you agree with the following statements about their relationships in general, including but not limited to relationships with friends, family members, significant others, co-workers, and acquaintances.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	A lot

1. I feel satisfied with my relationships.
2. I feel close to my relationship partners.
3. I feel there is tension between my relationship partners and me. (reverse scored)
4. My relationship partners and I experience conflict. (reverse scored)

Measures of Institutional Adjustment (Career Success)

Citation: Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal*, 33, 64-86.

Career Satisfaction Scale

Please indicate to what extent you agree on the following statements.

1	2	3	4	5
Strongly disagree				Strongly agree

1. I am satisfied with the success I have achieved in my career.
2. I am satisfied with the progress I have made toward meeting my overall career goals.
3. I am satisfied with the progress I have made toward meeting my goals for income.
4. I am satisfied with the progress I have made toward meeting my goals or advancement.
5. I am satisfied with the progress I have made toward meeting my goals for the development of new skills.

Demographics

On the next few pages, you will answer some demographic questions. Your responses will allow us to compare performance on the emotion recognition test. Recall that your responses are confidential and anonymous. Therefore, please answer these questions as honestly as possible.

What is your age?

Please indicate your highest level of education.

- ☐ Less than high school (1)
- ☐ High school graduation or some university (2)
- ☐ University graduation (3)
- ☐ Masters degree (4)
- ☐ PhD degree (5)
- ☐ Professional degree (MD or JD) (6)
- ☐ Other (please specify): (7) _____

Please provide your best estimate of your gross personal income for 2017 (i.e., money you received yourself from all sources, including wages, social assistance programs, interest, dividends, bonuses etc., before taxes last year).

- ☐ \$0 (no income) (1)
- ☐ \$1-\$4,999 (2)
- ☐ \$5,000-\$9,999 (3)
- ☐ \$10,000-\$14,999 (4)
- ☐ \$15,000-\$19,999 (5)
- ☐ \$20,000-\$24,999 (6)
- ☐ \$25,000-\$29,999 (7)
- ☐ \$30,000-\$39,999 (8)
- ☐ \$40,000-\$49,999 (9)
- ☐ \$50,000-\$59,999 (10)
- ☐ \$60,000-\$69,999 (11)
- ☐ \$70,000-\$84,999 (12)
- ☐ \$85,000-\$99,999 (13)
- ☐ \$100,000-\$149,999 (14)
- ☐ \$150,000-\$199,999 (15)
- ☐ \$200,000-\$249,999 (16)
- ☐ \$250,000-\$299,999 (17)
- ☐ \$300,000-\$349,999 (18)
- ☐ \$350,000-\$399,999 (19)
- ☐ \$400,000-\$449,999 (20)
- ☐ \$450,000-\$500,000 (21)

☐ more than \$500,000 (please specify exact amount: _____) (22)

What is your gender? _____

Please indicate the broad ethnic group(s) that best describe(s) you (click more than one if applicable):

Caucasian (1)

East Asian (2)

Southeast Asian (3)

West Indian (4)

Middle Eastern (5)

African American (6)

Hispanic (7)

Other (specify) (8) _____

Debriefing Form

The study you have just participated in was designed to examine whether people who possess accurate self-insight into their emotional and cognitive intelligence have higher well-being. While some philosophers and researchers argue that having self-insight into abilities is better for well-being, others have argued that possessing an enhanced positive illusion about the self (i.e., thinking you have higher ability than you actually do) predicts well-being. Yet another possibility is that abilities are related to well-being regardless of people's beliefs about these abilities. In this study we pitted these competing perspectives against each other to examine whether self-insight predicted well-being.

The results of this research are expected to be extremely valuable to the scientific community, and the results also have real life implications. Past research has not clearly indicated whether people who are accurate in their self-evaluations are happier, with some results showing that people who overestimate their abilities are happier, other results showing that people who underestimate their ability are happier, and finally results showing that people with self-insight are happier. Thus, your participation in this study will help us resolve these conflicting views.

If you are interested in learning about the results of this study, or about related topics, please do not hesitate to contact us.

Thank you again for assisting with this important study!

Additional Descriptive Information

Ethnicity. A total of 718 (69%) participants identified as Caucasian; 182 (17%) identified as Hispanic; 124 (12%) identified as African American; 54 (5%) identified as Asian; and 33 (3%) reported another ethnic group (the sum of percentages exceeds 100 because participants could choose more than one option).

Income. The average income was \$43470 ($SD = \40210).

Education. Ten participants (1%) reported having less than a high school education; 394 (38%) reported high school graduation or some university; 458 (44%) reported university graduation; 133 (13%) reported a Master's degree; 10 (1%) reported a PhD degree; 23 (2%) reported a professional degree (MD or JD); and 16 (2%) selected the “other” option.

Marital status. A total of 488 (47%) were married, 281 (27%) were single; 119 (11%) were in a relationship and cohabitating but not married; 72 (7%) were in a relationship but not cohabitating; 61 (6%) were divorced; 9 (1%) were separated; and 7 (1%) were widowed.

Supplementary Tables

Supplementary Table 1

Test of Assumptions for Ordinary Least Squares (OLS) Regression

Facet of Adjustment	Normality Tests		Homoscedasticity tests
	Shapiro-Wilk Test	Kolmogorov-Smirnov Test	Breush-Pagan Test
Emotional Abilities and Self-Views			
Life satisfaction	.945 ($P < .001$)	.093 ($P < .001$)	20.22 ($P = .001$)
Career satisfaction	.973 ($P < .001$)	.064 ($P < .001$)	10.65 ($P = .059$)
Relationship satisfaction	.972 ($P < .001$)	.063 ($P < .001$)	28.06 ($P < .001$)
Cognitive Abilities and Self-Views			
Life satisfaction	.946 ($P < .001$)	.096 ($P < .001$)	11.40 ($P = .043$)
Career satisfaction	.971 ($P < .001$)	.067 ($P < .001$)	7.24 ($P = .203$)
Relationship satisfaction	.974 ($P < .001$)	.070 ($P < .001$)	4.67 ($P = .457$)

Note. Coefficients are displayed first and p-values are displayed in parentheses. For the normality tests (Shapiro-Wilk Test and Kolmogorov-Smirnov Test), the null hypothesis is that the residuals are normally distributed. A significant coefficient for the normality test indicates that the residuals are non-normal. For the Breush-Pagan test of homoscedasticity, the null hypothesis is that residuals are normally distributed. A significant coefficient for the Breush-Pagan test indicates that the data are not homoscedastic.

Supplementary Table 2*Robustness Check: Polynomial Regression Coefficients and Derived Coefficients with Common Grand-Mean Centered Predictors*

Facet of Adjustment	R ² of full model	a ₁	a ₂	a ₃	a ₄	p ₁₀	p ₁₁	b ₁	b ₂	b ₃	b ₄	b ₅
Emotional Abilities and Self-Views												
Life satisfaction	.012 P = .037	.011 (.009) P = .231 [-.007, .030]	.001 (.001) P = .326 [-.001, .002]	-.009 (.012) P = .474 [-.033, .015]	.002 (.001) P = .045 [.000, .003]	-34.81 (90.03) P = .699 [-211.27, 141.64]	-.246 (.321) P = .443 [-.875, .382]	.001 (.009) P = .890 [-.017, .019]	.010 (.006) P = .100 [-.002, .022]	.001 (.000) P = .025 [.000, .002]	.000 (.001) P = .446 [-.001, .001]	.000 (.000) P = .627 [-.001, .001]
Career satisfaction	.022 P < .001	.000 (.006) P = .990 [-.012, .012]	.001 (.000) P = .205 [.000, .002]	-.019(.009) P = .033 [-.036, .002]	.001 (.001) P = .148 [.000, .002]	-15.42 (25.0) P = .538 [-64.43, 33.59]	-.236 (.676) PP = .727 [-1.56, 1.09]	-.009 (.006) P = .131 [-.021, .003]	.009 (.004) P = .034 [.001, .018]	.001 (.000) P = .072 [.000, .001]	.000 (.00) P = .727 [-.001, .001]	.000 (.000) P = .387 [.000, .001]
Relationship satisfaction	.056 P < .001	.001 (.003) P = .660 [-.004, .007]	.000 (.000) P = .107 [.000, .001]	-.005 (.004) P = .188 [-.012, .002]	.001 (.000) P < .001 [.001, .002]	-33.46 (121.60) P = .783 [-271.8, 204.9]	-.249 (.169) P = .142 [-.580, .083]	-.002 (.003) P = .500 [-.007, .004]	.003 (.002) P = .115 [-.001, .007]	.001 (.000) P < .001 [.000, .001]	.000 (.000) P = .110 [-.001, .000]	.000 (.000) P = .612 [.000, .000]
Cognitive Abilities and Self-Views												
Life satisfaction	.007 P = .202	-.021 (.022) P = .338 [-.063, .022]	-.002 (.006) P = .758 [-.013, .009]	-.060 (.043) P = .161 [-.144, .024]	-.003 (.011) P = .807 [-.025, .019]	134.78 (1557.3) P = .931 [-2917, 3187]	44.94 (528.0) P = .932 [-989.9, 1079.8]	-.041 (.023) P = .075 [-.085, .004]	.020 (.025) P = .435 [-.030, .069]	-.007 (.005) P = .142 [-.016, .002]	.001 (.006) P = .932 [-.011, .012]	.005 (.005) P = .336 [-.005, .014]
Career satisfaction	.016 P = .005	-.018 (.014) P = .213 [-.046, .010]	.001 (.004) P = .867 [-.007, .008]	-.078 (.028) P = .006 [-.133, -.023]	-.001 (.007) P = .875 [-.015, .013]	109.30 (499.7) P = .827 [-870, 1088]	10.12 (45.0) PP = .822 [-78.08, 98.32]	-.048 (.015) P = .001 [-.077, -.019]	.030 (.017) P = .072 [-.003, .063]	-.002 (.003) P = .437 [-.008, .004]	.001 (.004) P = .819 [-.007, .008]	.002 (.003) P = .526 [-.004, .008]
Relationship satisfaction	.033 P < .001	-.017 (.007) P = .010 [-.030, -.004]	.001 (.02) P = .462 [-.002, .005]	-.037 (.014) P = .009 [-.065, -.009]	.005 (.004) P = .173 [-.002, .012]	-72.44 (101.5) P = .475 [-271.4, 126.5]	-4.86 (5.11) P = .342 [-14.87, 5.16]	-.027 (.007) P < .001 [-.042, -.013]	.010 (.008) P = .237 [-.006, .026]	-.001 (.001) P = .665 [-.004, .002]	-.002 (.002) P = .332 [-.006, .002]	.004 (.002) P = .022 [.001, .007]

Note. Coefficients are displayed first, standard errors are in parentheses, and 95% confidence intervals are displayed in square brackets. Coefficients are taken or derived from a full polynomial regression model in which adjustment is regressed on abilities, self-views, their interaction, and their squared terms. b₁ is the coefficient for abilities, b₂ is the coefficient for self-views, b₃ and b₅ are the coefficients for the squared terms for abilities and self-views, respectively, and b₄ is the coefficient for the interaction between abilities and self-views. The other coefficients are derived coefficients that test aspects of the response surface. For all models with emotional abilities, d.f. = 1016; for models with cognitive abilities and life and career satisfaction, d.f. = 1032; for cognitive abilities and relationship satisfaction, d.f. = 1030.

Supplementary Table 3*Test of Explained Variance of Second-Order Terms over and above First-Order Terms in Full Polynomial Model*

Facet of Adjustment	R ² of linear model	R ² of polynomial model	F-Test
Emotional Abilities and Self-Views			
Life satisfaction	R ² = .008 (<i>P</i> = .049) F(2, 1019) = 3.89	R ² = .012 (<i>P</i> = .037) F(5, 1016) = 2.38	F(3, 1016) = 1.37 (<i>P</i> = .249)
Career satisfaction	R ² = .019 (<i>P</i> < .001) F(2, 1019) = 9.72	R ² = .022 (<i>P</i> < .001) F(5, 1016) = 4.52	F(3, 1016) = 1.06 (<i>P</i> = .367)
Relationship satisfaction	R ² = .036 (<i>P</i> < .001) F(2, 1018) = 19.17	R ² = .056 (<i>P</i> < .001) F(5, 1015) = 11.97	F(3, 1015) = 6.94 (<i>P</i> < .001)
Cognitive Abilities and Self-Views			
Life satisfaction	---	---	---
Career satisfaction	R ² = .015 (<i>P</i> < .001) F(2, 1035) = 8.02	R ² = .016 (<i>P</i> = .004) F(5, 1032) = 3.39	F(3, 1032) = .316 (<i>P</i> = .814)
Relationship satisfaction	R ² = .027 (<i>P</i> < .001) F(2, 1033) = 14.33	R ² = .033 (<i>P</i> < .001) F(5, 1032) = 6.94	F(3, 1032) = 1.98 (<i>P</i> = .115)

Note. The linear model includes the coefficients for abilities and self-views. The polynomial model includes these coefficients plus their interaction and squared terms. We did not conduct this analyses for the model with cognitive abilities and life satisfaction because the full polynomial model was not significant, and therefore no interpretation of this model was possible.

Supplementary Table 4*Polynomial Regression Coefficients and Derived Coefficients with Standardized Predictors*

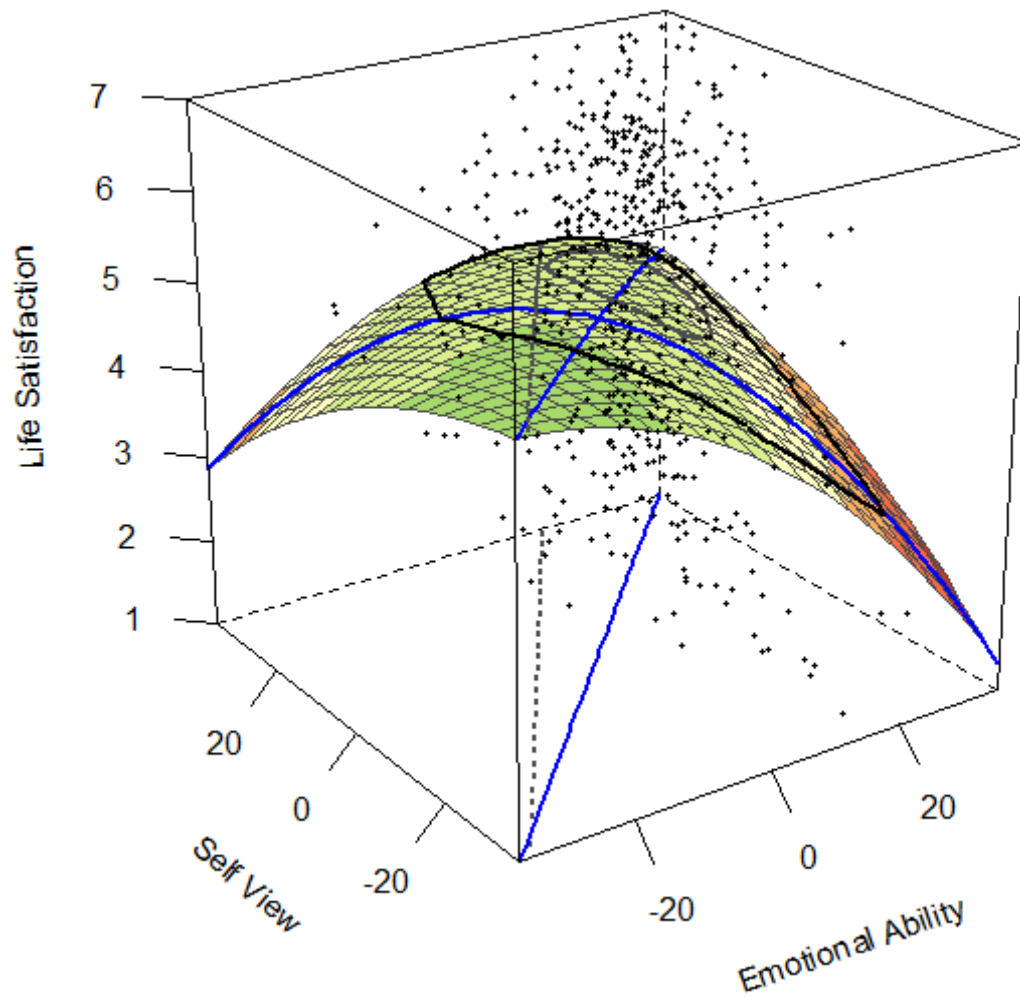
Facet of Adjustment	R ² of full model	a ₁	a ₂	a ₃	a ₄	p ₁₀	p ₁₁	b ₁	b ₂	b ₃	b ₄	b ₅
Emotional Abilities and Self-Views												
Life satisfaction	.012 <i>P</i> = .037	.079 (.080) <i>P</i> = .327 [-.079, .236]	.056 (.065) <i>P</i> = .391 [-.072, .184]	-.154 (.096) <i>P</i> = .109 [-.342, .034]	.123 (.065) <i>P</i> = .058 [-.004, .251]	-3.83 (.009) <i>P</i> = .686 [-22.39, 14.73]	-.293 (.387) <i>P</i> = .448 [-1.05, .465]	-.038 (.062) <i>P</i> = .541 [-.159, .083]	.116 (.063) <i>P</i> = .066 [-.008, .240]	.071 (.032) <i>P</i> = .025 [.009, .133]	-.034 (.044) <i>P</i> = .446 [-.120, .053]	.019 (.038) <i>P</i> = .627 [-.057, .094]
Career satisfaction	.022 <i>P</i> < .001	.000 (.054) <i>P</i> = .994 [-.105, .105]	.049 (.041) <i>P</i> = .231 [-.031, .130]	-.208 (.067) <i>P</i> = .002 [-.338, -.077]	.072 (.052) <i>P</i> = .163 [-.029, .173]	-1.65 (3.14) <i>P</i> = .600 [-7.80, 4.51]	-.337 (.989) <i>P</i> = .733 [-2.28, 1.60]	-.104 (.042) <i>P</i> = .013 [-.185, -.022]	.104 (.044) <i>P</i> = .018 [.018, .190]	.038 (.021) <i>P</i> = .072 [-.003, .079]	-.011 (.033) <i>P</i> = .727 [-.075, .052]	.023 (.026) <i>P</i> = .387 [-.029, .075]
Relationship satisfaction	.056 <i>P</i> < .001	-.010 (.027) <i>P</i> = .709 [-.063, .043]	.032 (.024) <i>P</i> = .175 [-.014, .079]	-.094 (.033) <i>P</i> = .004 [-.158, -.030]	.088 (.027) <i>P</i> = .001 [.035, .142]	-3.68 (12.79) <i>P</i> = .774 [-28.75, 21.40]	-.288 (.200) <i>P</i> = .151 [-.680, .105]	-.052 (.019) <i>P</i> = .006 [-.090, -.015]	.042 (.023) <i>P</i> = .069 [-.003, .087]	.052 (.014) <i>P</i> < .001 [.026, .079]	-.028 (.018) <i>P</i> = .110 [-.063, .006]	.008 (.015) <i>P</i> = .612 [-.022, .038]
Cognitive Abilities and Self-Views												
Life satisfaction	.007 <i>P</i> = .202	-.004 (.063) <i>P</i> = .945 [-.127, .118]	-.027 (.058) <i>P</i> = .644 [-.140, .087]	-.177 (.100) <i>P</i> = .076 [-.372, .018]	-.037 (.116) <i>P</i> = .748 [-.264, .189]	27.91 (323.4) <i>P</i> = .931 [-606.0, 661.8]	45.74 (536.2) <i>P</i> = .932 [-1005.1, 1096.6]	-.091 (.059) <i>P</i> = .127 [-.207, .026]	.086 (.058) <i>P</i> = .138 [-.028, .200]	-.076 (.052) <i>P</i> = .142 [-.177, .025]	.005 (.061) <i>P</i> = .932 [-.125, .004]	.044 (.046) <i>P</i> = .336 [-.045, .133]
Career satisfaction	.016 <i>P</i> = .005	-.040 (.042) <i>P</i> = .345 [-.123, .043]	.003 (.038) <i>P</i> = .938 [-.072, .078]	-.245 (.068) <i>P</i> < .001 [-.378, -.122]	-.015 (.073) <i>P</i> = .838 [-.159, .129]	29.75 (137.1) <i>P</i> = .828 [-238.9, 298.4]	10.19 (44.91) <i>P</i> = 820 [-77.83, 98.21]	-.143 (.040) <i>P</i> < .001 [-.221, -.064]	.103 (.040) <i>P</i> = .010 [.025, .180]	-.026 (.033) <i>P</i> = .437 [-.090, .039]	.009 (.039) <i>P</i> = .819 [-.068, .086]	.020 (.031) <i>P</i> = .526 [-.041, .081]
Relationship satisfaction	.033 <i>P</i> < .001	-.034 (.021) <i>P</i> = .101 [-.075, .007]	.009 (.017) <i>P</i> = .588 [-.025, .043]	-.150 (.035) <i>P</i> < .001 [-.219, -.081]	.049 (.038) <i>P</i> = .203 [-.026, .124]	-19.88 (28.36) <i>P</i> = .483 [-75.46, 35.70]	-4.63 (4.97) <i>P</i> = .352 [-14.38, 5.12]	-.092 (.024) <i>P</i> < .001 [-.133, .052]	.058 (.021) <i>P</i> = .004 [.018, .098]	-.007 (.020) <i>P</i> = .665 [-.040, .025]	-.020 (.017) <i>P</i> = .332 [-.059, .020]	.036 (.020) <i>P</i> = .022 [.005, .067]

Note. Coefficients are displayed first, standard errors are in parentheses, and 95% confidence intervals are displayed in square brackets. Coefficients are taken or derived from a full polynomial regression model in which adjustment is regressed on abilities, self-views, their interaction, and their squared terms. *b*₁ is the coefficient for abilities, *b*₂ is the coefficient for self-views, *b*₃ and *b*₅ are the coefficients for the squared terms for abilities and self-views, respectively, and *b*₄ is the coefficient for the interaction between abilities and self-views. The other coefficients are derived coefficients that test aspects of the response surface. For all models with emotional abilities, d.f. = 1016; for models with cognitive abilities and life and career satisfaction, d.f. = 1032; for cognitive abilities and relationship satisfaction, d.f. = 1030.

Supplementary Table 5*Results of Exploratory Analyses of Self-Enhancement using Condition-Based Regression Analysis with Standardized Predictors*

Outcome Variable	c ₁	c ₂	c ₁ + c ₂	c ₂ - c ₁	abs
Emotional Abilities and Self-Views					
Life satisfaction	-.102 (.047) <i>P</i> = .031 [-.194, -.010]	.117 (.050) <i>P</i> = .019 [.020, .214]	.015 (.065) <i>P</i> = .815 [-.112, .142]	.219 (.072) <i>P</i> = .002 [-.078, .360]	.204 (.094) <i>P</i> = .031 [.019, .388]
Career satisfaction	-.138 (.032) <i>P</i> < .001 [-.201, -.075]	.090 (.035) <i>P</i> = .010 [.022, .159]	-.047 (.043) <i>P</i> = .27 [-.132, .037]	.228 (.052) <i>P</i> < .001 [.127, .329]	.18 (.070) <i>P</i> = .01 [.044, .317]
Relationship satisfaction	---	---	---	---	---
Cognitive Abilities and Self-Views					
Life satisfaction	---	---	---	---	---
Career satisfaction	-.147 (.037) <i>P</i> < .001 [-.220, -.074]	.099 (.038) <i>P</i> = .010 [.024, .174]	-.048 (.040) <i>P</i> = .229 [-.127, .030]	.246 (.064) <i>P</i> < .001 [.120, .372]	.198 (.077) <i>P</i> = .01 [.047, .349]
Relationship satisfaction	-.099 (.020) <i>P</i> < .001 [-.139, -.060]	.059 (.020) <i>P</i> < .001 [-.139, -.060]	-.040 (.020) <i>P</i> < .001 [-.139, -.060]	.158 (.020) <i>P</i> < .001 [-.139, -.060]	.12 (.020) <i>P</i> < .001 [-.139, -.060]

Note. c₁ is the coefficient for abilities and c₂ is the coefficient for self-views in a regression model that only includes these two predictors. abs is a derived coefficient that tests self-enhancement. We did not test self-enhancement effects for emotional abilities and relationship satisfaction because the second-order polynomial terms explained variance over and above the first-order terms. We did not test self-enhancement effects for cognitive abilities and life satisfaction because the full polynomial model was not significant, and therefore no interpretation of this model is possible.



Supplementary Figure 1. Response surface graph for the association between abilities, self-views, and adjustment.

Association was estimated based on the pilot data ($n = 562$). Emotional abilities are on the x axis (on the bottom right), self-views about emotional abilities are on the y axis (on the bottom left), and life satisfaction is on the vertical, z axis. The graph is color-coded so that green depicts the highest levels of adjustment and red depicts the lowest levels.

Supplementary Reference

1. Lumley, T., Diehr, P., Emerson, S., & Chen, L. (2002). The importance of the normality assumption in large public health data sets. *Annual Review of Public Health*, 23(1), 151-169.