

Supplemental Material

Stereotypes and Social Decisions:

The Interpersonal Consequences of Socioeconomic Status

Bradley T. Hughes^{1,2}, Rachel Jacobson¹, Nicholas O. Rule², & Sanjay Srivastava¹

University of Oregon¹

University of Toronto²

Author Note

Bradley T. Hughes <https://orcid.org/0000-0002-3799-151X>

Rachel Jacobson <https://orcid.org/0000-0002-8667-5804>

Nicholas O. Rule <https://orcid.org/0000-0002-2332-9058>

Sanjay Srivastava <https://orcid.org/0000-0001-6899-664X>

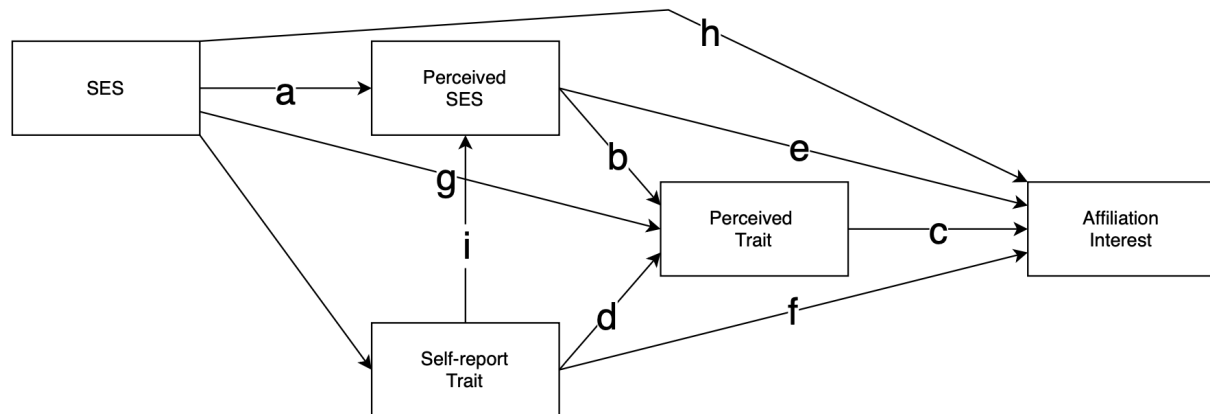
The preregistration for the methods, the R code for analysis, and data are available on OSF: <https://osf.io/yhu4t/>.

Correspondence concerning this article should be addressed to Bradley T. Hughes:
email: hughes.bradleyt@gmail.com; 100 St. George Street, Toronto, ON M5S 3G3; phone: 416-978-5201.

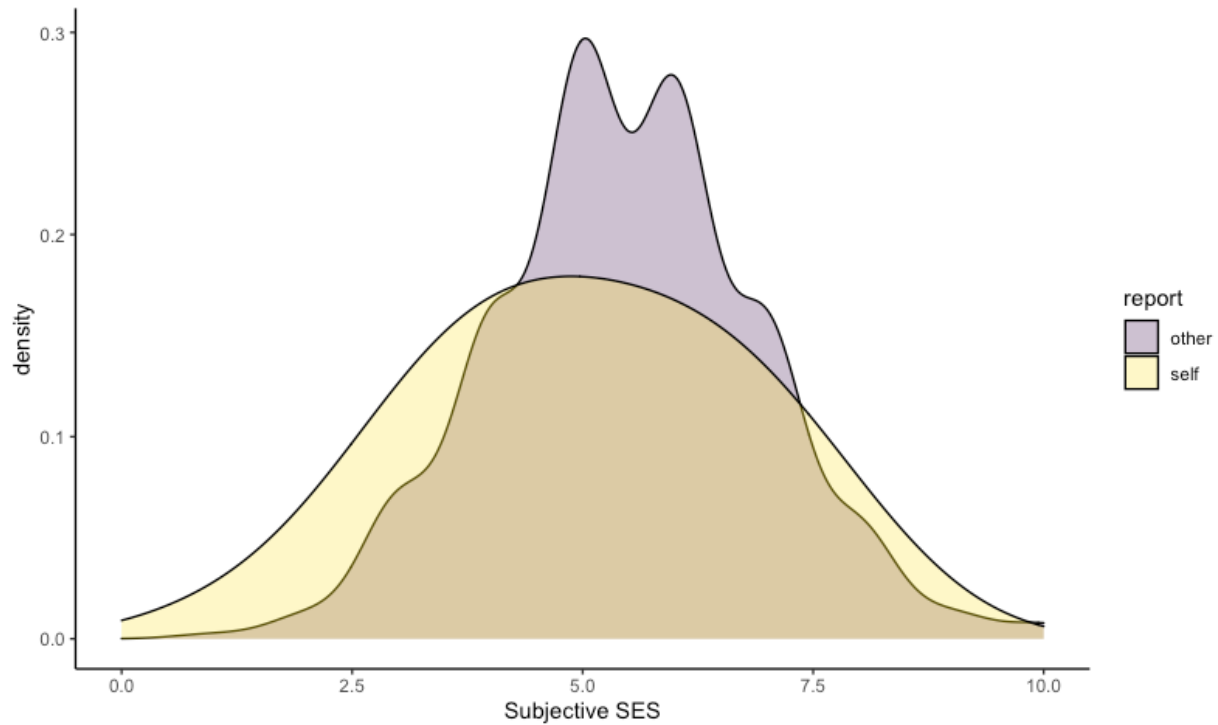
Supplemental Material

Figure S1

The Full Extended Interpersonal Stereotype Model (ISM) for the Effect of SES and SES-based Stereotypes on Affiliation Interest



Note. This is the saturated ISM we fit to estimate the indirect effects of SES reported in the manuscript.

Figure S2*Distributions of Self-report and Other-report Subjective SES***Preregistered Analyses**

We preregistered reporting self-other agreement and social relations model (SRM) variance decomposition for each trait. We report the results from the SRM for each perception in Table S1.

Table S1*Variance Decomposition (Standardized) and Self-other Agreement*

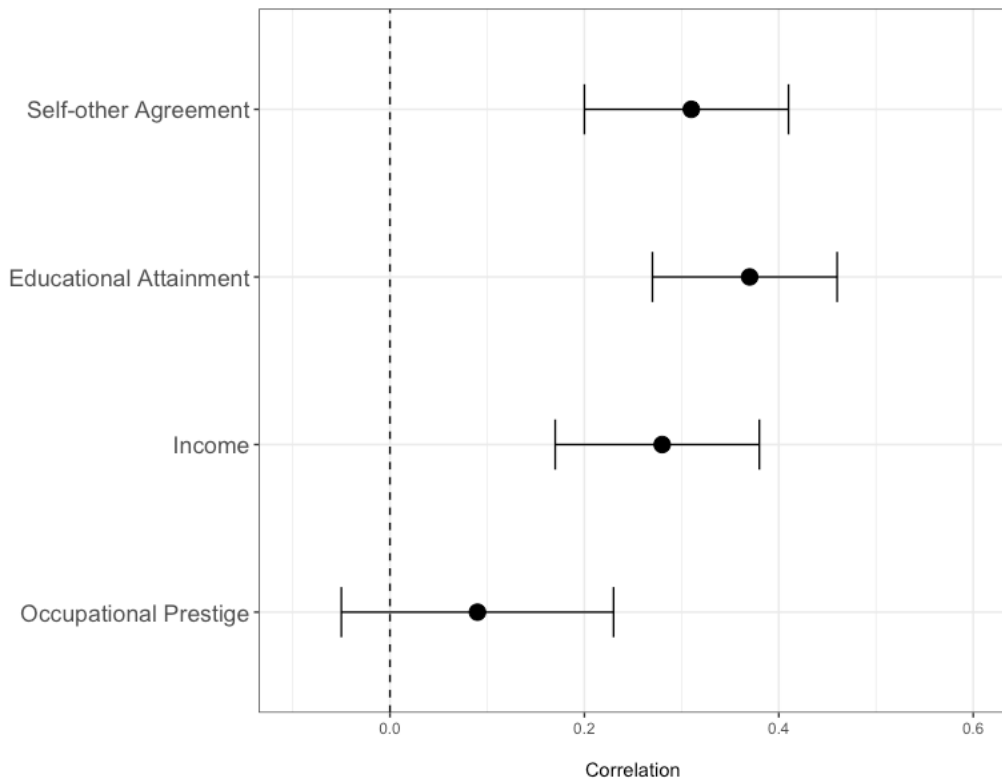
Instrument	Measure	Self-other Agreement	Consensus (Target Variance)	Assimilation (Perceiver Variance)	Relationship and Error
MacArthur Ladder	SES	.31	.16	.39	.45
BFI+	Agreeableness	.15	.13	.35	.52
	Conscientiousness	.25	.17	.34	.49
	Extraversion	.38	.40	.15	.46
	Honesty/Propriety	.20	.07	.46	.47
	Neuroticism	.29	.17	.38	.45
	Openness	.13	.22	.28	.49
Stereotype Content	Competence	.32	.23	.30	.47
	Warmth	.15	.16	.31	.53
Single-item Measures	Impulsivity	.26	.06	.26	.69
	Intelligence	.07 ^a	.14	.34	.52
	Laziness	.23	.15	.31	.54
	Trustworthiness	.14	.08	.32	.60
Interpersonal Judgments	Credibility Business	-	.27	.24	.49
	Credibility Person	-	.05 ^a	.26	.69
	Interest in Affiliation	-	.18	.31	.51
	Net Promoter Score	.39	.19	.31	.50
	Sympathy	-	.10	.25	.65

Note. $df = 236$.^a $p > .05$; all other values significantly differ from zero.

We report the standardized variances here, but the significance levels are associated with the unstandardized estimates.

Accuracy with other SES Indicators as Criterion

We calculated how target effects of SES correlated with self-reports of other common SES indicators. There were substantial correlations for educational attainment, $r(295) = .37, p < .001$, 95% *CI* [.27, .47] and income, $r(295) = .28, p < .001$, 95% *CI* [.17, .38]. Others' ladder judgments did not correlate with occupational prestige, $r(192) = .09, p = .198$, 95% *CI* [-.05, .23]; Figure S2. The degrees of freedom are different for the occupational prestige analysis because we do not have prestige scores for respondents who indicated they were students, homemakers, retired, or unemployed.

Figure S2*Self-Other Agreement (Accuracy) in SES Perceptions*

Note. Self-other agreement is the correlation between targets' self-report and participants' perception (i.e., target effects) of the same judgment (here, SES). In this figure, we also present the correlations between the other self-report indicators of SES and the target effects of SES; these correlations can be considered estimates of accuracy via alternative indicators of SES, but do not strictly represent self-other agreement because participants did not judge all of these items.

Interpersonal Stereotypes with Other Indicators of SES

To examine if interpersonal stereotype of SES were dependent on the indicator of SES, or using target effects of SES, we estimated interpersonal stereotypes with self-reported indicators of SES. The results are reported in Table S2.

Table S2

The Standardized Associations Between Self-Report Indicators of SES and Target Effect of Traits, Controlling for Self-Reported Trait Level

Instrument	Measure	Self-report SES	Educational Attainment	Income	Occupational Prestige
Big Five+	Agreeableness	.14 [†]	.16*	.11	.08
	Conscientiousness	.19*	.28*	.09	.08
	Extraversion	.10	.13*	.07	-.03
	Honesty/Propriety	.13 [†]	.14*	.11	.09
	Neuroticism	-.23*	-.26*	-.15*	-.15 [†]
	Openness	.14 [†]	.12*	.08	.08
Stereotype Content	Competence	.20*	.27*	.12 [†]	.15 [†]
	Warmth	.16*	.19*	.11	.09
Single-item Measures	Impulsivity	-.13 [†]	-.19*	.03	.11
	Intelligence	.27*	.27*	.12 [†]	.15 [†]
	Laziness	-.20*	-.24*	-.07	-.08
	Trustworthiness	.15 [†]	.19*	.06	.13

Note. Perceived SES (Table 4) was the preregistered indicator of SES for the interpersonal stereotype content analyses. This table reports parameter estimates from parallel analyses conducted with the self-report SES indicators for comparison.

[†] $p < .05$, *** $p < .005$

The results of these analyses show a consistent pattern for both self-reported SES and educational attainments. The stereotypes in these models are smaller but significant and in the same direction of the preregistered models with target effects of SES. This provides further support for the hypothesis that SES elicits interpersonal stereotypes in a wide range of personality traits. However, we were not able to detect these same stereotypes with income and occupational prestige showing differences in how components of SES affect interpersonal perceptions of personality traits. These differences could be attributed to different effects or because these indicators are not as precise in measuring individual's actual SES.

We also estimated the total effects of these other indicators of SES on the 5 social outcomes. These results showed that some self-report indicators of SES (subjective, educational attainment) are related to affiliation interest, but not judgments of consumers. This suggests that perceived SES is more important to interpersonal judgments than an individual's actual SES.

Table S3*Associations Between SES Indicators and Social Decisions*

SES	Outcome	<i>b</i>	95% <i>CI</i>	β	<i>F</i>	<i>R</i> ²
Perceived SES ^a	Interest in Affiliation	0.27*	[0.20, 0.34]	.41	60.39	.17
	Credibility of Person	0.12*	[0.07, 0.17]	.26	21.49	.07
	Sympathy	0.10*	[0.05, 0.16]	.20	12.75	.04
	Credibility of Business	0.01	[-0.10, 0.12]	.01	0.02	.00
	Net Promoter Score	0.10	[-0.16, 0.36]	.04	0.55	.00
Subjective SES ^a	Interest in Affiliation	0.05*	[0.02, 0.08]	.20	12.77	.04
	Credibility of Person	0.01	[-0.01, 0.03]	.07	1.27	.00
	Sympathy	0.01	[-0.01, 0.04]	.07	1.35	.00
	Credibility of Business	0.01	[-0.03, 0.05]	.03	0.24	.00
	Net Promoter Score	0.07	[-0.03, 0.18]	.09	2.08	.01
Educational Attainment ^a	Interest in Affiliation	0.06*	[0.03, 0.10]	.20	11.66	.04
	Credibility of Person	0.03†	[0.00, 0.05]	.12	4.43	.01
	Sympathy	0.02	[-0.01, 0.04]	.06	1.04	.00
	Credibility of Business	0.02	[-0.03, 0.07]	.04	0.56	.00
	Net Promoter Score	0.11	[-0.02, 0.24]	.10	2.66	.01
Income ^a	Interest in Affiliation	0.01	[-0.00, 0.03]	.08	2.15	.01
	Credibility of Person	0.00	[-0.01, 0.01]	.02	0.10	.00
	Sympathy	0.01	[-0.01, 0.02]	.05	0.86	.00
	Credibility of Business	0.03†	[0.00, 0.05]	.12	4.39	.01
	Net Promoter Score	0.04	[-0.02, 0.10]	.08	1.86	.01
Occupational Prestige ^b	Interest in Affiliation	0.00	[-0.00, 0.01]	.09	1.55	.01
	Credibility of Person	0.00	[-0.00, 0.00]	.04	0.26	.00
	Sympathy	0.00	[-0.00, 0.01]	.07	0.88	.00
	Credibility of Business	-0.00	[-0.01, 0.01]	-.01	0.01	.00
	Net Promoter Score	0.00	[-0.02, 0.02]	.01	0.00	.00

Note. ^a df = (1, 295).

^b df = (1, 192).

† $p < .05$, *** $p < .005$.

The degrees of freedom are different for the occupational prestige analysis because we do not have prestige scores for respondents who indicated they were students, homemakers, retired, or unemployed.

Preregistered ISM Path Coefficients

Based on reviewer and editor suggestions, we added target effects of SES to the ISM we used to test indirect effects of SES on outcomes through interpersonal stereotypes. In Table S4 we report the results from the preregistered ISMs. The results for the indirect path a^*c are in line with the new, extended ISM but are smaller in magnitude.

Table S4

Standardized Parameter Estimates for Preregistered Interpersonal Stereotype Model for SES

Outcomes	Traits	Model Paths					
		a^*c	a	b	c	d	e
Affiliation Interest	Agreeableness	.09*	.14*	.12	.64***	.10*	-.01
	Conscientiousness	.11***	.19***	.18***	.54***	.09	-.07
	Extraversion	.05	.10	.32***	.52***	.12*	-.04
	Honesty/Propriety	.05*	.13*	.18***	.38***	.15**	-.03
	Neuroticism	.12**	-.24***	.20***	-.51***	.09	.11*
	Openness	.09**	.14**	.11*	.63***	.11*	-.01
	Competence	.13***	.20***	.24***	.65***	.05	-.04
	Warmth	.12**	.16**	.11*	.76***	.08	-.01
	Intelligence	.16***	.26**	.03	.61***	.03	.05
	Impulsivity	.02	-.13*	.22***	-.14*	.18**	.00
Credibility of Consumer	Laziness	.09***	-.20***	.18**	-.44***	.11*	.02
	Trustworthiness	.09**	.15**	.12*	.62***	.11*	.04
	Agreeableness	.05*	.14*	.12	.33***	.01	.00
	Conscientiousness	.07***	.19***	.18**	.38***	-.01	-.05

Outcomes	Traits	Model Paths					
		a*c	a	b	c	d	e
	Extraversion	.02	.10	.32***	.18**	.03	.02
	Honesty/Propriety	.03	.13*	.18**	.24**	.03	-.01
	Neuroticism	.07**	-.23***	.20***	-.30***	-.01	.03
	Openness	.06*	.14**	.11*	.39***	.01	-.08
	Competence	.08**	.20***	.24***	.40***	-.02	-.09
	Warm	.06**	.16**	.11*	.40***	-.00	.01
	Intelligence	.13***	.27***	.03	.49***	-.06	-.04
	Impulsivity	.01	-.13*	.22***	-.11	.04	-.04
	Laziness	.05**	-.20***	.18**	-.25***	.01	-.01
	Trustworthiness	.05*	.15**	.12*	.33***	.01	.02
Sympathy for Consumer	Agreeableness	.06*	.14*	.12	.44***	.00	-.02
	Conscientiousness	.07**	.19***	.18**	.34***	.01	-.09
	Extraversion	.03	.10	.32***	.29***	.04	-.09
	Honesty/Propriety	.04*	.13*	.18**	.34***	.02	-.00
	Neuroticism	.06**	-.23***	.20***	-.26***	.01	.05
	Openness	.05*	.14**	.11*	.38***	.01	-.12
	Competence	.07**	.20***	.24***	.34***	-.00	-.08
	Warm	.08**	.16**	.11*	.50***	-.02	.00
	Intelligence	.11***	.27***	.03	.40***	-.04	-.04
	Impulsivity	.02	-.13*	.22***	-.15*	.05	.03
	Laziness	.04*	-.20***	.18**	-.19**	.03	.07
	Trustworthiness	.06**	.15**	.12*	.43***	.00	.00
Credibility of Business	Agreeableness	.00	.14*	.12	.02	.03	-.06
	Conscientiousness	-.02	.19***	.18**	-.11	.05	.01
	Extraversion	-.02	.10	.32***	-.17**	.04	.09
	Honesty/Propriety	-.00	.13*	.18**	-.01	.03	.00
	Neuroticism	-.01	-.23***	.20***	.04	.04	.00
	Openness	-.02	.14**	.11*	-.13**	.05	-.02
	Competence	-.03	.20***	.24***	-.13*	.06	.02

Outcomes	Traits	Model Paths					
		a*c	a	b	c	d	e
Net Promoter Score	Warm	-.02	.16**	.11*	-.11	.06	-.11
	Intelligence	-.04*	.27***	.03	-.15*	.07	-.04
	Impulsivity	-.00	-.13*	.22***	.02	.03	.03
	Laziness	-.02	-.20***	.18**	.10	.05	.00
	Trustworthiness	-.00	.15**	.12*	-.03	.04	-.12*
	Agreeableness	.00	.13*	.11	.02	.09	-.06
	Conscientiousness	-.02	.19***	.16**	-.09	.09	.06
	Extraversion	-.00	.10	.30***	-.02	.06	.12
	Honesty/Propriety	-.00	.14*	.19**	-.02	.09	-.00
	Neuroticism	.01	-.25***	.19**	-.06	.07	-.03
	Openness	-.01	.14**	.10	-.04	.09	-.04
	Competence	.00	.19**	.22***	.01	.07	.05
	Warm	-.00	.14**	.13*	-.03	.10	-.06
	Intelligence	-.02	.28***	.03	-.08	.11	-.01
	Impulsivity	-.00	-.14*	.23***	.01	.10	.06
	Laziness	-.01	-.19**	.13*	.07	.10	-.05
	Trustworthiness	.01	.16**	.13*	.06	.08	-.10

Note. a*c = indirect effect, a = association between target's self-reported SES and target effects of the trait, b = association between target's self-reported trait and target effects of the trait, c = association between target effects of the trait and target effects of affiliation interest, d = association between target self-reported SES and target effects of affiliation interest, e = association between target's self-reported trait and target effects of affiliation interest.

Updated ISM Paths not Reported in Manuscript

In the following tables, we report the ISM paths not included in the manuscript tables for the ISM.

Table S5

Standardized Parameter Estimates for the ISM Paths Predicting Affiliation Interest Not Reported in the Main Text

	SES/ Trait	SES/ Outcome	Trait/ TE SES
Path	<i>g</i>	<i>h</i>	<i>i</i>
Agreeableness	.09	.04	.09
Conscientiousness	.03	.08	.04
Extraversion	.01	.05	.00
Honesty/Propriety	.05	.08	.05
Neuroticism	-.12 [†]	.05	-.05
Openness	.02	.08	-.01
Competence	.07	.03	.07
Warmth	.08	.03	.02
Intelligence	.12 [†]	.02	.01
Impulsivity	-.05	.09	-.13 [†]
Laziness	-.09	.06	-.04
Trustworthiness	.06	.06	.09

Note. TE = target effects.

[†] $p < .05$

Table S6

Standardized Parameter Estimates for the ISM Predicting Consumer Credibility Not Reported in the Main Text

Path	SES/ Trait	SES/ Outcome	Trait/ TE SES
	<i>g</i>	<i>h</i>	<i>i</i>
Agreeableness	.09	-.04	.09
Conscientiousness	.03	-.02	.04
Extraversion	.01	-.03	.00
Honesty/Propriety	.05	-.02	.05
Neuroticism	-.12 [†]	.04	-.05
Openness	.02	-.01	-.01
Competence	.07	-.03	.07
Warmth	.08	-.04	.02
Intelligence	.12 [†]	-.07	.01
Impulsivity	-.05	-.01	-.13 [†]
Laziness	-.09	-.03	-.04
Trustworthiness	.06	-.03	.09

Note. TE = target effects.

[†] $p < .05$

Table S7

Standardized Parameter Estimates for the ISM Predicting Sympathy Not Reported in the Main

Text

	SES/ Trait	SES/ Outcome	Trait/ TE SES
Path	<i>g</i>	<i>h</i>	<i>i</i>
Agreeableness	.09	-.03	.09
Conscientiousness	.03	.01	.04
Extraversion	.01	.01	.00
Honesty/Propriety	.05	-.01	.05
Neuroticism	-.12 [†]	-.01	-.05
Openness	.02	.01	-.01
Competence	.07	-.01	.07
Warmth	.08	-.04	.02
Intelligence	.12 [†]	-.04	.02
Impulsivity	-.05	.01	-.13 [†]
Laziness	-.09	.00	-.04
Trustworthiness	.06	-.01	.09

Note. TE = target effects.

[†] $p < .05$

Exploratory Analyses

Positivity Bias and Interpersonal Stereotypes

We conducted an exploratory analysis that controlled for positivity bias in trait ratings. To estimate positivity, we fit a single-factor latent variable model with perceptions of the 12 traits (target effects) as indicators of a single latent variable. The common variance of the trait ratings reflects how positively or negatively targets were rated across traits. We extracted the factor score from these models to use as an index of positivity. Next, to investigate how

positivity in ratings was related to the interpersonal stereotypes of SES, we added the positivity factor score as a covariate to the stereotype regression models.

Statistically adjusting for positivity returned both positive and negative associations between targets' self-reported SES and perceptions of their traits (Table S1). Thus, people stereotype individuals with higher SES as generally having more socially desirable traits but the magnitude of bias in the trait ratings varied. Traits broadly related to conscientiousness and competence showed stronger associations, whereas traits related to agreeableness and warmth were weaker. The results highlight an important difference between the SES-based stereotypes people apply to groups and those they apply to individuals. The SES-based social group "the rich" might be rated as cold and competent because they do not receive the same positivity boost in trait impressions that high-SES individuals experience. These differences between stereotypes of groups and individuals cautions against inferring that the stereotype content of social groups emerges in impressions of individuals.

Table S8*Interpersonal Stereotype Content of SES Controlling for Positivity*

Personality Domain	<i>b</i>	95% <i>CI</i>	<i>p</i>	β
Agreeableness	-0.13	[-0.19, -0.08]	<.001	-.25
Conscientiousness	0.11	[0.06, 0.16]	<.001	.18
Extraversion	0.02	[-0.09, 0.13]	.668	.02
Honesty/Propriety	-0.02	[-0.07, 0.02]	.328	-.06
Neuroticism	-0.07	[-0.14, -0.01]	.030	-.12
Openness	0.08	[0.01, 0.15]	.018	.13
Competence	0.07	[0.01, 0.12]	.016	.10
Warmth	-0.14	[-0.19, -0.10]	<.001	-.28
Impulsivity	-0.06	[-0.15, 0.03]	.223	-.08
Intelligence	0.05	[0.00, 0.09]	.038	.09
Laziness	-0.01	[-0.08, 0.05]	.656	-.02
Trustworthiness	-0.09	[-0.13, -0.04]	<.001	-.17

Gender

The primary goal of the present work was to advance understanding of how perceptions of SES and associated stereotypes affect social decisions. We recognize that other characteristics of people, such as race and gender, might affect SES-based stereotype application. The present data do not contain the necessary information to test the role of race

but they do allow us to explore how gender affects perceptions of SES and the application of SES-based stereotypes. Seven participants, who self-identified a gender other than man or woman, were excluded from the following analysis.

We began by examining the association between perceptions of SES and the target's gender. A linear model regressing target effects of SES on gender (women = 0, men = 1) did not support an association between gender and perceived SES, $b = -0.13$, 95% CI $[-0.29, 0.03]$, $\beta = -.10$, $t(287) = -1.60$, $p = .124$. Next, we tested whether gender moderated the accuracy of perceptions of SES. A linear model regressing perceived SES on self-reported SES, gender, and the interaction between their self-reported SES and gender (the interaction term tests if target's gender moderated self-other agreement about their SES) showed that gender did not moderate accuracy in perceptions of SES, $b = 0.11$, 95% CI $[-0.04, 0.27]$, $\beta = .11$, $t(287)$, $p = .142$.

Next, we examined if participants applied interpersonal stereotypes to men and women differently. We accomplished this by adding the binary gender variable as a moderator to the stereotype content regression models. These models regressed perceptions of a trait (target effects) on the self-report value of that trait, perceived SES (target effects), gender, and the interaction between perceived SES and gender. The association between perceived SES and perception of a trait, controlling for actual standing on the trait is the interpersonal stereotypes content. The interaction between perceived SES and gender tested if gender moderated the application of these stereotypes. None of the models showed a significant interaction between SES and gender (Table S9), suggesting that a target's gender does not change the SES-based stereotypes applied to impressions of their personality traits.

Table S9

Model Parameter for Interaction Term Testing if Gender Moderated Interpersonal Stereotypes of SES

Personality Domain	<i>b</i>	95% CI	β
Competence	-0.01	[-0.13, 0.11]	-.01
Warmth	0.03	[-0.08, 0.14]	.04
Agreeableness	-0.09	[-0.20, 0.03]	-.11
Conscientiousness	0.01	[-0.10, 0.12]	.01
Extraversion	0.08	[-0.12, 0.28]	.06
Honesty/Propriety	-0.04	[-0.12, 0.04]	-.07
Neuroticism	0.03	[-0.09, 0.15]	.03
Openness	-0.10	[-0.22, 0.03]	-.11
Impulsivity	-0.02	[-0.17, 0.13]	-.02
Intelligence	-0.07	[-0.18, 0.04]	-.09
Laziness	0.05	[-0.08, 0.18]	.05
Trustworthiness	-0.01	[-0.12, 0.10]	-.01

Note. All p 's > .05

Age

We began by examining the association between perceptions of SES and the target's age. A linear model regressing target effects of SES on age did not support an association between age and target effects of SES, $b = 0.00$, 95% CI [-0.00, 0.01], $\beta = .05$, $t(295) = 0.93$, $p =$

.356. Next, we tested whether gender moderated the accuracy of perceptions of SES. A linear model regressing perceived SES on self-reported SES, age, and the interaction between their self-reported SES and age (the interaction term tests if target's age moderated self-other agreement about their SES) showed that age did not moderate accuracy in perceptions of SES, $b = 0.00$, 95% CI [-0.00, 0.00], $\beta = .05$, $t(293)$, $p = .852$.

Next, we examined if the interpersonal stereotypes participants applied varied by the age of the target. We accomplished this by adding age as a moderator to the stereotype regression models. These models regressed perceptions of a trait (target effects) on the self-report value of that trait, perceived SES (target effects), age, and the interaction between perceived SES and age. The association between perceived SES and perception of a trait, controlling for actual standing on the trait is the interpersonal stereotype. The interaction between perceived SES and age tested if age moderated the application of these stereotypes. None of the models showed a significant interaction between SES and age (Table S10), suggesting that a target's age does not change the SES-based stereotypes applied to impressions of their personality traits.

Table S10

Model Parameter for Interaction Term Testing if Age Moderated Interpersonal Stereotypes of SES

Personality Domain	<i>b</i>	95% CI	β
Competence	-0.00 [†]	[-0.01, -0.00]	-.32
Warmth	-0.00	[-0.01, 0.00]	-.34
Agreeableness	-0.00	[-0.00, 0.00]	-.01
Conscientiousness	-0.00	[-0.01, 0.00]	-.11
Extraversion	-0.01	[-0.02, 0.00]	-.32
Honesty/Propriety	-0.00	[-0.01, 0.00]	-.20
Neuroticism	0.00	[-0.00, 0.01]	.23
Openness	-0.00	[-0.01, 0.00]	-.02
Impulsivity	-0.00	[-0.01, 0.00]	-.19
Intelligence	-0.00	[-0.00, 0.00]	-.17
Laziness	0.00	[-0.00, 0.01]	.26
Trustworthiness	-0.00	[-0.01, 0.00]	-.29

Note. [†] $p < .05$