

# Supplementary Information for

## A Century of Research on Conscientiousness at Work

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### This PDF file includes:

Supplementary text Tables S1 to S20 Appendix for artifact distributions used in corrections References for supplemental information References for meta-analyses included in second-order review

#### **Supplementary Methods**

#### **Literature Search**

We used four search strategies to locate Conscientiousness (C) meta-analyses appearing between January 1990 and December 31, 2018. We used the following search string in (a) PsycINFO [(meta-analy\* OR quantitative review OR systematic review).m\_titl. AND (personality OR trait OR temperament OR (Five Factor Model) OR FFM OR (Big Five) OR Conscientiousness OR Extraversion OR Openness OR Agreeableness OR (Emotional Stability) OR Neuroticism).mp], and (b) a parallel string in Web of Science, (c) gathered studies from the reference sections of reviews of Big Five meta-analyses (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11), and (d) conducted manual searches, on December 31, 2018, for in-press articles in outlets that frequently publish work relevant meta-analyses (i.e., European Journal of Personality, European Journal of Work and Organizational Psychology, Human Performance, International Journal of Selection and Assessment, Journal of Applied Psychology, Journal of Management, Journal of Occupational and Organizational Psychology, Journal of Personality and Social Psychology, Journal of Research in Personality, Journal of Vocational Behavior, Personality and Individual Differences, Personality and Social Psychology Review, Personnel Psychology, Psychological Bulletin). The total number of records identified through electronic searches was 5,482. We gathered a further 43 records from reference sections and in-press articles. After removing duplicate records, a total of 2,213 records remained eligible for our initial article screening.

#### **Article Inclusion Criteria**

A record had to meet four criteria to be included in our final database. Specifically, it had to be (a) a meta-analysis (i.e., primary studies excluded), (b) published (i.e., unpublished theses, dissertations, and conference papers excluded), (c) in the English language, (d) that reported the zero-order relation of C to at least one work relevant variable. Records were dropped following their first missed criterion. After the initial screening, 1,692 records were excluded because they were not meta-analyses, did not report a relation to C, or both. Next, we excluded 47 unpublished records and 23 non-English publications. Finally, we excluded 315 records because they did not report an effect for an occupational variable. Thus, after screening, 136 published meta-analytic records were included in our final database.

#### **Meta-Analytic Database**

We systematically extracted relevant descriptive statistics from qualifying meta-analyses, including the name, source, and operational description of the focal variable, its total number of independent samples (i.e., k), total sample size (i.e., N), mean sample-size weighted observed effect size (e.g.,  $\overline{r}$ ,  $\overline{d}$ , or  $\overline{z}$ ), and an index of between-studies variability, which is detailed below. Information concerning the reliability of a predictor and/or a criterion measure was also coded or estimated. A doctoral student with training in personality and meta-analysis extracted the basic descriptive information. The first author compared the extracted data to the published records and made corrections as needed. Several meta-analyses did not report complete descriptive data, so some estimation and transformations were required, which we explain in detail below.

**Estimating** *N*. Several meta-analyses reported *k* and *N* data for an overall meta-analysis (e.g., leadership; Meta-analysis Ref. 42), but did not report the sample size for criterion-specific moderator analyses (e.g., emergence vs effectiveness; p. 772). Accordingly, we estimated the criterion-specific *Ns* from the total meta-analytic sample (i.e.,  $N_{specific} = \frac{N_{total}}{k_{total}} * k_{specific}$ ).

**Estimating**  $\overline{r}$ . Some meta-analyses reported effect sizes as *z*-values, which we converted to Pearson correlation coefficients using Fisher's (12) *z*-to-*r* transformation.

Estimating SD<sub>r</sub>. Several meta-analyses did not report the observed (i.e., uncorrected)

between-studies standard deviation in effect sizes (i.e.,  $SD_r$ ). However, most studies provided other indices of variability, which we used to estimate  $SD_r$ .

For meta-analyses reporting confidence intervals (CI) or credibility intervals (CR) around *observed* effects (i.e.,  $\overline{r}$ ), we converted values to standard deviation units based on the degree of certainty reported for the particular interval (i.e., 80%, 90%, 95%). Estimating *SD<sub>r</sub>* from CR is straightforward because *SD<sub>r</sub>* is the only value used in computing the credibility interval (i.e., CR  $= \overline{r} \pm z_{\alpha} * SD_r$ ). Estimating *SD<sub>r</sub>* from *SE<sub>r</sub>* is also possible in random effects meta-analysis because the former is incorporated into the estimation of the latter (i.e., CI  $\approx \overline{r} \pm z_{\alpha} * SD_r/\sqrt{k}$ ). As a result, for meta-analyses reporting standard errors around the mean meta-analytic effect (or, confidence intervals based on *SE<sub>r</sub>*), we estimated *SD<sub>r</sub>* using an approximation formula (i.e., *SD<sub>r</sub>*  $\approx \sqrt{k} * SE_r$ ; 13; see also 14).

For meta-analyses reporting confidence intervals or credibility intervals around *corrected* effects (i.e.,  $\overline{\rho}$ ), first, we attenuated values using reliability coefficients for C and/or the criterion variable. For meta-analyses reporting corrected effects, but not reporting reliability coefficients used to compute them, we estimated reliability from the attenuation factor (i.e.,  $A = \overline{r} / \overline{\rho}$ ) of that variable's relation to C, and the square root of C's reported frequency-weighted meta-analytic internal consistency estimate (15;  $\overline{\alpha} = .72$ ,  $\sqrt{.72} = .84$ ). Again, we converted the values to  $SD_r$  based on the degree of certainty reported for the particular intervals (i.e., 80%, 90%, or 95%).

For meta-analyses reporting results according to alternative trait taxonomies, which were subsequently composited, a composite variance was not calculable. Instead, we used the average variance across the components of the composite as an estimate of between-studies variability.

Finally, for meta-analyses that failed to report *any* index of between-studies variance, we computed an estimate of the sampling error variance (i.e.,  $[1 - \overline{r}^2]^2 / [N/k - 1]$ ; see 13, p. 88).

All of these studies are marked accordingly in the following tables where they are found.

**Forming composites.** Two meta-analyses (Meta-analysis Ref. 18, 36) reported findings according to an alternative personality trait taxonomy that is similar, but not identical, to the Big Five. Specifically, relations were reported to C's lower-order facet traits of *Achievement* and *Dependability*. In these cases, we used linear composites (16) to estimate relations to C using the correlations reported in those meta-analyses, as well as the mean meta-analytic intercorrelation between Achievement and Dependability (17;  $\overline{r} = .45$ , k = 16, N = 6,696).

Additional information. Variables were also coded according to the type of scale used to measure C (i.e., indirect vs direct measures; cf. Meta-analysis Ref. 39), the research context (i.e., general vs occupational settings), and the criterion-rating source (i.e., self-, informant-, mixed-ratings). For other-rated criteria, we noted the type of relationship (e.g., supervisor, peer, or subordinate). A final code was made indicating whether a variable was the subject of multiple meta-analyses. Although the effects for most variables were reported in only one meta-analysis, several (e.g., job performance) were included in multiple meta-analyses. To determine if these meta-analyses had overlapping constituent studies, we scrutinized their Methods and Reference sections. Meta-analyses that were explicitly updates of prior reviews, or had overlapping primary studies, were marked accordingly. However, meta-analyses with evidence of non-redundancy were highlighted for possible inclusion in second-order meta-analyses.

#### Variable Inclusion Criteria

We extracted and coded a total of 733 work variables reporting effects across 136 metaanalyses. To be included in our review, a variable had to meet five criteria. Specifically, it had to (a) have sufficient data for analysis (i.e., N, k,  $\overline{r}$  reported), (b) use self-reports of C (i.e., other- or mixed-ratings excluded), (c) relate to a consequential occupational or education relevant variable (cf. 8; nonwork variables [e.g., demographics, cognitive ability, clinical diagnoses] excluded), (d) permit its inferences to the general working population (i.e., job-specific studies excluded), and (e) come from an independent meta-analysis (i.e., only one effect per variable included). Variables were dropped following their first missed criterion. For variables reporting multiple, non-independent effects, the effect from the more comprehensive meta-analysis was used. For variables reporting multiple, independent effects, effects were combined using second-order meta-analysis. In total, 175 variables reported in 92 meta-analyses met our inclusion criteria.

To qualify for inclusion in our review of occupation-specific performance, a variable had to meet the same inclusion criteria, except criterion (d). For occupations reporting multiple, nonindependent effects, the one from the more comprehensive or newer meta-analysis was selected. For occupations reporting multiple, non-independent effects, effects were combined by secondorder meta-analysis. Eight occupations reported in nine meta-analyses met the inclusion criteria: *Customer Service, Health Care, Managerial, Military, Police, Professional, Skilled/Semi-Skilled*, and *Sales* (see Table S2 for specific details).

#### **Meta-Analytic Procedures**

No new meta-analyses were conducted in this study. Instead, procedures from Hunter and Schmidt's (13) psychometric meta-analysis were used to update estimates from meta-analyses included in our review using a common set of statistical corrections. Our goal was that statistical artifacts be similarly addressed across contributing records. To correct for error in measurement, frequency-weighted artifact distributions were developed from data in their source meta-analysis or from other sources in the literature (e.g., 18). All distributions and sources are reported in the Appendix. To correct for error in measuring C, we used the internal consistency of  $\overline{\alpha} = .79$  (19). Internal consistencies were used to correct for error in self-report or objective criteria, but inter-

rater reliabilities were used to correct for error in other-rated variables (20). Finally, because of sporadic reporting, we did not correct for range restriction.

First-order meta-analyses. All meta-analyses included in our review had a common set of statistics. First, the descriptive statistics (i.e., k, N, mean sample-size weighted observed  $\overline{r}$ , and its standard deviation,  $SD_r$ ) that are reported in, or estimated from, their source meta-analysis. Next, we used Hunter–Schmidt procedures to estimate the variance attributable to sampling and measurement error, which were subtracted from the observed variance. The observed correlation was also corrected for attenuation due to measurement error. Corrections were used to estimate the mean population correlation ( $\overline{\rho}$ ) and its associated standard deviation ( $SD_{\rho}$ ). Although  $\overline{r}$  and  $\overline{\rho}$  are both parameter estimates, the latter is corrected for statistical artifacts, but the former is not. Finally, around the parameters, confidence and credibility intervals were calculated. Confidence intervals (CI) estimate the boundaries wherein the observed correlation is expected to fall based on the standard error of between-study effects. In contrast, credibility intervals (CR) estimate between-studies heterogeneity in population effects and are calculated using  $SD_{\rho}$ . CIs involve estimates of observed effects and tend to be smaller given larger pooled samples, whereas CRs bound "true" effect distributions and may be larger or smaller depending on generalizability. Estimates with CRs omitting zero are interpreted as generalizing across contexts (13).

Second-order meta-analyses. Several meta-analyses reported results from multiple, nonoverlapping meta-analyses, which were combined using second-order meta-analysis procedures. Second-order meta-analysis uses basic descriptive statistics (i.e., k, N,  $\overline{r}$ , and  $SD_r$ ) and mean population correlations ( $\overline{\rho}$ ) from two or more first-order meta-analyses. All second-order metaanalyses had a common set of statistics. First, m summarizes the number of contributing firstorder meta-analyses. Second-order sampling error was estimated for each first-order metaanalytic effect (i.e.,  $VAR_2$ ). Next, the grand mean second-order population effect (i.e.,  $\overline{p}_M$ ) was estimated, as well as three variance components: (a)  $VAR_{2M}$ , which is the mean variance of firstorder meta-analyses corrected for sampling and measurement error, (b)  $VAR_{2SE}$ , which is the variance due to second-order sampling error, and (c)  $VAR_{True}$ , which is the difference between the prior two components. When  $VAR_{True}$  is zero or negative, this suggests that all remaining variance from first-order meta-analysis is accounted for by second-order sampling error (Metaanalysis Ref. 75).

Second-order meta-analyses of C's effects were run for seven Motivations, Values, and Interests variables, 10 Interpersonal variables, seven Attitudes and Well-Being variables, two Counterproductivity variables, and 13 Performance variables (see Tables S10-S14), and for all eight occupations (Table S15). We report full output, including sources for and statistics from contributing meta-analyses below. We also report relevant parameter estimates (i.e.,  $\overline{\rho}_M$ ,  $SD_{\rho}$ ) in Tables S4-S9, each of which summarizes meta-analyses across the organizing framework below.

#### **Organizational Framework for Qualifying Variables**

For purposes of reporting, we arranged variables into a framework (11) of five conceptual categories defined based on descriptions adapted from the literature: *Motivations, Values, and Interests* (i.e., internal forces that influence direction, intensity, and persistence of occupational affect, cognitions, and behavior); *Interpersonal* (i.e., behavior involving interpersonal interaction with or influence of others to pursue shared goals, as well as outcomes of successful interaction or influence; *Attitudes and Well-Being* (i.e., emotional or cognitive evaluations of occupational phenomena and its influence on individuals' psychological well-being); *Counterproductivity* (i.e. behavior reflecting social or moral impairment that detracts from occupational goals, as well as outcomes of misbehavior; and *Performance* (i.e., behavior that contributes to occupational goals,

as well as outcomes of successful contribution). The framework also includes four major career domains that individuals encounter across their working lives: *Education, Job Application, On the Job*, and *Career/Lifespan*, which subdivide findings within each of the conceptual categories. Table S1 presents descriptions and meta-analytic sources for all 175 occupational variables that qualified for inclusion in our review within the aforementioned organizing framework.

#### **Organizational Framework for Occupations**

To report occupation-specific performance findings, we arranged occupations according to the complexity associated with their technical work demands. To do so, we used occupational complexity ratings provided in the Dictionary of Occupational Titles (21), which is a catalogue of occupations reported in the United States between 1939 to 1977. In the fourth edition of the DOT, more than 12,000 occupations were rated for complexity by job analysts. DOT classifies occupations by a 9-digit code (e.g., 189.117-022; manager, industrial organization), with digits four, five, and six representing complexity with Data, People, and Things, respectively. DOT occupational complexity ratings range from 0 to 9 and smaller scores indicate higher complexity.

To rank the complexity of the eight occupations qualifying for our review, we reviewed the Methods sections of their source meta-analyses to determine which specific occupations were reported as being included in the meta-analyses of a larger, occupational group (e.g., engineers, architects, attorneys, accountants, teachers, doctors, and ministers cumulated as "Professional" occupations; Meta-analysis Ref. 5). When authors reported specific occupations, we used them to search the DOT to find the nearest corresponding occupational title and its complexity ratings across Data, People, and Things dimensions. When authors did *not* list specific occupations, but reported a larger, occupational group (e.g., sales; e.g., Meta-analysis Ref. 39), we searched the DOT for a general occupation title that most closely approximated that larger group occupation. Table S2 provides a summary of occupations included in C meta-analyses and their associated DOT occupational complexity ratings.

To form an index of occupational complexity for each of the eight occupations, we computed the grand mean complexity rating across meta-analyses and across Data, People, and Things dimensions. We used scores to rank the eight occupations from least to most complex.

### **Evaluations of Publication Bias and Sensitivity Analyses**

Publication bias and questionable research practices may influence the scientific record (22, 23). Meta-analyses are not immune from these influences and methods have been proposed to test for their effects. To ensure the accuracy of our results, we conducted evaluations of publication bias and sensitivity analyses for meta-analyses contributing to our review, and sensitivity analyses for second-order meta-analyses presented, which we explain in detail below.

**Publication bias and sensitivity analyses in first-order meta-analyses.** Publication and reporting bias (also referred to as availability bias or dissemination bias; 13, 24) can threaten the veracity and accuracy of meta-analysis. Accordingly, it is relevant to evaluate whether these potential biases threaten the validity of C meta-analyses contributing to our review. Publication and reporting bias refer to unrepresentative studies being included in meta-analyses, which skew the scientific record, and lead to erroneous conclusions (22, 23). Not all studies are available to meta-analysts. As a result, to the extent that unavailable studies have systematically different results than results of available studies, the reported meta-analytic effects would be biased.

The concern about studies that link traits such as C to occupational variables is that the studies available to the meta-analyst may overstate the true magnitudes of its effects. The reason for overstatement is that the published research may reflect the so-called "file drawer problem" (25, 26, 27), which posits that statistically nonsignificant results tend to remain unpublished,

whereas statistically significant results tend to appear in peer-reviewed journals. Publication bias occurs at the primary study level, but meta-analyses can be affected by it to the extent that they draw on published findings. That is, if significant results get published and nonsignificant results are unpublished, then meta-analyses based on the published literature would be upwardly biased.

Scholars have detailed several potential sources of publication bias (28). Regardless of etiology, two broad sets of approaches can be used to assess and guard against publication bias.

*Post hoc approaches.* The first set of approaches assesses and addresses publication bias *after* a meta-analysis has been conducted. Contributing data and results are examined to evaluate (a) whether there is evidence of publication bias, and (b) whether the results would be different if the contributing data were differently composed. The former includes assessments of magnitudes of effects included in the meta-analysis and publication status of contributing studies, cumulative meta-analysis, forest plots, and other symmetry-based methods (i.e., funnel plots, Egger's test of intercept, Begg and Mazumdar's rank correlation; 29). The latter includes methods that impute "missing" effects to estimate what results would be if such studies had been included (e.g., Duval and Tweedie's trim-and-fill, *p*-uniform method; 29), or evaluate magnitudes of effect sizes from different contributing sources separately (i.e., published versus unpublished studies). The goal of all such sensitivity analyses is to investigate the robustness of meta-analyses to publication bias.

*Preventative approaches.* The second set of approaches aim to guard against publication bias and are preferable to dealing with these issues after the fact. Preventative approaches entail *proactive* efforts to include all relevant published and unpublished studies in a meta-analysis. Including large numbers of unpublished studies is a common practice that aims to reduce the impact of the file drawer effect (30, 31, 32) and is an approach recommended by leading meta-analysis methodologists (13, 33). Including both published and unpublished studies, especially

when the latter is proportionately sizable, is instrumental to limiting publication bias in metaanalyses (29).

*Centrality considerations.* A third consideration that may guard meta-analyses against publication bias is determining whether or not a particular variable is of central interest. Some meta-analyses examine relations to variables that are not central to the research question, but are reported incidentally (e.g., demographic variables, such as age, are often reported, but may not pertain to hypotheses). Publication bias is much less likely in these circumstances, because there is little-to-no incentive to distort the reporting of relations to incidental variables (see also 13). Because meta-analyses reporting relations to C also tend to report relations to the remaining Big Five traits, and/or other personality constructs, non-focal considerations may be relevant.

**Evaluations of approaches in first-order meta-analyses.** We undertook an evaluation of post hoc and preventive approaches used in addressing publication bias in C meta-analyses qualifying for inclusion in our review. We also used several approaches to determine whether C was a central variable in these meta-analyses. To conduct these evaluations, we coded the full set of 92 contributing meta-analyses. The two authors each coded 51 meta-analyses for (a) general descriptive information, (b) post hoc approaches that assess and address publication bias and sensitivity analyses, (c) preventive approaches to guard against publication bias, and (d) features relevant to centrality considerations. To ensure consistency, both authors also coded 10 meta-analyses. Intercoder agreement was good (i.e.,  $\kappa = .88$ ; 282 out of 300 coded characteristics relevant to publication bias) and coders resolved minor discrepancies through discussion and jointly checking the coded meta-analyses. Descriptions for the coded information are provided in Table S16 and the coded data themselves are presented in Table 17.

*General descriptive statistics*. As the descriptive statistics in Table S17 (columns 1-5) show, the 92 meta-analyses qualifying for our review were mostly published in the past decade; the mean year of publication was 2011 (SD = 6 years). The average number of primary records (i.e., sources not studies) contributing to these meta-analyses was 90 (SD = 78) and the average number of studies pertaining to C per meta-analysis was k = 78 (SD = 125). Because this average included meta-analyses that reported C's relations to multiple occupational variables in the same study, we examined the total number of variables reporting relations to C (regardless of whether these variables ultimately qualified for inclusion in our review). Overall, meta-analyses reported C's relations to 3.90 variables (SD = 3.42), on average. Adjusting for the number of occupational variables, the average number of studies per variable across C meta-analyses was k = 19.88 (i.e., 78 / 3.90). This value is notable because results indicate that meta-analyses with  $k \ge 20$  tend to result in robust parameter estimates and minimize the biasing influence of sampling error (13).

*Evaluation of post hoc approaches*. Many advanced methods of assessing publication bias were proposed in the 1990s (e.g., Begg and Mazumdar's rank correlation; 34), but were only popularized in the last decade, due to the surging interest and participation in unbiased and open science. The publication of the seminal book, "Publication Bias in Meta-Analysis: Prevention, Assessment, and Adjustments," (35) gave meta-analysts a key resource to deal with publication bias. Because many of our qualifying meta-analyses were published before these methods were popularized, only a subset of them reported advanced publication bias and sensitivity analyses. To evaluate the reporting of publication bias examinations, we coded for both traditional (e.g., Failsafe *N*) and advanced methods to assessing publication bias (e.g., funnel plots, cumulative meta-analysis, Egger's test of the intercept, Begg and Mazumdar's rank correlation test, as well as other approaches; for additional details on all these methodologies, see 35). Table S17 presents a summary of post hoc publication bias assessments available in the contributing meta-analyses and their associated conclusions (see columns 6-9). Altogether, 37 meta-analyses (or, 40%) reported at least one post hoc approach for assessing publication bias.

Regarding methods for assessing publication bias, 5 meta-analyses reported Failsafe *N*s. However, it should be noted that this traditional approach is no longer recommended because the greater the publication bias in a published literature, the greater the indication from Failsafe *N* that that meta-analysis is robust (36). Beyond Failsafe *N*, 12 meta-analyses reported advanced publication bias analyses, and 6 of these reported using multiple methods. When results converge across multiple publication bias methods, subsequent conclusions are more credible. Critically then, in 82% of meta-analyses for which publication bias analyses were available, the reported conclusion was that there was no bias or negligible bias. In fact, evidence of publication bias was found in only 2 meta-analysis (i.e., Meta-analysis Ref. 61 and 78) and both effects were small.

Sensitivity analyses address the question of whether findings would be different if the contributing data were differently composed. As such, they help reveal the robustness of metaanalyses to publication bias. As Table S17 (column 6) shows, 20 meta-analyses performed outlier analyses, and 12 used trim-and-fill or similar approaches used to estimate the magnitudes of C relations once "missing" studies were synthetically imputed. The magnitude of differences between the observed and estimated effects (i.e., estimated by trim-and-fill or a similar method) ranged from .00 to .06 (Mean = .03). Finally, 15 meta-analyses separately evaluated magnitudes of effects for published versus unpublished studies; for 14 of them, differences were negligible-to-small (e.g., .03, .05, .07 correlational points; see Table S17). What is more, in 2 cases (e.g., Meta-Analysis Ref. 15, 31), unpublished effects were nominally larger than published effects. Overall, evaluation of the available evidence using post hoc approaches indicates that contributing C meta-analyses included in our review tended to be very robust to publication bias.

*Evaluation of preventative approaches*. Systematic searches and including unpublished studies in meta-analyses help provide confidence that publication bias has been minimized (28). Accordingly, Table S17 (column 10) shows that 47 meta-analyses (or, 51%) explicitly discussed publication bias and authors' preventive steps taken to minimize it (e.g., extra steps taken to get and include unpublished research, such as contacting scholars for unpublished studies, obtaining previously unanalyzed data containing variables of interest; not including studies reporting only significant findings/screened results).

In addition, to the extent that unpublished studies are included in a meta-analysis, we have confidence that estimates accurately reflect population parameters. As Table S17 (column 11) shows, for 87 meta-analyses, it was possible to calculate the proportion of contributing studies that were unpublished or published. Among them, 8 included only published studies (notably, 3 of the 8 also reported advanced publication bias or sensitivity analyses and found no evidence of bias) and 4 meta-analyses included only unpublished (e.g., archival) studies. For the remaining 75 meta-analyses, the proportion of unpublished research included was, on average, 28% (*SD* = 19%) and for 16 of them, 40% or more of the contributing studies were unpublished.

Overall, the relatively large proportion of unpublished research suggests that prevention of publication bias was a major consideration in culling primary studies for meta-analyses of C.

*Evaluation of centrality considerations.* The final consideration that may protect metaanalyses against publication bias is determining whether a variable included is of central interest. The first consideration was determining whether personality constructs were central constructs of interest or were secondary considerations (i.e., to function as controls or covariates in models, or to provide supplemental evidence of convergent or discriminate validity). As Table S17 (column 12) shows, personality was not a central consideration in 43% of contributing meta-analyses.

Next, we examined whether C was a central consideration by determining whether it was the sole personality construct included in contributing meta-analyses or if other constructs where also included alongside C. Results in Table S17 show that C was not the focal variable of interest in the overwhelming number meta-analyses. First, in 99% of them, other personality constructs' relations to occupational variables were examined alongside those of C (see column 13). In only 1 meta-analysis (Meta-Analysis Ref. 58) was C the sole personality construct tested—but even in this case, several non-personality variables were also included. Second, in 92% of meta-analyses, relations were reported for all Big Five traits to the variable(s) of interest (column 14). Third, in 37% of meta-analyses, relations to personality constructs other than the Big Five were reported, including: lower order traits of the Big Five (e.g., Meta-Analysis Ref. 17, 35, 39), negative and positive affect (e.g., Meta-Analysis Ref. 2, 15, 19, 90), or compound traits, such as core selfevaluations, general self-efficacy, locus of control, proactive personality, self-esteem, or other miscellaneous traits (e.g., Meta-Analysis Ref. 19, 25, 27, 59, 70, 79; see column 15). As a result, there was little-to-no incentive affecting the reporting of C's effects vis-a-vis other personality constructs. Much to the contrary, finding that a personality construct other than C was linked to a key occupational variable would be more surprising and, as a result, much more incentivizing.

Overall, the preceding evidence indicates that C was not the central construct of interest in most of our contributing meta-analyses. Publication bias is less likely in these circumstances, because there is little-to-no incentive to distort the reporting of relations to incidental variables.

Sensitivity analyses in second-order meta-analyses. Discussions of publication bias and questionable research practices in meta-analysis should be supplemented by considerations about sampling error, outlier meta-analyses, and alternative meta-analyses to be used in secondorder cumulation.

*Small-k meta-analyses*. Although more meta-analyses are better, it is both possible and reasonable to combine as few as two first-order meta-analyses (Meta-analysis Ref. 75, p. 211). However, because second-order meta-analysis methods use inverse variance weights in cumulating effects (i.e.,  $k_{weighted} = \frac{1}{Var_r} * k$ ), first-order sampling error can have can have an outsized influence when *k* and *m* (i.e., total number of meta-analyses to be combined) are small. Specifically, when *k* = 2, second-order grand mean population parameters tend to be biased in the direction of the meta-analysis with smaller *k* and *SD<sub>r</sub>*. However, because such meta-analyses are more susceptible to first-order sampling error, a way to mitigate these effects is to impute the observed *SD<sub>r</sub>* with the *SD<sub>r</sub>* from the meta-analysis with the largest *k* (cf. 11). Accordingly, we compared results of observed versus imputed *SD<sub>r</sub>* for 10 applicable second-order meta-analyses (see Table S18).

Table S18 presents results of sensitivity analyses for small-*k* meta-analyses. For 10 variables reporting a meta-analysis with k = 2, imputing  $SD_r$  from the largest-*k* meta-analysis had sizable stabilizing effects on second-order parameters. Overall, population correlations more closely resembled the more reliable meta-analyses; absolute differences between imputed versus observed  $SD_r$  correlations ranged from nil to appreciable ( $|\overline{p}| = .01$  to .13;  $|\overline{p}_M| = .06$ ). What is more, the average estimated population variance was reduced by half ( $VAR_{True} = .0031$  vs .0015), and the average corresponding percentage of variance attributable to second-order sampling error increased from 38% to 70%. Taken together, results indicate that imputing  $SD_r$  from the largest-*k* meta-analysis mitigated the biasing effect of first-order sampling error on small-*k* meta-analyses.

Outlier meta-analyses. Outlier meta-analyses can also influence results of second-order

meta-analysis. Concerning C and occupational performance across occupations, one first-order meta-analytic effect for Skilled/Semi-Skilled occupations is appreciably larger than those of other meta-analyses, and one first-order meta-analytic variance for Sales is appreciably smaller than those of other meta-analyses (see Table S15). To reduce the influence of these outliers, for the former, we imputed the observed  $SD_r$  from the meta-analysis with the largest variance as a counterbalance; for the latter, we imputed the observed  $SD_r$  from the meta-analysis with the largest k, similar to the previous small-k procedures. Additionally, we re-ran analyses without outlier meta-analyses and compared results of all three analyses (see Table S19).

Table S19 presents results of sensitivity analyses for outlier meta-analyses. For Skill/ Semi-Skilled occupations, results show that when compared to the observed, unadjusted estimate  $(\overline{\rho} = .24, SD_{\rho} = .11)$ , imputing  $SD_r$  from the meta-analysis with the largest  $SD_r(\overline{\rho} = .21, SD_{\rho} = .09)$  and omitting the outlier ( $\overline{\rho} = .16, SD_{\rho} = .00$ ) impacted second-order estimates. Likewise, for Sales occupations, results show that when compared to the observed, unadjusted estimate ( $\overline{\rho} = .15, SD_{\rho} = .05$ ), imputing  $SD_r$  from the meta-analysis with the largest  $k(\overline{\rho} = .23, SD_{\rho} = .05)$  and omitting the outlier ( $\overline{\rho} = .24, SD_{\rho} = .05$ ) also influenced parameter estimates. Because we had no substantive theoretical reason to exclude outlier meta-analyses, we elected to retain them and use the conservative approach of running second-order meta-analyses with respective imputed  $SD_r$ s.

*Alternative meta-analyses.* For variables reporting multiple, independent meta-analyses, effects were combined by second-order meta-analysis. However, for several variables, multiple meta-analyses were candidates for second-order cumulation. In these instances, we selected the newest and/or most comprehensive meta-analysis for inclusion in second-order meta-analysis. Nevertheless, these excluded meta-analyses may also be useful for testing the robustness of our reported results. Thus, as an additional set of sensitivity analyses, we exchanged qualifying meta-

analyses with an alternative meta-analysis for eight applicable variables, where this was possible. We then compared reported second-order meta-analyses to alternative results (see Table S20).

Table S20 presents results of sensitivity analyses for alternative meta-analyses. For eight applicable variables, results show second-order parameter estimates based on alternative meta-analyses differed minimally from reported values; absolute differences between correlations ranged from  $|\overline{\rho}| = .01$  to .04 (M = .02). Further, for six of eight variables, 80% CRs overlapped, indicating no significant differences between them. For the remaining two variables, differences were minimal (respective  $|\overline{\rho}s| = .03$ ). Altogether, results of sensitivity analyses indicate that second-order population parameters based on alternative meta-analyses differed marginally from our reported values that are based on newer and/or more comprehensive meta-analyses.

**Overall conclusions regarding publication bias and sensitivity analyses.** "A practical concern in meta-analysis is that the studies being cumulated may not be representative of all the studies conducted examining that relationship . . . The meta-analyst is then required to judge whether conclusions of the meta-analysis are likely to be reversed if all the data were available" (37 p. 555-556). Publication bias and questionable research practices can unduly influence meta-analyses. However, our quantitative evaluation of approaches to assessing publication bias and sensitivity analyses for first-order and second-order meta-analyses provide little evidence of publication bias for occupational relations to C reported in our review.

This finding is in line with other published evidence in the industrial-organizational psychological literature, which found "consistent empirical evidence that the file drawer problem does not produce an inflation bias and does not pose a serious threat to the validity of metaanalytically derived conclusions" (38, p. 222; see also 23). Further, reviewers' conclusion that "it appears that publication bias is not a major threat in the micro-oriented management literature" (39, p. 77) also appears to be applicable to meta-analyses in our review. In the final analysis, we conclude that results represent accurate estimates of the effects of C for occupational variables.

#### **Supplemental Results**

The summary of meta-analyses of C and occupational variables depicted in Fig. 1 of the manuscript is presented in Table S3. Table S3 summarizes the findings across our organizing framework of five conceptual categories, each of which is subdivided by four career domains.

The following five tables present meta-analyses of C to specific occupational variables for each conceptual category. Variables in the top 33% of effect sizes are presented in grayscale in these tables. Specifically, Motivations, Values, and Interests (Table S4), Interpersonal (Table S5), Attitudes and Well-Being (Table S6), Counterproductivity (Table S7), and Performance (Table S8).

Meta-analyses of C for occupational performance across occupations, which are depicted in Fig. 2 of the manuscript, are presented in Table S9. Occupations were organized from least to most complex, based on grand mean DOT occupational complexity ratings that appear in the final column of Table S2.

Results of second-order meta-analyses are presented for 47 applicable variables. Specifically, Motivations, Values, and Interests (Table S10), Interpersonal (Table S11), Attitudes and Well-Being (Table S12), Counterproductivity (Table S13), and Performance (Table S14). Second-order meta-analyses for all eight available occupations are then presented in Table S15.

Results of evaluations of publication bias and sensitivity analyses are presented for firstorder meta-analyses (Tables S16 and S17) and second-order meta-analyses (Tables S18-S20).

## Table S1

## Descriptions and Meta-Analytic Sources of Occupational Variables

Variable	Rating Source/Description	Meta-Analytic Source(s)
Motivations, Values, and Interests		
Education		
Goal orientation		
Learning	Self-reported measures of a goal orientation to seek opportunities to learn and grow in performance settings.	Payne et al. (2007)
Performance avoidance	Self-reported measures of a goal orientation to avoid disproval and negative judgments about one's competence in performance settings.	Payne et al. (2007)
Performance prove	Self-reported measures of a goal orientation to prove one's competence and gain favorable judgments in performance settings.	Payne et al. (2007)
Academic self-efficacy	Self-reported measures of motivation to perform academically based on one's perceived self-efficacy.	Stajkovic et al. (2018)
Academic procrastination	Self-reported measures of postponing, delaying, or putting off academic tasks or responsibilities.	van Eerde (2004)
Job Application	•	
Job search self-regulation	Self-reported measures of attitudes and behaviors directed at exploring and clarifying job search goals, as well as planning and self-regulating actions to implement them.	van Hooft et al. (2015)
Applicant reactions: Test motivation	Self-reported measures of applicants' motivation to take selection tests administered as part of a hiring process.	Hausknecht et al. (2004)
Assessment center dimension: Drive	AC-rated measures of assessee's high level of activity, high performance standards, persistence in achievement, and expressed desire to advance to higher job levels.	Dilchert & Ones (2009); Meriac et al. (2008)
On the Job		
Regulatory focus		
Prevention	Self-reported measures of sensitivity to and self-regulation around positive stimuli or goals at work.	Lanaj et al. (2012)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Promotion	Self-reported measures of sensitivity to and self-regulation around negative stimuli or goals at work.	Lanaj et al. (2012)
Psychological needs		
Autonomy	Self-reported measures of a need to act with behavioral ownership and feel psychologically free at work.	van den Broeck et al. (2016)
Competence	Self-reported measures of a need for a sense of mastery over the environment and to develop new skills at work.	van den Broeck et al. (2016)
Relatedness	Self-reported measures of a need to love and feel connected to others at work.	van den Broeck et al. (2016)
Performance motivation		
Expectancy	Self-reported measures of motivation to perform a task based on expectations that performance will result in desired outcomes.	Judge & Ilies (2002)
Goal-setting	Self-reported measures of motivation to perform a task based on the level and/or difficulty of its goals.	Judge & Ilies (2002)
Self-efficacy	Self-reported measures of motivation to perform a task based on one's perceived self-efficacy.	Judge & Ilies (2002)
Demonstrating effort	Other-rated measures of hard work, extra effort, and willingness to work long hours under adverse conditions.	Rojon et al. (2015)
Employee engagement		
Overall	Self-reported measures of attitudes about the investment of energies in the experience or performance of work.	Young et al. (2018)
Absorption	Self-reported measures of absorption in work activities.	Young et al. (2018)
Dedication	Self-reported measures of dedication to high work performance.	Young et al. (2018)
Vigor	Self-reported measures of vigor in carrying out work activities.	Young et al. (2018)
Career/Lifespan		
Entrepreneurial intentions	Self-reported measures of expressed behavioral intention to become an entrepreneur.	Zhao et al. (2010)
Procrastination	Self-reported measures of postponing, delaying, or putting off tasks or decisions.	Steel (2007)
Workaholism Personal values	Self-reported measures of an addiction to work.	Clark et al. (2016)
Self-enhancement	Self-reported measures of meta-values of self-interest, success, and dominance over others and resources.	Parks-Leduc et al. (2015)
Achievement	Self-reported measures of values of personal success and demonstrating competence.	Parks-Leduc et al. (2015)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Hedonism	Self-reported measures of values of pleasure and self-gratification.	Parks-Leduc et al. (2015)
Power	Self-reported measures of values of social status, dominance, and control over people and resources.	Parks-Leduc et al. (2015)
Self-transcendence	Self-reported measures of meta-values of concern for the interests and welfare of others.	Parks-Leduc et al. (2015)
Benevolence	Self-reported measures of values of preservation and enhancement of the welfare of in-group members.	Parks-Leduc et al. (2015)
Universalism	Self-reported measures of tolerance, concern, and appreciation for the welfare of humankind and nature.	Parks-Leduc et al. (2015)
Openness to change	Self-reported measures of meta-values of independence of thought, action, feelings, and a readiness for change.	Parks-Leduc et al. (2015)
Self-direction	Self-reported measures of values of autonomy of thought, action.	Parks-Leduc et al. (2015)
Stimulation	Self-reported measures of values of excitement, novelty, and challenge in life.	Parks-Leduc et al. (2015)
Conservation	Self-reported measures of meta-values of order, self-restriction, preservation of the past, and resistance to change.	Parks-Leduc et al. (2015)
Conformity	Self-reported measures of values of behavioral restraint likely to upset or harm others and violate social expectations.	Parks-Leduc et al. (2015)
Security	Self-reported measures of values of personal and social security.	Parks-Leduc et al. (2015)
Tradition	Self-reported measures of values of maintaining cultural and religious traditions and customs.	Parks-Leduc et al. (2015)
Vocational interests		
Realistic	Self-reported measures of career interests in activities involving manipulating machines, tools, or animals.	Mount et al. (2005); Staggs et al. (2007)
Investigative	Self-reported measures of career interests in activities involving thinking, analysis, and research.	Mount et al. (2005); Staggs et al. (2007)
Artistic	Self-reported measures of career interests in activities involving artistic creation.	Mount et al. (2005); Staggs et al. (2007)
Social	Self-reported measures of career interests in activities involving working with and helping others.	Mount et al. (2005); Staggs et al. (2007)
Enterprising	Self-reported measures of career interests in activities involving leading, influencing, or persuading others.	Mount et al. (2005); Staggs et al. (2007)
Conventional	Self-reported measures of career interests in activities involving manipulating data, records, or systems.	Mount et al. (2005); Staggs et al. (2007)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Interpersonal		
Job Application		
Employment interview		
Conventional/Low structure	Interviewer-rated measures of applicant performance in conventional or unstructured employment interviews.	Salgado & Moscoso (2002)
Behavioral/High structure	Interviewer-rated measures of applicant performance in behavioral or structured employment interviews.	Salgado & Moscoso (2002); Roth et al. (2005)
Negotiation performance	Supervisor- and other-rated measures of negotiation performance in field or lab settings.	Sharma et al. (2013)
Assessment center dimension	-	
Communication	AC-rated measures of assessee's conveyance of oral and written information, responding to questions and challenges.	Dilchert & Ones (2009); Meriac et al. (2008)
Consideration of others	AC-rated measures of assessee's consideration of others' feelings, needs, and awareness of implications of decisions for stakeholders	Dilchert & Ones (2009); Meriac et al. (2008)
Influencing others	AC-rated measures of assessee's persuasion of others to act or adopt a viewpoint that produces desired results, as well as actions stemming from convictions rather than others' opinions.	Dilchert & Ones (2009); Meriac et al. (2008)
Assessment center exercise		
Leaderless group discussion	AC-rated measures of assessee's performance in an unstructured group given a problem to resolve in a set period.	Hoffman et al. (2015)
Oral presentation	AC-rated measures of assessee's performance in a scenario describing a problem, preparing recommended solutions, and delivering them orally to a group of supervisors or peers.	Hoffman et al. (2015)
Role-play	AC-rated measures of assessee's performance in a one-on-one conversation with a role-player resolving a given problem.	Hoffman et al. (2015)
On the Job		
Social network roles		
Expressive: Brokerage	Sociometric measures of the number of social holes filled in expressive (i.e., socio-emotional) social networks.	Fang et al. (2015)
Expressive: Indegree	Sociometric measures of the number of ties received from others in expressive (i.e., socio-emotional) social networks.	Fang et al. (2015)
Instrumental: Brokerage	Sociometric measures of the number of social holes filled in instrumental social networks.	Fang et al. (2015)
Instrumental: Indegree	Sociometric measures of the number of ties received from others in instrumental social networks.	Fang et al. (2015)

Variable	Rating Source/Description	Meta-Analytic Source(s)
"Getting along" performance	Supervisor-rated measures of criteria associated with getting along with others (e.g., showing interpersonal skill, sharing credit)	Hogan & Holland (2003)
Interpersonal citizenship behavior	Other-rated measures of behaviors aimed at maintaining and enhancing the organization, mainly directed at other individuals.	Chiaburu et al. (2011)
Career/Lifespan		
Interpersonal sensitivity	Observer-rated measures of accurate judgment about or recall of others' behaviors or appearance.	Hall et al. (2009)
Leadership Overall	A mix of leadership emergence and effectiveness.	DeRue et al. (2011)
Emergence	Self-reported measures of leadership position occupation, other- rated rankings or nominations in leaderless groups, sociometric ratings, or participation in leadership activities	Judge et al. (2002a)
Effectiveness	Other-rated measures of subordinates' and supervisors' ratings of leadership effectiveness.	Judge et al. (2002a)
Group performance Transformational leadership	Outcomes of group productivity (e.g., units produced).	DeRue et al. (2011)
Overall	Other-rated measures of behaviors involving meaningful leadership exchanges that produce vision-driven change.	Bono & Judge (2002); Deinert et al. (2015)
Charisma	A combination of other-rated idealized influence (e.g., identification with a leader's vision) and inspirational motivation (e.g., fostering optimism via verbal and symbolic action).	Banks et al. (2017); Bono & Judge (2002)
Individualized consideration	Other-rated measures of behaviors providing followers with opportunities for growth and development, coaching, and personalized consulting.	Bono & Judge (2002); Deinert et al. (2015); DeRue et al. (2011)
Intellectual stimulation	Other-rated measures of behaviors exhorting followers to reframe problems, develop novel ideas, or approach issues in new ways.	Bono & Judge (2002); Deinert et al. (2015); DeRue et al. (2011)
Transactional leadership	Other-rated measures of behaviors aimed at monitoring and controlling employees through rational or economic means.	
Contingent reward	Other-rated measures of behaviors focused on exchanges of tangible or nontangible support and resources to followers based on their efforts and performance.	Bono & Judge (2002)
Management by exception	Other-rated measures of behaviors involving setting performance standards and monitoring deviations, acting on an as-needed basis.	Bono & Judge (2002)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Passive leadership	Other-rated measures of behaviors involving passive leadership and intervening only when problems become serious.	Bono & Judge (2002)
Attitudes and Well-Being		
Education		
Adjustment to college		
Overall	Self-reported measures of the degree to which one has adapted to college in general.	Credé & Niehorster (2012)
Academic	Self-reported measures of the degree to which one has adapted to the academic demands of college.	Credé & Niehorster (2012)
Social	Self-reported measures of the degree to which one has integrated themselves into the social environment of college.	Credé & Niehorster (2012)
Personal-emotional	Self-reported measures of the degree to which one experiences stress, anxiety, and/or physical reactions to college demands.	Credé & Niehorster (2012)
Institutional attachment	Self-reported measures of the degree to which one identifies with and has become emotionally attached to university community.	Credé & Niehorster (2012)
Study attitudes	Self-reported measures of a positive attitude toward studying.	Credé & Kuncel (2008)
Career decision-making difficulties	Self-reported measures of cognitive and affective difficulties in making career-related decisions.	Martincin & Stead (2015)
Job Application	C	
Applicant attraction to organizations	Self-reported measures of attitudinal attraction towards a prospective employer (i.e., applicant attraction).	Swider et al. (2015)
Applicant reactions: Procedural justice	Self-reported measures of applicants' attitudes, affect, or cognitions about the procedural justice of a hiring process.	Hausknecht et al. (2004)
Assessment center dimension: Stress tolerance	AC-rated measures of assessee's effectiveness in diverse or novel situations under pressure, opposition, and disappointment.	Dilchert & Ones (2009); Meriac et al. (2008)
On the Job		· · · ·
Job satisfaction	Self-reported measures of overall job satisfaction.	Judge et al. (2002b); Seltzer et al. (2017)
Organizational commitment Global	Self-reported measures of overall attachment to an organization	Choi et al (2015)
Affective	Self-reported measures of emotional attachment to an organization.	Choi et al. (2015)
Continuance	Self-reported measures of the evaluation of costs and benefits associated with leaving an organization.	Choi et al. (2015)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Normative	Self-reported measures of felt obligation to remain with an organization.	Choi et al. (2015)
Turnover intentions	Self-reported measures of intention to turnover from an employer.	Harari et al. (2018); Zimmerman (2008)
Work-life balance		
Family interference with work	Self-reported measures of the degree to which family role participation interferes with work role responsibilities.	Allen et al. (2012)
Work interference with family	Self-reported measures of the degree to which work role participation interferes with family role responsibilities.	Allen et al. (2012)
Work-nonwork spillover: Negative	Self-reported measures of the degree to which work (nonwork) role participation is worsened by participating in the other role.	Michel et al. (2011)
Work-nonwork spillover: Positive	Self-reported measures of the degree to which work (nonwork) role participation is improved by participating in the other role.	Michel et al. (2011)
Expatriate adjustment		
Overall	Self-reported measures of the degree to which one has adapted to expatriate life overall.	Harari et al. (2018)
General	Self-reported measures of the degree to which one has adapted to everyday life experiences in the new culture (e.g., food, weather).	Harari et al. (2018)
Interactional	Self-reported measures of the degree to which one has adapted to interacting with host-nationals.	Harari et al. (2018)
Work	Self-reported measures of the degree to which one has adapted to foreign work roles.	Harari et al. (2018)
Burnout	6	
Emotional exhaustion	Self-reported measures of low energy, negative affect, and perceptions of depleted emotional resources due to work stress.	Swider & Zimmerman (2010); You et al. (2015)
Depersonalization	Self-reported measures of attempts to cope with work stress by distancing from others through callous or uncaring responses.	Swider & Zimmerman (2010); You et al. (2015)
Personal accomplishment	Self-reported measures of self-evaluative feelings of competence and achievement at work.	Swider & Zimmerman (2010); You et al. (2015)
Leader-member exchange	Self-reported measures of the quality of exchange relationship with a manager or supervisor.	Dulebohn et al. (2012)
Abusive supervision perceptions	Self-reported measures of supervisor engagement in hostile verbal and nonverbal (e.g., physical) behaviors.	Mackey et al. (2017)
Workplace harassment perceptions	Self-reported measures of coworker engagement in bullying, victimization and other hostile behaviors	Nielsen et al. (2017)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Justice perceptions		
Distributive	Self-reported measures of fairness about the outcome one receives.	Huang et al. (2017)
Informational	Self-reported measures of the extent to which interpersonal communication is candid, thorough, and timely.	Huang et al. (2017)
Interpersonal	Self-reported measures of the extent to which one is treated with politeness, sensitivity, and dignity.	Huang et al. (2017)
Procedural	Self-reported measures of fairness about the decision process.	Huang et al. (2017)
Safety climate	Self-reported measures of perceptions of an organizational climate for safe behavior.	Beus et al. (2015)
Career/Lifespan		
Career adaptability	Self-reported measures of preparation for, control over, curiosity about, and self-efficacy about one's career opportunities.	Rudolph et al. (2017)
Career satisfaction	Self-reported measures of satisfaction with one's career.	Ng & Feldman (2014b)
Happiness	Self-reported measures of happiness.	Steel et al. (2008)
Life satisfaction	Self-reported measures of satisfaction with life.	Seltzer et al. (2017); Steel et al. (2008)
Quality of life	Self-reported measures of satisfaction with quality of life.	Steel et al. (2008)
Counterproductivity		
Education		
Academic dishonesty	Self-reported measures of cheating, plagiarism, or unauthorized help in academic settings.	Giluk & Postlethwaite (2015)
Job Application		
Applicant faking	Self-reported measures of applicant versus incumbent personality.	Birkeland et al. (2006)
On the Job		
Safety performance	Self-reported measures of using safety equipment, showing regard	Beus et al. (2015)
	for safety procedures, and following workplace safety programs.	
T	Other-rated and objective measures of poor attendance,	$H_{}(1002)$
irresponsible benavior	directions, absorboism, or substance use	Hough (1992)
Counterproductive work behavior	directions, absenteeism, of substance use.	
Counterproductive work behavior	Self-reported and objective measures of deviant behaviors at work	Carpenter & Berry (2017): Darr
Overall	(e.g., theft, disciplinary issues, property damage, rule breaking).	(2011): van Aarde et al. $(2017)$
Other-ratings	Other-rated measures of deviant behaviors at work (e.g., theft, disciplinary issues, substance abuse, property damage).	Berry et al. (2012)

Variable	Rating Source/Description	Meta-Analytic Source(s)
	Self-reported and objective measures of deviant behaviors	
Interpersonal	targeted at other individuals (e.g., violence, gossip, theft from	Berry et al. (2007)
	coworkers).	
Organizational	Self-reported measures of deviant behaviors targeted at the	Berry et al. (2007)
8	organization (e.g., working slowly, damaging property).	
Cyberloafing	Self-reported measures of using technology to idle instead of	Mercado et al. (2017)
	WORK.	
Withdrawal behavior	Self-reported and other-rated measures of avoidance of or	Carpenter & Berry (2017)
Absontasism	Solf reported manufactor of absona from or latenass to work	$\mathbf{L} = \mathbf{r} + $
Career/Lifesnan	Sen-reported measures of absence from of fateness to work.	Li et al. (2014)
Turnover		
Turnover	Objective measures of voluntary quitting discharges or length of	
Turnover/tenure	times employee have been with an organization (reverse-keved).	Barrick & Mount (1991)
Turnover	Objective measures of voluntary quitting and discharge.	Zimmerman (2008)
Voluntary turnover	Objective measures of voluntary quitting.	Rubenstein et al. (2018)
,	Self-reported, other-rated, and objective measures or clinical	Lange et al. (2011), Millag 9
Antisocial behavior	interviews assessing criminal and antisocial behavior (e.g.,	Jones et al. $(2011)$ ; Miller &
	stealing, stalking, bullying), delinquency, and conduct disorder.	Lyman (2001)
Aggression	Self-reported, other-rated, and objective measures or clinical	Iones et al. $(2011)$
Aggression	interviews assessing physical aggression or violence.	Jones et al. (2011)
Accidents		
Occupational	Self-reported and objective measures assessing safety incidents	Beus et al. (2015)
	resulting in worker injury or property damage at work.	( )
Vehicular	Self-reported and objective measures assessing vehicular	af Wåhlberg et al. (2017)
Douformonoo	accidents or injuries taking place in traffic.	
Education		
Eaucation	Self-reported measures of regular engagement in sound study	
Study habits	behaviors and routines	Credé & Kuncel (2008)
Academic attendance	Self-reported measures of postsecondary class attendance	Credé et al. (2010)
	Self-reported and objective measures of primary, secondary, or	D (2000)
Academic performance	postsecondary grades or grade point average.	Poropat (2009)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Academic performance: Postsecondary	Self-reported and objective measures of postsecondary grades or grade point average.	McAbee & Oswald (2013); Salgado & Táuriz (2014); Stajkovic et al. (2018); van Aarde et al. (2017)
Academic success	Self-reported and objective measures of secondary or postsecondary grades or grade point average, and attendance	Hough (1992)
Educational attainment	Self-reported and objective measures of educational attainment.	Ng & Feldman (2010) Barrick & Mount (1991); Darr (2011): Hurtz & Donovan
Training performance	Supervisor-rated measures of training performance.	(2000); Salgado (1997); Salgado & Táuriz (2014); van Aarde et al. (2017)
Training success	Self-reported, other-rated, and objective measures of knowledge or skill acquired and applied to different settings, people, or situations, and changes from learning that persist over time, test scores, or measures of completed training.	Blume et al. (2010); Hough (1992)
Job Application		
Situational judgment tests		
Knowledge	Self-reported measures of applicants' evaluations of the effectiveness of possible responses to work-related situations.	McDaniel et al. (2007)
Behavioral tendency	Self-reported measures of applicants' likely behavioral responses to given work-related situations.	McDaniel et al. (2007)
Job search success		
Job search intensity	Self-reported measures of the frequency and scope of job search behaviors, and resources devoted toward that search.	van Hooft et al. (2015)
Employment status	Self-reported measure of whether a job seeker had found a new job or not after a given period.	van Hooft et al. (2015)
Employment quality	Self-reported and objective measures of extrinsic factors and subjective attitudes about a new job vis-à-vis a prior position.	van Hooft et al. (2015)
Assessment center dimension		
Organizing and planning	AC-rated measures of assessee's systematic arrangement of work and resources, and that of others, for task achievement, as well as anticipation of and preparation for the future.	Dilchert & Ones (2009); Meriac et al. (2008)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Problem solving	AC-rated measures of assessee's information gathering and analysis of technical information, selection of actions, use of resources in new ways, and generation and recognition of solutions.	Dilchert & Ones (2009); Meriac et al. (2008)
Assessment center exercise		
Case analysis	AC-rated measures of assessee's performance in a given scenario describing a problem and preparing a set of recommended solutions to higher management in writing.	Hoffman et al. (2015)
In-basket	AC-rated measures of assessee's performance in a scenario managing paperwork that arrives for the typical manager.	Hoffman et al. (2015)
On the Job		
Occupational performance	Other-rated and objective measures of training or overall job performance, or outcomes of performance.	Barrick & Mount (1991); Hurtz & Donovan (2000); Salgado (1997); Salgado & Táuriz (2014); van Aarde et al. (2017)
Training and job performance	Supervisor-rated measures of training and overall job performance.	Barrick & Mount (1991)
Overall job performance	1	
Supervisor-ratings	Supervisor-rated measures of overall job performance.	Darr (2011); Hogan & Holland (2003); Judge et al. (2013); Salgado & Táuriz (2014); Schmidt & Oh (2013); Shaffer & Postlewaite (2012); van Aarde et al. (2017)
Peer-ratings	Peer-rated measures of overall job performance.	Conway et al. (2001)
Subordinate-ratings	Subordinate-rated measures of overall job performance.	Conway et al. (2001)
Maximal performance	Supervisor-rated or objective measures of maximum performance levels in a work-related activity.	Beus & Whitman (2012)
Typical performance	Supervisor-rated or objective measures of typical performance levels in a work-related activity.	Beus & Whitman (2012)
Technical performance	Supervisor-rated measures of proficiency in performing activities formally recognized as part of the job, which contribute to the organization's technical core.	Hogan & Holland (2003); Judge et al. (2013); van Aarde et al. (2017)

Variable	Rating Source/Description	Meta-Analytic Source(s)
Contextual performance	Other-rated measures of discretionary behaviors that in aggregate,	Judge et al. (2013); van Aarde et
Organizational attizanship habaviar	promote effective organizational functioning.	al. (2017)
Organizational citizenship behavior	A combination of other-rated measures of interpersonal	
Overall	organizational and/or change-based citizenship behaviors	Chiaburu et al. (2011)
	Other-rated measures of behaviors aimed at maintaining and	
Global	enhancing organizational context that supports task performance.	Chiaburu et al. (2011)
Organizational	Other-rated measures of behaviors aimed at maintaining and	Chiphuru at al. $(2011)$
Organizational	enhancing the organization, mainly directed at the organization.	Cinadulu et al. (2011)
Change	Other-rated measures of behaviors aimed at enhancing the	Chiaburu et al. (2011)
	organization by bringing about proactive and positive changes.	
Voice		
011	Self-reported measures of discretionary expressions of	$\mathbf{C}_{\mathbf{b}} = \mathbf{c}_{\mathbf{b}} + $
Overall	organizationally relevant content intended to affect the work	Chamberlin et al. (2017)
	context and targeted at someone in the organization.	
	Self-reported measures of discretionary expressions of	$\mathbf{C}_{\mathbf{b}} = \mathbf{c}_{\mathbf{b}} + $
Pronibitive	organizationally relevant content regarding problems and	Chamberlin et al. (2017)
	concerns that could lead to harmful outcomes for the organization.	
	Self-reported measures of discretionary expressions of	$C_{1}$ 1 1; (1)(2017)
Promotive	organizationally relevant content regarding opportunities and	Chamberlin et al. (2017)
	initiatives to improve future organizational functioning.	
	Other-rated measures of incumbent proficiency in altering their	
Adaptive performance	performance behavior in response to the demands of a new task,	Huang et al. (2014)
	event, situation, or an environmental constraint.	Haugh (1002): Durmage at al
Creativity	other-rated and objective measures of product creation, idea	Hough $(1992)$ ; Puryear et al. $(2017)$
Performance rating leniency	Self-reported measures of leniency in performance ratings	(2017) Harari et al. (2015)
Carpor/Lifesnan	Sen-reported measures of remency in performance ratings.	Haran et al. (2015)
Job complexity	Self-reported measures of the complexity of one's job	Zimmerman (2008)
	Self-reported measures of behaviors aimed at actively changing	
Job crafting	the perceived characteristics of one's job.	Rudolph et al. (2017)
One eniorite estimation	Self-reported or objective measures of tenure with an	$\mathbf{N}_{\mathbf{r}} = 0 \cdot \mathbf{\Gamma}_{\mathbf{r}} 1 1_{\mathbf{r}} $
Organizational tenure	organization.	Ng & Feldman (2010)
Damonu al data	Objective measures of level changes in job positions, salary,	Barrick & Mount (1991);
Personnel data	turnover/tenure, and productivity.	Salgado (1997)

Variable	Rating Source/Description	Meta-Analytic Source(s)		
Commendable behavior	Objective measures of commendations, or absence of disciplinary actions, demotions, and involuntary discharge.	Hough (1992)		
Productivity	Objective measures of productivity (e.g., units sold).	Barrick & Mount (1991); Salgado & Táuriz (2014); van Aarde et al. (2017)		
Status change	Objective measures of level changes in job positions.	Barrick & Mount (1991)		
Promotions	Objective measures of number of promotions received.	Ng & Feldman (2010)		
Salary	Objective measures of salary level or compensation.	Ng & Feldman (2014a)		

	Dictionary of Occupational Titles (DOT) Information						
Meta-Analytic Source	Occupation Included	Reference Occupational Title	Complexity Rating <sup>a</sup>				
y ,	F		Data	People	Things		
Skilled/Semi-Skilled				^			
Barrick & Mount (1991)	Clerical workers	Clerk, General	5	6	2		
	Nurses' aides	Nurse Assistant	6	7	4		
	Farmers	Farmer, General	1	6	1		
	Flight attendants	Airplane Flight Attendant	3	6	7		
	Medical assistants	Medical Assistant	3	6	2		
	Orderlies	Orderly	6	7	4		
	Airline baggage handlers	Baggage Handler	6	8	7		
	Assemblers	Assembler, Electrical Accessories I	6	8	7		
	Telephone operators	Telephone Operator	6	6	2		
	Grocery clerk	Sales Clerk, Food	4	7	7		
	Truck drivers	Truck Driver, Heavy	6	6	3		
	Production workers	Assembler, Production	6	8	7		
Hurtz & Donovan (2000)	Skilled and semi-skilled	Laborer, General	6	8	6		
Salgado (1997): European	Skilled labor	Laborer, General	6	8	6		
Salgado et al. (2015)	Skilled manual	Laborer, General	6	8	6		
	Clerical workers	Clerk, General	5	6	2		
Sales							
Barrick & Mount (1991)	Sales	Sales Representative, General Merchandise	3	5	7		
Hurtz & Donovan (2000)	Sales	Sales Representative, General Merchandise	3	5	7		
Salgado (1997): European	Sales	Sales Representative, General Merchandise	3	5	7		
Salgado et al. (2015)	Sales	Sales Representative, General Merchandise	3	5	7		
Military		1					
Darr (2011)	Non-commissioned members	Infantry Operations Specialist	3	6	7		
	Officers	Infantry Unit Leader	1	3	7		
Hough (1992)	Military	Infantry Operations Specialist	3	6	7		
Salgado et al. (2015)	Military	Infantry Operations Specialist	3	6	7		
Health Care							
Hough (1992)	Health care workers	Nurse, General Duty	3	6	4		

## Summary of Occupations Included in C Meta-Analyses and Dictionary of Occupational Titles (DOT) Information

		Dictionary of Occupational Titles (DOT) Information					
Meta-Analytic Source	Occupation Included	Reference Occupational Title	Cor	Complexity Rating <sup>a</sup>			
-	-	-	Data	People	Things		
Salgado et al. (2015)	Health care workers	Nurse, General Duty	3	6	4		
Customer Service							
Hurtz & Donovan (2000)	Customer service	Customer Service Representative	3	6	2		
Salgado et al. (2015)	Customer service	Customer Service Representative	3	6	2		
Police							
Barrick & Mount (1991)	Police	Police Officer I	2	6	3		
Salgado (1997): European	Police	Police Officer I	2	6	3		
Salgado et al. (2015)	Police	Police Officer I	2	6	3		
Manager							
Barrick & Mount (1991)	Foremen	Labor Crew Supervisor	1	3	1		
	Top executives	Vice President	1	1	7		
Hurtz & Donovan (2000)	Managers	Manager, Industrial Organization	1	1	7		
Salgado (1997): European	Managers	Manager, Industrial Organization	1	1	7		
Salgado et al. (2015)	Managers	Manager, Industrial Organization	1	1	7		
-	Supervisors	General Supervisor	1	6	7		
Professional							
Barrick & Mount (1991)	Engineers	Electrical Engineer	0	6	1		
	Architects	Architect	0	6	1		
	Attorneys	Lawyer	0	1	7		
	Accountants	Accountant	1	6	2		
	Teachers	Teacher, Secondary School	2	2	7		
	Doctors	General Practitioner	1	0	1		
	Ministers	Clergy Member	1	0	7		
Gnambs (2015)	Computer programmers	Computer Programmer	1	6	2		
Klassen & Tze (2014)	Teachers	Teacher, Secondary School	2	2	7		
Mol et al. (2005)	Expatriates: Managers	Manager, Industrial Organization	1	1	7		
	Expatriates: Missionaries	Clergy Member	1	0	7		
	Expatriates: Technicians	Electrical Engineer	0	6	1		
Zhao et al. (2010)	Entrepreneurs	President	1	1	7		

*Note.* Reference Occupational Title, taken from the Dictionary of Occupational Titles (DOT; <u>https://www.occupationalinfo.org/</u>), is the closest approximation to the occupation reported in the source meta-analyses.

<sup>a</sup> Smaller ratings reflect greater occupational complexity across Data, People, and Things dimensions. The overall grand mean complexity rating across metaanalyses and dimensions was used to rank the eight occupations from least to most complex. These values are reported in Table S9.

### Table S3

Conceptual Category by Career Domain	n <sub>var</sub>	$\overline{\rho}_M$	$SD_{ m  ho}$	Min	Qrt1	Med	Qrt3	Max
Overall		.20	.13	25	.11	.18	.26	.77
Motivations, Values, and Interests	44	.22	.17	.00	.09	.21	.31	.77
Education	5	.33	.27					
Job Application	3	.23	.05					
On the Job	13	.31	.08					
Career/Lifespan	23	.15	.16					
Interpersonal	27	.12	.08	.02	.06	.10	.17	.32
Education	0	-	-					
Job Application	9	.09	.05					
On the Job	6	.13	.07					
Career/Lifespan	12	.15	.10					
Attitudes and Well-Being	40	.23	.13	13	.16	.20	.28	.55
Education	7	.37	.10					
Job Application	3	.14	.04					
On the Job	25	.18	.09					
Career/Lifespan	5	.34	.16					
Counterproductivity	18	20	.14	42	25	22	17	.25
Education	1	22	-					
Job Application	1	.25	-					
On the Job	9	25	.10					
Career/Lifespan	7	19	.06					
Performance	46	.17	.10	.00	.10	.16	.24	.47
Education	8	.25	.07					
Job Application	9	.12	.11					
On the Job	20	.17	.07					
In-Role	9	.20	.09					
Extra-Role	4	.20	.02					
Change-Oriented	7	.11	.02					
Career/Lifespan	9	.16	.13					

## Summary of Meta-Analyses of C and Occupational Variables

*Note.*  $n_{var}$  = total number of variables per category,  $\overline{\rho}_M$  = mean estimated population correlation across variables,  $SD_{\rho}$  = between-variables standard deviation in population correlations, Min = minimum correlation, Qrt1 = correlation at the first quartile (i.e., 25<sup>th</sup> percentile), Med = median correlation, Qrt3 = correlation at the third quartile (i.e., 75<sup>th</sup> percentile), Max = maximum correlation. Variables with a negative valence (e.g., counterproductive work behavior) or a neutral valence (e.g., personal values) were rekeyed in a positive direction prior to calculating overall descriptive statistics.
# Meta-Analyses of C and Motivations, Interests, and Values Variables

Variable	т	k	Ν	$\overline{r}$	$SD_r$	$\overline{\rho}$	$SD_{\rho}$	95%	6 CI	80%	6 CR
						•	·	LO	HI	LO	HI
Education											
Goal orientation											
Learning	1	12	3,066	.26	.06	.33	.02	.23	.30	.30	.35
Performance avoidance	1	6	1,732	14	.06	18	.00	19	10	18	18
Performance prove	1	12	3,066	.04	.06	.05	.00	.01	.08	.05	.05
Academic self-efficacy	1	5	875	.25	.08	.32	.05	.18	.32	.26	.38
Academic procrastination	1	11	2,870	65	.04	77	.02	67	63	79	75
Job Application											
Job search self-regulation	1	13	5,026	.22	.10	.27	.10	.17	.27	.14	.39
Applicant reactions: Test motivation	1	7	2,812	.20	.05	.25	.02	.16	.24	.23	.27
Assessment center dimension: Drive	2	9	5,962	.15	.13	.18	.06	.06	.23	.10	.26
On the Job											
Regulatory focus											
Prevention	1	9	2,437	.21	.21	.25	.24	.08	.35	05	.56
Promotion	1	9	2,437	.31	.11	.39	.11	.24	.38	.24	.53
Psychological needs											
Autonomy	1	6	1,588	.25	.14	.33	.17	.14	.37	.11	.55
Competence	1	6	1,588	.38	.09	.47	.09	.31	.45	.36	.58
Relatedness	1	6	1,588	.29	.16	.37	.19	.16	.42	.12	.61
Performance motivation											
Expectancy	1	11	1,487	.16	.11	.22	.10	.10	.22	.10	.35
Goal-setting	1	18	2,211	.22	.11	.27	.08	.17	.27	.17	.37
Self-efficacy	1	14	3,483	.17	.14	.22	.16	.10	.24	.01	.43
Demonstrating effort	1	10	12,236	.15	.09	.23	.12	.10	.20	.07	.38

Variable	т	k	Ν	$\overline{r}$	$SD_r$	$\overline{\rho}$	$SD_{ m  ho}$	95%	6 CI	80%	G CR
								LO	HI	LO	HI
Employee engagement											
Overall	1	57	25,424	.30	.11	.36	.12	.27	.33	.21	.51
Absorption	1	20	7,668	.25	.09	.30	.09	.21	.29	.18	.42
Dedication	1	20	7,667	.26	.12	.31	.13	.21	.31	.14	.48
Vigor	1	20	7,665	.30	.10	.36	.11	.26	.34	.22	.50
Career/Lifespan											
Entrepreneurial intentions	1	12	3,804	.16	.14	.19	.15	.08	.24	003	.38
Procrastination	1	20	4,012	62	.05	74	.03	64	60	77	70
Workaholism	1	5	1,807	.13	.15	.16	.17	.00	.26	06	.37
Personal values											
Self-enhancement	1	54	53,377	.00	.07	.00	.09	02	.02	11	.11
Achievement	1	55	54,946	.12	.09	.15	.11	.10	.14	.01	.30
Hedonism	1	54	54,391	15	.12	20	.15	18	12	39	01
Power	1	54	54,599	.04	.08	.05	.09	.02	.06	06	.17
Self-transcendence	1	56	53,855	.02	.13	.03	.16	01	.05	18	.24
Benevolence	1	56	55,072	.05	.13	.07	.16	.02	.08	14	.27
Universalism	1	54	54,364	01	.15	01	.18	05	.03	24	.22
Openness to change	1	54	53,369	06	.15	08	.20	10	02	34	.18
Self-direction	1	55	54,959	.01	.18	.01	.24	04	.06	30	.32
Stimulation	1	51	53,692	12	.14	16	.18	16	08	39	.07
Conservation	1	54	53,369	.17	.10	.23	.12	.14	.20	.08	.39
Conformity	1	55	54,959	.20	.09	.27	.11	.18	.22	.13	.41
Security	1	54	54,377	.27	.14	.38	.19	.23	.31	.13	.62
Tradition	1	51	53,692	.07	.09	.10	.12	.05	.09	06	.25
Vocational interests											
Realistic	2	51	14,456	.04	.06 <sup>a</sup>	.05	.00	.02	.06	.05	.05
Investigative	2	51	14,456	.09	.06 <sup>a</sup>	.10	.02	.07	.11	.08	.13
Artistic	2	51	14,456	05	.06 <sup>a</sup>	06	.00	07	03	06	06

Variable	т	k	Ν	$\overline{r}$	$SD_r$	ρ	$SD_{ ho}$	95%	6 CI	80%	6 CR
								LO	HI	LO	HI
Social	2	51	14,456	.08	.06 <sup>a</sup>	.09	.05	.06	.10	.03	.16
Enterprising	2	51	14,456	.07	.06 <sup>a</sup>	.08	.00	.05	.08	.08	.08
Conventional	2	51	14,456	.18	.06 <sup>a</sup>	.20	.01	.16	.19	.19	.21

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of Motivations, Values, and Interests variables, see Table S10.

<sup>a</sup> SD<sub>r</sub> was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

Variable	m	k	N	$\overline{r}$	$SD_r$	$\overline{\rho}$	$SD_{ m  ho}$	95%	6 CI	80%	5 CR
								LO	HI	LO	HI
Job Application											
Employment interview											
Conventional/Low structure	1	18	2,163	.13	.08	.18	.00	.09	.17	.18	.18
Behavioral/High structure	2	20	3,003	.12	.08	.15	.00	.08	.15	.15	.15
Negotiation performance	2	11	900	.04	.21	.05	.00	09	.16	.05	.05
Assessment center dimension											
Communication	2	8	5,595	.06	.12	.07	.00	03	.14	.07	.07
Consideration of others	2	9	5,823	.09	.08	.11	.00	.03	.14	.11	.11
Influencing others	2	8	5,771	.09	.15	.11	.00	01	.20	.11	.11
Assessment center exercise											
Leaderless group discussion	1	10	2,801	.04	.11	.05	.11	03	.11	09	.19
Oral presentation	1	3	602	.09	.08	.10	.05	004	.18	.04	.17
Role-play	1	5	1,413	.02	.08	.02	.06	05	.09	05	.10
On the Job											
Social network roles											
Expressive: Brokerage	1	52	2,975	.05	.13	.06	.01	.01	.09	.04	.07
Expressive: Indegree	1	54	3,943	.05	.12	.06	.01	.02	.08	.05	.07
Instrumental: Brokerage	1	52	2,975	.09	.14	.10	.06	.05	.13	.02	.18
Instrumental: Indegree	1	57	4,271	.09	.14	.10	.09	.05	.13	02	.22
"Getting along" performance	2	40	3,736	.15	.11	.21	.00	.11	.19	.21	.21
Interpersonal citizenship behavior	1	28	6,347	.16	.14	.22	.17	.11	.21	.002	.44
Career/Lifespan											
Interpersonal sensitivity	1	15	1,185	.06	.12	.08	.05	.00	.12	.02	.14

# Meta-Analyses of C and Interpersonal Variables

Variable	т	$m$ $k$ $N$ $\overline{r}$		$\overline{r}$	$SD_r$	$\overline{\rho}$	$SD_{\rho}$	95% CI		80%	G CR
								LO	HI	LO	HI
Leadership											
Overall	1	39	10,056	.19	.13	.27	.16	.15	.23	.06	.48
Emergence	1	17	3,655	.23	.07	.32	.03	.20	.26	.29	.36
Effectiveness	1	18	3,870	.11	.07	.15	.01	.08	.14	.14	.17
Group performance	1	5	203	.21	.18	.30	.12	.06	.37	.14	.46
Transformational leadership											
Overall	2	35	5,937	.13	.16	.18	.03	.07	.18	.14	.22
Charisma	2	16	3,212	.07	.09	.10	.00	.03	.12	.10	.10
Intellectual stimulation	3	17	3,047	.01	.08	.02	.05	03	.05	05	.09
Individualized consideration	3	16	2,925	.12	.15	.16	.07	.04	.19	.07	.26
Transactional leadership											
Contingent reward	1	6	1,469	.02	.07	.03	.02	03	.07	001	.06
Management by exception	1	6	1,469	02	.06	03	.00	07	.03	03	03
Passive leadership	1	7	1,564	09	.08	13	.07	15	03	21	04

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of Interpersonal variables, see Table S11.

Variable	m	k	N	$\overline{r}$	$SD_r$	$\overline{\rho}$	$SD_{\rho}$	95%	6 CI	80%	5 CR
								LO	HI	LO	HI
Education											
Adjustment to college											
Overall	1	3	1,201	.37	.05	.43	.04	.31	.43	.39	.48
Academic	1	6	2,089	.45	.13	.55	.15	.35	.55	.36	.74
Social	1	6	2,202	.24	.07	.30	.06	.18	.30	.22	.37
Personal-emotional	1	5	1,644	.23	.14	.28	.16	.11	.35	.08	.49
Institutional attachment	1	4	1,556	.31	.05	.38	.02	.26	.36	.35	.41
Study attitudes	1	4	891	.30	.05	.37	.00	.25	.35	.37	.37
Career decision-making difficulties	1	18	8,180	22	.07	26	.06	25	19	33	18
Job Application											
Applicant attraction to organization	1	17	6,282	.12	.15	.14	.17	.05	.19	07	.36
Applicant reactions: Procedural justice	1	6	1,872	.08	.06	.10	.00	.04	.13	.10	.10
Assessment center dimension: Stress tolerance	2	5	5,086	.14	.12	.17	.00	.03	.24	.17	.17
On the Job											
Job satisfaction	2	102	24,055	.19	.17	.23	.00	.16	.22	.23	.23
Organizational commitment											
Global	1	12	2,782	.24	.14	.29	.15	.16	.32	.10	.48
Affective	1	38	11,041	.20	.15	.25	.17	.15	.25	.03	.46
Continuance	1	18	5,407	.02	.10	.03	.11	03	.07	11	.16
Normative	1	16	5,117	.14	.09	.18	.09	.10	.18	.06	.29
Turnover intentions	2	20	5,165	10	.10	13	.04	15	06	17	08
Work-life balance											
Family interference with work	1	14	4,494	20	.10	25	.11	26	15	39	11
Work interference with family	1	21	6,427	16	.12	20	.13	21	11	37	04
Work-nonwork spillover: Negative	1	20	6,924	18	.07	22	.05	21	15	28	15

# Meta-Analyses of C and Attitudes and Well-Being Variables

Work-nonwork spillover: Positive	1	3	2,646	.11	.05	.14	.04	.06	.17	.08	.20
Expatriate adjustment											
Overall	1	22	4,137	.16	.11	.20	.10	.11	.21	.07	.32
General	1	12	2,735	.10	.09	.13	.07	.05	.15	.04	.21
Interactional	1	13	2,917	.13	.07	.16	.01	.09	.17	.14	.17
Work	1	13	2,743	.20	.09	.24	.08	.15	.25	.14	.35
Burnout											
Emotional exhaustion	2	55	15,758	14	.12	17	.00	18	11	17	17
Depersonalization	2	53	14,319	20	.15	26	.00	24	16	26	26
Personal accomplishment	2	51	12,524	.27	.15	.35	.03	.23	.31	.30	.39
Leader-member exchange	1	9	2,075	.17	.07	.20	.03	.12	.22	.16	.24
Abusive supervision perceptions	1	12	4,368	12	.09	15	.09	17	07	27	03
Workplace harassment perceptions	1	14	5,946	.11	.07	.13	.06	.07	.14	.06	.20
Justice perceptions											
Distributive	1	24	8,313	.16	.11	.19	.11	.12	.20	.04	.33
Informational	1	7	3,530	.17	.09	.20	.09	.10	.24	.08	.32
Interpersonal	1	16	5,710	.13	.14	.16	.16	.06	.20	04	.36
Procedural	1	31	9,412	.14	.12	.17	.13	.10	.18	.01	.33
Safety climate	1	5	971	.10	.07	.12	.01	.04	.16	.10	.13
Career/Lifespan											
Career adaptability	1	12	11,038	.42	.12	.48	.13	.35	.49	.31	.65
Career satisfaction	1	13	11,050	.13	.07	.16	.08	.09	.17	.06	.26
Life satisfaction	2	46	8,303	.19	.10	.24	.03	.16	.22	.20	.28
Happiness	1	4	441	.25	.08	.29	.00	.17	.33	.29	.29
Quality of life	1	4	767	.40	.07	.52	.03	.34	.47	.48	.56

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of Attitudes and Well-Being variables, see Table S12.

# Meta-Analyses of C and Counterproductivity Variables

Variables	т	k	N	$\overline{r}$	$SD_r$	$\overline{\rho}$	SDρ	95%	6 CI	80%	6 CR
								LO	HI	LO	HI
Education											
Academic dishonesty	1	16	5,154	18	.09	22	.09	22	14	34	11
Job Application											
Applicant faking <sup>c</sup>	1	27	88,266	.22	.06	.25	.07	.20	.24	.16	.33
On the Job											
Safety performance	1	16	3,995	.21	.09	.26	.08	.17	.25	.15	.36
Irresponsible behavior	1	37	59,076	25 <sup>a</sup>	.02 <sup>b</sup>	37	.00	26	24	37	37
Counterproductive work behavior											
Overall	3	17	4,350	17	.16	22	.06	25	09	29	15
Other-ratings	1	13	3,332	15	.13	22	.17	22	08	43	005
Interpersonal	1	11	3,458	19	.12	23	.13	26	12	40	07
Organizational	1	8	2,934	34	.08	42	.08	40	28	53	32
Cyberloafing	1	11	3,212	09	.07	11	.05	13	05	17	05
Withdrawal behavior	1	11	2,774	21	.19	27	.23	32	10	56	.03
Absenteeism	1	13	1,582	13	.11	16	.08	19	07	25	06
Career/Lifespan											
Turnover											
Turnover/tenure	1	19	2,759	09	.11	13	.10	14	04	26	.004
Turnover	1	17	1,631	18	.10	22	.03	23	13	26	18
Voluntary turnover	1	8	3,409	15	.13	18	.15	24	06	38	.01
Antisocial behavior	2	44	14,892	24	.05	29	.00	25	22	29	29
Aggression	1	35	10,214	18	.06	22	.01	20	16	23	21
Accidents											
Occupational	1	9	2,163	11	.07	18	.06	16	06	26	11
Vehicular	1	36	23,873	08	.08	11	.12	09	04	26	.04

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of Counterproductivity variables, see Table S13. <sup>a</sup> Mean sample-size weighted observed correlation is a composite. For details on composite formation, see the Supplemental Methods section. <sup>b</sup>  $SD_r$  was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

<sup>c</sup> Effect is not a function of C, but rather reflects evidence that job applicants self-report higher levels of C than job incumbents.

#### Variable $\overline{r}$ 95% CI k Ν $SD_r$ ρ $SD_{\rho}$ 80% CR т LO HI LO HI Education .18 Study habits 5 1,194 .29 .14 .18 .40 .54 1 .13 .36 Academic attendance 6 1.874 .22 .11 .28 .12 .13 .31 .12 .43 1 Academic performance 138 .21 70,926 .19 .24 .26 .15 .23 -.09 .57 1 Academic performance: Postsecondary 35.035 .21 .07 .03 .20 .22 .20 .27 4 91 .24 Academic success .05<sup>b</sup> 37 .24ª .30 .02 .28 .32 15,650 .23 .26 1 25 .02 Educational attainment 18.528 .11 .04 .13 .10 .13 .11 .15 1 Training performance 47 .12 .10 .16 .00 .10 .15 .16 .16 6 10,415 27 .19 .25 Training success 2 3,368 .09 .00 .16 .23 .25 .25 **Job Application** Situational judgment tests Knowledge 38 23,043 .21 .10 .24 .10 .18 .24 .10 .37 1 15 Behavioral tendency 8,234 .30 .16 .34 .17 .22 .38 .11 .56 1 Job search success Job search intensity 27 20.156 .04 .10 .05 .003 .08 -.09 .19 .11 1 Employment status 8 .00 .04 .00 .03 -.03 .03 -.04 .04 7,171 1 Employment quality 5 1.819 .05 .05 .06 .002 .004 .10 .05 .06 1 Assessment center dimension Organizing and planning 9 6,194 .09 .08 .11 .07 2 .04 .14 .02 .20 Problem solving 2 8 .09 .10 .10 .06 .02 .15 .02 .18 5,597 Assessment center exercise Case analysis 358 .04 .05 .04 3 .10 .15 1 -.07 -.002 .10 .11 .02 .24 .30 4 .13 .12 .16 .02 In-basket 1 717

#### Meta-Analyses of C and Performance Variables

On the Job <sup>c</sup>											
In-Role											
Occupational performance	5	296	52,937	.13	.11	.18	.02	.11	.14	.15	.21
Training and job performance	1	94	14,059	.15	.11	.23	.12	.13	.17	.08	.38
Overall job performance											
Supervisor-ratings	10	254	74,835	.17	.09	.27	.04	.16	.18	.22	.33
Peer-ratings	1	12	3,504	.12 <sup>a</sup>	.11	.26	.19	.06	.19	.01	.51
Subordinate-ratings	1	10	3,790	.01	.06	.02	.07	03	.05	07	.11
Self-ratings	1	8	2,621	.25	.09	.31	.09	.19	.31	.19	.43
Maximal performance	1	5	1,769	.08	.07	.12	.07	.02	.14	.03	.22
Typical performance	1	5	1,769	.14	.06	.22	.04	.09	.19	.17	.26
Technical performance	3	152	54,000	.18	.11	.23	.02	.16	.20	.20	.26
Extra-Role											
Contextual performance	2	41	24,282	.17	.09	.23	.08	.14	.19	.13	.33
Organizational citizenship behavior											
Overall	1	71	14,355	.14	.12	.19	.13	.11	.17	.02	.36
Global	1	30	6,233	.15	.11	.21	.12	.11	.19	.05	.36
Organizational	1	20	4,025	.13	.09	.18	.08	.09	.17	.08	.28
Change-Oriented											
Change	1	17	2,629	.08	.11	.11	.10	.03	.13	02	.24
Voice											
Overall	1	12	3,450	.12	.12	.15	.13	.05	.19	02	.31
Prohibitive	1	4	1,143	.09	.09	.11	.08	.003	.18	.01	.21
Promotive	1	8	2,307	.11	.12	.13	.12	.03	.19	03	.29
Adaptive performance	2	79	9,949	.08	.13	.10	.00	.05	.11	.10	.10
Creativity	2	56	16,688	.06	.07	.08	.00	.04	.08	.08	.08
Performance rating leniency	1	18	2,974	.08	.16	.10	.17	.01	.15	12	.31
Career/Lifespan											
Job complexity	1	4	4,070	.02	.03	.02	.00	01	.05	.02	.02
Job crafting	1	5	2,944	.15	.08	.19	.09	.08	.22	.08	.30

Personnel data	2	35	6,905	.10	.11	.14	.01	.06	.13	.13	.15
Commendable behavior	1	23	45,852	.33 <sup>a</sup>	.02 <sup>b</sup>	.47	.00	.32	.34	.47	.48
Productivity	3	28	3,429	.14	.08	.17	.04	.11	.17	.12	.22
Organizational tenure	1	32	8,818	.07	.06	.09	.01	.05	.09	.08	.09
Status change	1	8	2,698	.11	.06	.16	.04	.07	.15	.11	.21
Promotions	1	13	3,520	.06	.06	.07	.00	.03	.09	.06	.07
Salary	1	20	12,019	.09	.08	.10	.08	.05	.12	002	.20

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of Performance variables, see Table S14. <sup>a</sup> Mean sample-size weighted observed correlation is a composite. For details on composite formation, see the Supplemental Methods section.

<sup>b</sup> SD<sub>r</sub> was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

<sup>c</sup> Given the larger number of contributing variables, we divided the On the Job domain into three subcategories of performance: *In-Role* (i.e., performance that is mandatory), *Extra-Role* (i.e., performance that is discretionary, but encouraged), and *Change-Oriented* (i.e., performance that is directed at making or advocating change); their respective effects are  $\overline{\rho} = .21, .20, and .11$ .

Variable	m	k	N	$\overline{r}$	$SD_r$	ρ	$SD_{ m  ho}$	95%	6 CI	80%	6 CR	DOT
								LO	HI	LO	HI	
Low Complexity												
Skilled/Semi-Skilled	5	58	12,028	.14	.10	.21	.09	.12	.17	.09	.32	5.52
Moderate Complexity												
Sales	5	46	5,345	.16	.09	.23	.05	.13	.19	.16	.29	5.00
Military	3	19	5,676	.18	.08	.25	.05	.14	.21	.19	.31	4.92
Health Care	2	18	1,531	.23	.13	.33	.00	.17	.29	.33	.33	4.33
Customer Service	3	17	2,798	.16	.10	.23	.02	.11	.21	.20	.26	3.67
Police	3	25	3,069	.14	.15	.20	.00	.08	.20	.20	.20	3.67
High Complexity												
Managerial	8	105	20,227	.11	.10	.15	.00	.09	.13	.15	.15	3.06
Professional	5	70	6,838	.09	.15	.13	.01	.05	.12	.12	.14	2.69

#### **Meta-Analyses of C and Occupational Performance across Occupations**

*Note.* m = total number of independent meta-analyses, k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 95% CI = 95% confidence interval around observed correlation, 80% CR = 80% credibility interval around population correlation. DOT = overall grand mean complexity rating across Data, People, and Things dimensions from the Dictionary of Occupational Titles (DOT); smaller ratings reflect greater occupational complexity. Values in the top 33% of effects (i.e.,  $\overline{\rho} \ge .24$ ) are presented in grayscale. For full output of second-order meta-analyses of performance across occupations, see Table S15.

#### Second-Order Meta-Analyses of C and Motivations, Values, and Interests Variables

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	$VAR_{2SE}$	VAR <sub>True</sub>	%
Job Application											
Assessment center dimension: Drive											
Dilchert & Ones (2009)	2	4,778	.31	.13ª	.38	.0127	.18	.0076	.0039	.0037	51
Meriac et al. (2008)	7	1,184	.10	.13	.12	.0035		(.09)	(.06)	(.06)	
Career/Lifespan											
Vocational interests											
Realistic											
Mount et al. (2005)	46	12,433	.04	.06 <sup>b</sup>	.05	.0001	.05	.0000	.0001	0001	100
Staggs et al. (2007)	5	2,023	.04	.05 <sup>b</sup>	.05	.0008		(.01)	(.01)	(.00)	
Investigative											
Mount et al. (2005)	46	12,433	.08	.06 <sup>b</sup>	.09	.0001	.10	.0003	.0001	.0002	24
Staggs et al. (2007)	5	2,023	.15	.05 <sup>b</sup>	.17	.0006		(.02)	(.01)	(.02)	
Artistic											
Mount et al. (2005)	46	12,433	05	.06 <sup>b</sup>	06	.0001	06	.0000	.0001	0001	100
Staggs et al. (2007)	5	2,023	04	.05 <sup>b</sup>	05	.0008		(.00)	(.01)	(.00)	
Social											
Mount et al. (2005)	46	12,433	.06	.06 <sup>b</sup>	.07	.0001	.09	.0017	.0001	.0016	5
Staggs et al. (2007)	5	2,023	.21	.05 <sup>b</sup>	.24	.0007		(.05)	(.01)	(.05)	
Enterprising											
Mount et al. (2005)	46	12,433	.07	.06 <sup>b</sup>	.08	.0001	.08	.0001	.0001	.0000	100
Staggs et al. (2007)	5	2,023	.04	.05 <sup>b</sup>	.05	.0008		(.01)	(.01)	(.00)	
Conventional											
Mount et al. (2005)	46	12,433	.17	.06 <sup>b</sup>	.20	.0001	.20	.0000	.0001	.0001	73
Staggs et al. (2007)	5	2,023	.21	.05 <sup>b</sup>	.22	.0005		(.01)	(.01)	(.01)	

*Note.* k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $VAR_2 =$  second-order sampling error variance associated with each first-order metaanalytic correlation,  $\overline{\rho}_M =$  second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M} =$  the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE} =$  expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True} =$  estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> To reduce biasing effects associated with the smaller k meta-analysis of Dilchert and Ones (2009), the  $SD_r$  from the meta-analysis with the largest k (i.e., Meriac et al., 2008) was imputed prior to second-order cumulation.

<sup>b</sup> SD<sub>r</sub> was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

# Second-Order Meta-Analyses of C and Interpersonal Variables

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	VAR <sub>2M</sub>	VAR <sub>2SE</sub>	VARTrue	%
Job Application											
Employment interview: Behavioral/High											
structure											
Roth et al. (2005)	7	1,506	.12	.03	.16	.0002	.15	.0002	.0002	.0000	100
Salgado & Moscoso (2002)	13	1,497	.08	.10	.10	.0023		(.01)	(.01)	(.00)	
Negotiation performance											
Sharma et al. (2013): Lab	4	253	.02	.15	.02	.0056	.05	.0004	.0069	0065	100
Sharma et al. (2013): Field	7	647	.06	.24	.08	.0146		(.02)	(.08)	(.00)	
Assessment center dimension											
Communication											
Dilchert & Ones (2009)	2	4,776	05	.12ª	06	.0104	.07	.0037	.0038	0001	100
Meriac et al. (2008)	6	819	.09	.12	.11	.0036		(.06)	(.06)	(.00)	
Consideration of others											
Dilchert & Ones (2009)	2	4,777	.07	.08 <sup>a</sup>	.09	.0053	.11	.0001	.0014	0014	100
Meriac et al. (2008)	7	1,046	.09	.08	.11	.0014		(.01)	(.04)	(.00)	
Influencing others											
Dilchert & Ones (2009)	2	4,777	.10	.15ª	.12	.0162	.11	.0000	.0056	0056	100
Meriac et al. (2008)	6	994	.09	.15	.11	.0056		(.00)	(.08)	(.00)	
On the Job											
"Getting along" performance											
Hogan & Holland (2003)	26	2,949	.14	.11	.19	.0011	.21	.0003	.0006	0003	100
Hough (1992)	14	787	.18 <sup>b</sup>	.13°	.25	.0029		(.02)	(.03)	(.00)	
Career/Lifespan											
Transformational leadership											
Overall											
Bono & Judge (2002)	18	3,516	.10	.12	.14	.0016	.18	.0023	.0012	.0011	52
Deinert et al. (2015) <sup>d</sup>	17	2,421	.21	.20	.30	.0048		(.05)	(.03)	(.03)	

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	$VAR_{2SE}$	VAR <sub>True</sub>	%
Charisma											
Banks et al. $(2017)^d$	8	1,607	.10	.09	.14	.0020	.10	.0006	.0010	0004	100
Bono & Judge (2002)	8	1,605	.05	.09	.07	.0020		(.02)	(.03)	(.00)	
Individualized consideration											
Bono & Judge (2002)	8	1,828	.10	.19	.14	.0080	.16	.0079	.0028	.0051	35
Deinert et al. $(2015)^d$	4	462	.00	.11	.00	.0030		(.09)	(.05)	(.07)	
DeRue et al. (2011)	4	635	.21	.09	.29	.0039					
Intellectual stimulation											
Bono & Judge (2002)	8	1,828	.02	.09	.03	.0023	.02	.0037	.0009	.0028	24
Deinert et al. $(2015)^d$	5	584	02	.05	03	.0011		(.06)	(.03)	(.05)	
DeRue et al. (2011)	4	635	.16	.09	.23	.0042					

*Note.* k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $VAR_2 =$  second-order sampling error variance associated with each first-order metaanalytic correlation,  $\overline{\rho}_M =$  second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M} =$  the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE} =$  expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True} =$  estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of Dilchert and Ones (2009), the  $SD_r$  from the meta-analysis with the largest k (i.e., Meriac et al., 2008) was imputed prior to second-order cumulation.

<sup>b</sup> Mean sample-size weighted observed correlation is a composite correlation. For details on composite formation, see the Supplemental Methods section.

<sup>c</sup> SD<sub>r</sub> was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

<sup>d</sup> Data from two studies (i.e., Judge & Bono, 2000; Monroe, 1997) was included in multiple meta-analyses. Because both Dienert et al. (2015) and Banks et al. (2017) provided full data, overlapping studies were removed and first-order meta-analyses were rerun prior to second-order cumulation.

### Second-Order Meta-Analyses of C and Attitudes and Well-Being Variables

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	VAR <sub>2SE</sub>	VAR <sub>True</sub>	%
Job Application											
Assessment center dimension											
Stress tolerance											
Dilchert & Ones (2009)	2	4,776	.16	.12ª	.20	.0113	.17	.0004	.0059	0055	100
Meriac et al. (2008)	3	310	.12	.12	.15	.0075		(.02)	(.08)	(.00)	
On the Job											
Job satisfaction											
Judge et al. (2002b)	79	21,719	.20	.18	.25	.0006	.23	.0001	.0004	0003	100
Seltzer et al. (2017)	23	2,336	.18	.10	.22	.0006		(.01)	(.02)	(.00)	
Turnover intentions											
Harari et al. (2018)	7	850	.01	.14	.01	.0028	13	.0021	.0008	.0013	37
Zimmerman (2008)	13	4,315	12	.08	15	.0008		(.05)	(.03)	(.04)	
Burnout											
Emotional exhaustion											
Swider & Zimmerman (2010)	36	8,924	16	.13	19	.0007	17	.0004	.0005	0002	100
You et al. (2015)	19	6,834	12	.11	14	.0009		(.02)	(.02)	(.00)	
Depersonalization											
Swider & Zimmerman (2010)	34	7,485	19	.15	25	.0011	26	.0001	.0008	0007	100
You et al. (2015)	19	6,834	21	.15	27	.0020		(.01)	(.03)	(.00)	
Personal accomplishment											
Swider & Zimmerman (2010)	32	5,690	.22	.17	.28	.0015	.35	.0020	.0008	.0012	41
You et al. (2015)	19	6,834	.31	.12	.40	.0013		(.04)	(.03)	(.03)	
Career/Lifespan											
Life satisfaction											
Seltzer et al. (2017)	21	1,618	.14	.12	.17	.0010	.24	.0014	.0004	.0010	30
Steel et al. (2008)	25	6,685	.22	.09	.27	.0005		(.04)	(.02)	(.03)	

*Note.* k = number of independent samples, N = total sample size,  $\overline{r}$  = mean sample-size weighted observed correlation,  $SD_r$  = mean observed standard deviation,  $\overline{\rho}$  = estimated population correlation (bold) corrected for unreliability,  $VAR_2$  = second-order sampling error variance associated with each first-order meta-

analytic correlation,  $\overline{\rho}_M$  = second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M}$  = the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE}$  = expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True}$  = estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of Dilchert and Ones (2009), the  $SD_r$  from the meta-analysis with the largest k (i.e., Meriac et al., 2008) was imputed prior to second-order cumulation.

#### Second-Order Meta-Analyses of C and Counterproductivity Variables

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	VAR <sub>2SE</sub>	VAR <sub>True</sub>	%
On the Job											
Counterproductive work behavior: Overall											
Carpenter & Berry (2017)	11	2,755	20	.18	26	.0050	22	.0065	.0034	.0031	53
Darr (2011)	4	1,427	19	.09	24	.0032		(.08)	(.06)	(.06)	
van Aarde et al. (2017)	2	168	.12	.18ª	.15	.0253					
Career/Lifespan											
Antisocial behavior											
Jones et al. (2011)	30	10,308	23	.05	28	.0001	29	.0001	.0001	.0000	99
Miller & Lynam (2001)	14	4,584	25	.04	31	.0002		(.01)	(.01)	(.00)	

*Note.* k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $VAR_2 =$  second-order sampling error variance associated with each first-order metaanalytic correlation,  $\overline{\rho}_M =$  second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M} =$  the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE} =$  expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True} =$  estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of van Aarde et al. (2017), the  $SD_r$  from the meta-analysis with the largest k (i.e., Carpenter & Berry, 2017) was imputed prior to second-order cumulation.

# Second-Order Meta-Analyses of C and Performance Variables

Variable	k	N	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	VAR <sub>2SE</sub>	VAR <sub>True</sub>	%
Education											
Academic performance: Postsecondary											
McAbee & Oswald (2013)	57	26,382	.22	.05	.25	.0001	.24	.0009	.0001	.0007	17
Salgado & Táuriz (2014)	25	6,314	.12	.10	.14	.0005		(.03)	(.01)	(.03)	
Stajkovic et al. (2018)	5	875	.23	.08	.26	.0016					
van Aarde et al. (2017)	4	1,464	.18	.08	.20	.0020					
Training performance											
Barrick & Mount (1991)	17	3,585	.13	.11	.16	.0011	.16	.0006	.0008	0002	100
Darr (2011)	12	2,744	.12	.06	.15	.0005		(.02)	(.03)	(.00)	
Hurtz & Donovan (2000)	3	741	.02	.12	.03	.0108					
Salgado (1997)	3	324	.15	.04	.09	.0002					
Salgado & Táuriz (2014)	10	2,510	.10	.10	.13	.0017					
van Aarde et al. (2017)	2	511	.16	$.12^{\rm f}$	.20	.0113					
Training success											
Blume et al. (2010)	5	433	.23	.12	.29	.0046	.25	.0002	.0007	0005	100
Hough (1992)	22	2,935	.19ª	.09 <sup>b</sup>	.24	.0006		(.01)	(.03)	(.00)	
Job Application											
Assessment center dimension											
Organizing and planning											
Dilchert & Ones (2009)	2	4,778	.24	.08 <sup>g</sup>	.29	.0064	.11	.0062	.0014	.0048	23
Meriac et al. (2008)	7	1,416	.05	.08	.06	.0013		(.08)	(.04)	(.07)	
Problem solving											
Dilchert & Ones (2009)	2	4,778	05	.10 <sup>g</sup>	06	.0072	.10	.0061	.0025	.0036	41
Meriac et al. (2008)	6	819	.13	.10	.15	.0022		(.08)	(.05)	(.06)	
On the Job											
Occupational performance											
Barrick & Mount (1991)	123	19,721	.13	.10	.19	.0002	.18	.0006	.0002	.0005	32
Hurtz & Donovan (2000)	45	8,083	.14	.13	.20	.0008		(.03)	(.02)	(.02)	

Variable	k	N	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	VAR <sub>2SE</sub>	VAR <sub>True</sub>	%
Salgado (1997) <sup>c</sup>	24	3,295	.10	.11	.14	.0010					
Salgado & Táuriz (2014)	93	19,525	.14	.12	.20	.0003					
van Aarde et al. (2017)	11	2,313	.04	.08	.06	.0013					
Overall job performance											
Darr (2011)	6	1,774	.23	.06	.36	.0015	.27	.0019	.0002	.0017	10
Hogan & Holland (2003): "Getting along	13	5 242	14	12	22	0010		(04)	(01)	(04)	
and ahead" performance	43	3,242	.14	.15	•22	.0010		(.04)	(.01)	(.04)	
Judge et al. (2013)	74	41,939	.21	.08	.33	.0002					
Salgado & Táuriz (2014) <sup>d</sup>	56	12,147	.11	.09	.17	.0003					
Schmidt & Oh (2013):											
Chinese	3	353	.17	.15	.27	.0189					
Korean	14	3,447	.13	.07	.20	.0008					
Singaporean	3	1,723	.14	.04	.22	.0013					
Taiwanese	3	475	.26	.12	.41	.0119					
Shaffer & Postlethwaite (2012): Workplace	27	6 177	10	04	20	0001					
measures <sup>e</sup>	57	0,177	.19	.04	.30	.0001					
van Aarde et al. (2017)	9	1,558	.02	.08	.03	.0016					
Technical performance											
Hogan & Holland (2003): "Getting ahead"	12	5.017	12	14	15	0007	23	0006	0002	0004	3/
performance	42	3,017	.12	.14	.13	.0007	.43	.0000	.0002	.0004	54
Judge et al. (2013)	102	47,729	.19	.10	.24	.0002		(.03)	(.01)	(.02)	
van Aarde et al. (2017)	8	1,254	.18	.15	.23	.0046					
Contextual performance											
Judge et al. (2013)	39	24,034	.25	.09	.34	.0004	.33	.0012	.0004	.0008	36
van Aarde et al. (2017)	2	248	.09	.09 <sup>h</sup>	.12	.0081		(.03)	(.02)	(.03)	
Adaptive performance											
Huang et al. (2014)	71	7,535	.07	.13	.09	.0004	.10	.0004	.0004	.0000	97
Huang et al. (2014): Appendix A	8	2,414	.13	.11	.17	.0026		(.02)	(.02)	(.00)	
Creativity											
Hough (1992)	4	192	.04 <sup>a</sup>	.15 <sup>b</sup>	.06	.0127	.08	.0000	.0001	0000	100
Puryear et al. (2017)	52	16,496	.06	.06	.08	.0001		(.00)	(.01)	(.00)	

Variable	k	Ν	$\overline{r}$	$SD_r$	ρ	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	$VAR_{2SE}$	VAR <sub>True</sub>	%
Career/Lifespan											
Personnel data											
Barrick & Mount (1991)	32	6,175	.11	.11	.16	.0008	.14	.0007	.0006	.0001	88
Salgado (1997)	3	730	.05	.06	.07	.0024		(.03)	(.02)	(.01)	
Productivity											
Barrick & Mount (1991)	14	1,639	.10	.09	.12	.0008	.17	.0022	.0006	.0016	28
Salgado & Táuriz (2014)	9	1,074	.18	.06	.22	.0006		(.05)	(.02)	(.04)	
van Aarde et al. (2017)	5	716	.06	.09	.07	.0022					

*Note.* k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $VAR_2 =$  second-order sampling error variance associated with each first-order metaanalytic correlation,  $\overline{\rho}_M =$  second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M} =$  the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE} =$  expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True} =$  estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> Mean sample-size weighted observed correlation is a composite correlation. For details on composite formation, see the Supplemental Methods section. <sup>b</sup> SD<sub>r</sub> was neither reported nor calculable from the source meta-analysis; thus, an estimate of variance due to sampling error is reported instead.

<sup>c</sup> Data from three studies (i.e., Furnham, 1994; Nyfield et al., 1995 Studies 1 and 2) were also included in the meta-analysis of Salgado (1997). However, because Salgado & Táuriz (2014) provided full data, overlapping studies were removed and first-order meta-analyses were rerun, prior to second-order cumulation.

<sup>d</sup> Data from six studies (i.e., Adkins & Naumann, 2001; Furnham & Stringfield, 1993 Studies 1 and 2; Sackett et al., 1998; and Slocum & Hand, 1971 Studies 1 and 2) were also included in the meta-analysis of Judge et al. (2013). However, because both studies provided full data, overlapping studies were removed and first-order meta-analyses were rerun, prior to second-order cumulation.

<sup>e</sup> Data from Shaffer and Postlethwaite (2012) are reported under scale type moderator, "Workplace" (p. 458-9, final rows).

<sup>f</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of van Aarde et al. (2017), the  $SD_r$  from the meta-analysis with the largest k (i.e., Hurtz & Donovan, 2000) was imputed prior to second-order cumulation.

<sup>g</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of Dilchert and Ones (2009), the  $SD_r$  from the meta-analysis with the largest k (i.e., Meriac et al., 2008) was imputed to prior to second-order cumulation.

<sup>h</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of van Aarde et al. (2017), the  $SD_r$  from the meta-analysis with the largest k (i.e., Judge et al., 2013) was imputed to prior to second-order cumulation.

# Second-Order Meta-Analyses of C and Occupational Performance across Occupations

Variable	k	Ν	$\overline{r}$	$SD_r$	$\overline{\rho}$	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	$VAR_{2SE}$	VAR <sub>True</sub>	%
Low Complexity											
Skilled/Semi-Skilled											
Barrick & Mount (1991)	25	4,588	.12	.09	.17	.0007	.21	.0099	.0010	.0089	10
Hurtz & Donovan (2000)	14	3,481	.10	.12	.14	.0020		(.10)	(.03)	(.09)	
Salgado (1997): European	8	1,264	.09	.09	.13	.0021					
Salgado et al. (2015):											
Skilled - Quasi-ipsative	8	2,338	.43	.12ª	.62	.0010					
Clerical - Quasi-ipsative	3	357	.16	.09	.23	.0056					
Moderate Complexity											
Sales											
Barrick & Mount (1991)	21	2,263	.09	.10	.13	.0010	.23	.0033	.0007	.0026	20
Hurtz & Donovan (2000)	10	1,369	.18	.11	.26	.0025		(.06)	(.03)	(.05)	
Salgado (1997): European	6	576	.08	.10 <sup>b</sup>	.12	.0035					
Salgado et al. (2015): Ipsative	5	665	.18	.06	.26	.0015					
Salgado et al. (2015): Quasi-ipsative	4	472	.22	.04	.32	.0008					
Military											
Darr (2011)	6	1,774	.23	.06	.33	.0012	.25	.0029	.0008	.0021	27
Hough (1992)	3	895	.12	.06	.18	.0027		(.05)	(.03)	(.05)	
Salgado et al. (2015): Quasi-ipsative	10	3,007	.12	.10	.17	.0020					
Health Care											
Hough (1992)	15	758	.24	.14	.35	.0028	.33	.0002	.0018	0016	100
Salgado et al. (2015): Quasi-ipsative	3	773	.21	.09	.30	.0055		(.01)	(.04)	(.00)	
Customer Service											
Hurtz & Donovan (2000)	12	1,849	.17	.11	.25	.0022	.23	.0021	.0015	.0006	71
Salgado et al. (2015): Ipsative	3	551	.12	.06	.17	.0024		(.05)	(.04)	(.02)	
Salgado et al. (2015): Quasi-ipsative	2	398	.29	.11 <sup>c</sup>	.42	.0037					

Variable	k	Ν	$\overline{r}$	$SD_r$	$\overline{\rho}$	$VAR_2$	$\overline{\rho}_M$	$VAR_{2M}$	$VAR_{2SE}$	VAR <sub>True</sub>	%
Police											
Barrick & Mount (1991)	19	2,045	.13	.16	.19	.0029	.20	.0005	.0012	0007	100
Salgado (1997): European	3	324	.15	.04	.22	.0011		(.02)	(.03)	(.00)	
Salgado et al. (2015): Ipsative	3	700	.07	.12	.10	.0098					
High Complexity											
Managerial											
Barrick & Mount (1991)	52	10,058	.13	.10	.19	.0004	.15	.0006	.0007	0001	100
Hurtz & Donovan (2000)	4	495	.11	.21	.16	.0233		(.02)	(.03)	(.00)	
Salgado (1997): European	6	987	.06	.09	.09	.0030					
Salgado et al. (2015):											
Managerial - Ipsative	21	4,401	.08	.10	.12	.0011					
Managerial - Normative	6	2,560	.09	.07	.13	.0017					
Managerial - Quasi-ipsative	9	1,132	.10	.09	.14	.0018					
Supervisory - Ipsative	4	423	.08	.09	.12	.0046					
Supervisory - Quasi-ipsative	3	171	.09	.10	.13	.0070					
Professional											
Barrick & Mount (1991)	6	767	.11	.09	.16	.0029	.13	.0003	.0002	.0001	76
Gnambs (2015): Computer programing	26	1,224	.08	.04	.12	.0001		(.02)	(.02)	(.01)	
Klassen & Tze (2014): Teachers	6	1,033	.09	.10	.13	.0035					
Mol et al. (2005): Expatriates	8	621	.17	.11	.25	.0033					
Zhao et al. (2010): Entrepreneurs	24	3,193	.15	.24	.22	.0052					

*Note.* k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $VAR_2 =$  second-order sampling error variance associated with each first-order metaanalytic correlation,  $\overline{\rho}_M =$  second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{2M} =$  the mean observed variance and standard deviation (in parentheses) across first-order mean estimated population correlations, which includes corrections for first-order sampling error and measurement error,  $VAR_{2SE} =$  expected (mean) second-order sampling error variance and standard error (in parentheses),  $VAR_{True} =$  estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error.

<sup>a</sup> To reduce biasing effects of the outlying meta-analytic effect of Salgado et al. (2015; Quasi-ipsative), the  $SD_r$  from the meta-analysis with the largest k (i.e., Hurtz & Donovan, 2000) was imputed prior to second-order cumulation.

<sup>b</sup> To reduce biasing effects of the outlying meta-analytic variance of Salgado (1997), the  $SD_r$  from the meta-analysis with the largest variance (i.e., Barrick & Mount, 1991) was imputed prior to second-order cumulation.

<sup>c</sup> To reduce biasing effects of first-order sampling error associated with the smaller k meta-analysis of Salgado et al. (2015; Quasi-ipsative), the  $SD_r$  from the meta-analysis with the largest k (i.e., Hurtz & Donovan, 2000) was imputed prior to second-order cumulation.

# Description of Evaluations of Publication Bias and Sensitivity Analyses for First-Order

Descriptive statistics         (1)       Reference number for meta-analysis         (2)       Year of publication for meta-analysis         (3)       Total number of sources contributing to meta-analysis, whether pertaining to C or not         (4)       Total number of studies (i.e., k) pertaining to C in meta-analysis         (5)       Total number of occupational variables reporting meta-analytic relations to C, whether included in review or not         Post hoc and preventative approaches         (6)       Publication bias analyses reported (if blank, no analysis reported): PB1 = Failsafe N; PB2 = Cumulative meta-analysis; PB3 = Funnel plot or similar analysis; PB4 = Egger's test of intercept or similar; PB5 = Begg and Mazumdar rank correlation; PB6 = Correlation with publication status; PB7 = Forest plot         (7)       Sensitivity analyses reported (if blank, no analysis reported): SA1 = Outlier analyses; SA2 = Duval and Tweedie's trim-and-fill or similar; SA3 = Comparison of published versus unpublished effects         (8)       Conclusion about publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger         (10)       Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)         (11)       Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)         (12)       Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)         (13)       Meta-analysis includes C as the	Column	Description
<ol> <li>Reference number for meta-analysis</li> <li>Year of publication for meta-analysis</li> <li>Total number of sources contributing to meta-analysis, whether pertaining to C or not</li> <li>Total number of studies (i.e., k) pertaining to C in meta-analysis</li> <li>Total number of occupational variables reporting meta-analytic relations to C, whether included in review or not</li> <li>Post hoc and preventative approaches</li> <li>Publication bias analyses reported (if blank, no analysis reported): PB1 = Failsafe N; PB2 = Cumulative meta-analysis; PB3 = Funnel plot or similar analysis; PB4 = Egger's test of intercept or similar; PB5 = Begg and Mazumdar rank correlation; PB6 = Correlation with publication status; PB7 = Forest plot</li> <li>Sensitivity analyses reported (if blank, no analysis reported): SA1 = Outlier analyses; SA2 = Duval and Tweedie's trim-and-fill or similar; SA3 = Comparison of published versus unpublished effects</li> <li>Conclusion about publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>Magnitude of publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)</li> <li>Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>Personality constructs other than the Big Five traits that are included in meta- analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PRO = Proactive aresonality: SE = Self-estemu.WISC – Miscallaneous construct are model</li> </ol>	Descript	tive statistics
<ul> <li>(2) Year of publication for meta-analysis Total number of sources contributing to meta-analysis, whether pertaining to C or not</li> <li>(3) Total number of studies (i.e., k) pertaining to C in meta-analysis Total number of occupational variables reporting meta-analytic relations to C, whether included in review or not</li> <li>Post hoc and preventative approaches</li> <li>(6) Publication bias analyses reported (if blank, no analysis reported): PB1 = Failsafe N; PB2 = Cumulative meta-analysis; PB3 = Funnel plot or similar analysis; PB4 = Egger's test of intercept or similar; PB5 = Begg and Mazumdar rank correlation; PB6 = Correlation with publication status; PB7 = Forest plot</li> <li>(7) Sensitivity analyses reported (if blank, no analysis reported): SA1 = Outlier analyses; SA2 = Duval and Tweedie's trim-and-fill or similar; SA3 = Comparison of published versus unpublished effects</li> <li>(8) Conclusion about publication bias (i.e., none, negligible, small; NM = Not mentioned)</li> <li>(9) Magnitude of publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>(10) Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)</li> <li>(11) Percentage of unpublished studies cumulated in meta-analysis (out of 1.0)</li> <li>Centrality considerations</li> <li>(12) Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta- analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PRO = Proactive aresonality: SE = Self-estemutice; MISC = Miscallaneous construct are model</li> </ul>	(1)	Reference number for meta-analysis
<ul> <li>Total number of sources contributing to meta-analysis, whether pertaining to C or not</li> <li>(4) Total number of studies (i.e., k) pertaining to C in meta-analysis</li> <li>Total number of occupational variables reporting meta-analytic relations to C, whether included in review or not</li> <li><b>Post hoc and preventative approaches</b></li> <li>(6) Publication bias analyses reported (if blank, no analysis reported): PB1 = Failsafe N; PB2 = Cumulative meta-analysis; PB3 = Funnel plot or similar analysis; PB4 = Egger's test of intercept or similar; PB5 = Begg and Mazumdar rank correlation; PB6 = Correlation with publication status; PB7 = Forest plot</li> <li>(7) Sensitivity analyses reported (if blank, no analysis reported): SA1 = Outlier analyses; SA2 = Duval and Tweedie's trim-and-fill or similar; SA3 = Comparison of published versus unpublished effects</li> <li>(8) Conclusion about publication bias (i.e., none, negligible, small; NM = Not mentioned)</li> <li>(9) Magnitude of publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>(10) Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)</li> <li>(11) Percentage of unpublished studies cumulated in meta-analysis (out of 1.0)</li> <li><b>Centrality constructs</b> are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(12) Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta-analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PRO = Practive are model</li> </ul>	(2)	Year of publication for meta-analysis
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<ul> <li>(5) Total number of occupational variables reporting meta-analytic relations to C, whether included in review or not</li> <li>Post hoc and preventative approaches <ul> <li>(6) Publication bias analyses reported (if blank, no analysis reported):</li> <li>PB1 = Failsafe N; PB2 = Cumulative meta-analysis; PB3 = Funnel plot or similar analysis; PB4 = Egger's test of intercept or similar; PB5 = Begg and Mazumdar rank correlation; PB6 = Correlation with publication status; PB7 = Forest plot</li> <li>(7) Sensitivity analyses reported (if blank, no analysis reported):</li> <li>SA1 = Outlier analyses; SA2 = Duval and Tweedie's trim-and-fill or similar; SA3 = Comparison of published versus unpublished effects</li> <li>(8) Conclusion about publication bias (i.e., none, negligible, small; NM = Not mentioned)</li> <li>(9) Magnitude of publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>(10) Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)</li> <li>(11) Percentage of unpublished studies cumulated in meta-analysis (out of 1.0)</li> </ul> </li> <li>Centrality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta-analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO = Proactive personality: SE = Self-esteram; MISC = Miscellaneous construct or model</li> </ul>	(4)	Total number of studies (i.e., k) pertaining to C in meta-analysis
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<ul> <li>(9) Magnitude of publication bias in correlational points AFA = Analyses available from author; UL = Unpublished effects larger</li> <li>(10) Publication bias and/or approaches to addressing it are discussed (Y = 1, N = 0)</li> <li>(11) Percentage of unpublished studies cumulated in meta-analysis (out of 1.0)</li> <li><b>Centrality considerations</b></li> <li>(12) Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta-analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO = Proactive personality: SE = Self-exteem: MISC = Miscellaneous construct or model</li> </ul>	(8)	Conclusion about publication bias (i.e., none, negligible, small; NM = Not
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<ul> <li>(12) Personality constructs are of central consideration to the meta-analysis (Y = 1, N = 0)</li> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta-analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO =</li> <li>Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model</li> </ul>	Centrali	ty considerations
<ul> <li>(13) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta- analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO = Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model</li> </ul>	(12)	Personality constructs are of central consideration to the meta-analysis ( $Y = I$ , $N = 0$ )
<ul> <li>(15) Meta-analysis includes C as the only personality construct (Y = 1, N = 0)</li> <li>(14) Meta-analysis includes all Big Five traits (Y = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta- analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO =</li> <li>Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model</li> </ul>	(12)	U) Moto analysis includes C as the only nonconstitute construct $(\mathbf{X} - 1, \mathbf{N} - 0)$
<ul> <li>(14) Meta-analysis includes an Big Five traits (1 = 1, N = 0)</li> <li>(15) Personality constructs other than the Big Five traits that are included in meta- analysis: FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO =</li> <li>Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model</li> </ul>	(13)	Meta-analysis includes C as the only personanty construct $(1 = 1, N = 0)$ Meta-analysis includes all Dig Eige traits $(N = 1, N = 0)$
<ul> <li>(15) Personanty constructs other than the Big Five traits that are included in meta- analysis:</li> <li>FAC = Big Five facet(s); CSE = Core self-evaluations; GSE = General self-efficacy; LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO =</li> <li>Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model</li> </ul>	(14)	Neta-analysis includes all Dig Five traits ( $I = I$ , $N = 0$ ) Demonstrates other than the Dig Five traits that are included in meta
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LOC = Locus of control; NA = Negative affect; PA = Positive affect; PRO = Proactive personality: SE = Self-esteem: MISC = Miscellaneous construct or model		analysis. EAC = Pig  Five facet(s); CSE = Core self evaluations; CSE = Coneral self efficiency;
Proactive personality: SE - Self-esteem: MISC - Miscellaneous construct or model		$I \cap C = I \text{ ocus of control: NA} = \text{Negative affect: DA} = \text{Desitive affect: DD} = $
		Proactive personality: SE - Self-esteem: MISC - Miscellaneous construct or model

# Meta-Analyses of C and Occupational Variables

*Note.* For all columns (except for column 15), NR = Not reported; and NA = Not applicable.

Evaluations of Publication Bias and Sensitivity Analyses for First-Order Meta-Analyses of C and Occupational Variables

D	escripti	ve sta	tistics		Post	t hoc and p	reventative	approa	ches		Centrality considerations				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
1	2017	62	36	1	PB6	SA1, SA2	None	.00	1	.00	1	0	1		
2	2012	68	35	2			NM		0	.35	1	0	1	LOC, NA, PA	
3	2017	76	33	6	PB2	SA2	None	NR	1	.30	1	0	1		
4	1991	117	573	15			NM		0	.31	1	0	1		
5	2012	40	13	1			NM		0	.38	0	0	1		
6	2007	30	27	3			NM		1	.53	0	0	1		
7	2015	69	30	3			NM		0	.14	1	0	1		
8	2012	21	10	2			NM		0	.14	0	0	1		
9	2006	25	27	1			NM		1	.18	1	0	1		
10	2010	89	5	1	PB1	SA1, SA3	NM		1	.35	0	0	1	LOC	
11	2004	26	61	7			NM		0	.46	1	0	1		
12	2017	45	32	4		SA1	NM		0	.31	0	0	1		
13	2017	166	24	3			NM		1	.16	0	0	1		
14	2011	77	166	5		SA3	None	AFA	1	.43	1	0	1		
15	2015	50	84	4		SA2, SA3	None	UL	1	.32	1	0	1	NA, PA	
16	2016	89	5	1		SA3	NM		1	.24	0	0	1		
17	2001	71	22	2		SA1	NM		0	.25	1	0	0	FAC	
18	2008	228	9	2			NM		0	.38	0	0	0	FAC, LOC	
19	2012	237	24	5			NM		1	NR	0	0	1	GSE, LOC, GSE, NA, PA, SE, MISC	
20	2010	68	6	1			NM		0	.24	0	0	1	CSE	
21	2011	18	25	4			NM		0	.94	1	0	1		
22	2015	58	44	6			NM		1	.09	1	0	1		
23	2011	79	57	6			NM		0	.25	0	0	1		

D	escripti	ive sta	ntistics	5	Post hoc and preventative approaches							Centrality considerations			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
24	2009	2	18	9			NA	NA	NA	1.00	1	0	1		
25	2012	247	9	1			NM		1	.23	0	0	1	LOC	
26	2015	73	215	4		SA1, SA3	None	.01	1	.23	1	0	1	MISC	
27	2015	29	16	1		SA1	NM		0	.21	1	0	1	NA, PA	
28	2015	20	26	1	PB3	SA2	Negligible	.02	1	.45	1	0	1		
29	2009	96	15	1		SA1, SA3	None	.02	1	.03	0	0	0	LOC, MISC	
30	2018	43	67	5	PB2, PB4	SA1, SA2	None	NR	1	.35	1	0	1		
31	2015	21	18	1	PB3	SA3	None	UL	1	.14	1	0	1		
32	2004	72	13	2	PB1		NM		1	.17	0	0	0	B5 ES	
33	2015	49	25	5			NM		0	.18	0	0	1		
34	2003	43	222	9			NM		0	1.00	1	0	1	MISC	
35	1992	237	354	14			NM		0	NR	1	0	1	FAC	
36	2017	40	78	4			NM		0	.43	0	0	0	B5 A	
37	2014	77	453	12			NM		0	.94	1	0	1	MISC	
38 <sup>a</sup>	2000	26	182	10	PB2 to PB5, PB7	SA2	Negligible	.03	1	.15	1	0	1		
39	2011	53	65	2		SA1	NM		0	.19	1	0	1	FAC	
40	2015	151	38	2		SA2	None	AFA	1	.17	0	0	1	GSE	
41	2002	78	70	3			NM		0	.18	1	0	1	FAC, LOC, SE	
42	2002	135	79	1			NM		0	.41	1	0	1		
43	2002	69	43	3		SA3	Small	.07	0	.39	1	0	1		
44	2013	264	215	3			NM		0	.00	1	0	1		
45	2014	41	6	1	PB1, PB3, PB4, PB7		None		1	.71	0	0	1	GSE	
46	2012	97	18	2	·	SA3	None	NR	1	.32	1	0	1		
47	2014	NR	13	1			NM		0	NR	1	0	1		
48	2017	112	12	1		SA1, SA3	NM		1	.10	0	0	1	NA, PA	

Descriptive statistics					Post	hoc and p	reventative	Centrality considerations						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
49	2015	23	18	1	PB4, PB7		None		1	.09	1	0	1	
50	2013	51	57	5		SA1	NM		0	.00	1	0	1	
						SA1,								
51	2007	86	53	4		SA2,	None		1	.28	0	0	1	
						SA3								
52	2017	54	11	1		SA1	NM		1	.22	0	0	1	FAC, GSE
53	2008	48	42	13			NM		0	.52	0	0	1	
54	2011	66	23	2			NM		0	.35	1	0	1	CSE, NA, PA
55	2001	43	14	1	PB1		NM		1	.07	1	0	1	MISC
56	2005	30	8	1			NM		0	.40	0	0	1	MISC
57	2005	24	276	6			NM		0	.33	1	0	1	
58	2010	395	94	4			NM		1	.03	0	1	0	B5 C Only
														CSE, B5 ES, B5 EX,
59	2014	309	20	1			NM		1	.01	0	0	0	CSE, PA, PRO,
														MISC
60	2014	191	13	1			NM		1	.02	0	0	1	CSE, LOC, PRO
61	2017	20	4.4	4	PB1 to	SA1,	Care all	06	1	00	1	0	1	
01	2017	32	44	4	PB4, PB7	SA2	Sman	.00	1	.00	1	0	1	
$(\mathbf{c})$	2015	60	757	14		SA1,	None		1	50	1	0	1	
62	2015	00	151	14		SA3	None	АГА	1	.50	1	0	1	
63	2007	141	30	3		SA1	NM		1	.46	0	0	1	
64	2009	80	138	1			NM		0	.21	1	0	1	
65	2017	96	470	8			NM		0	.00	1	0	1	MISC
66	2015	61	116	11			NM		1	.05	0	0	1	
67	2005	3	7	1			NM		0	.00	0	0	1	
68	2018	316	8	1		SA1	NM		0	NR	0	0	1	
(0)	2017	100	25	_		SA2,	N		1	22	0	0	1	CCE
69	2017	108	25	3	PB3	SA3	None		1	.32	0	0	1	U2E
70	2017	00	10	1					1	17	0	0	1	CSE, PRO, SE,
/0	2017	90	12	1			INIM		1	.1/	0	U	1	MISC
71	1997	36	71	8			NM		0	.08	0	0	1	

Descriptive statistics					Post	hoc and p	oreventative		Centrality considerations					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
72	2002	75	31	2			NM		0	.21	0	0	1	
73	2014	93	202	5			NM		1	.15	1	0	1	
74	2015	89	162	9			None	.02	1	.15	1	0	1	
75	2013	24	24	1			NA		1	.04	1	0	1	
76	2017	23	44	2			NA		0	1.00	1	0	1	
77 <sup>b</sup>	2012	90	37	1	PB2 to PB4, PB7	SA2, SA3	Small	.05	1	.36	1	0	1	
78	2013	74	27	6			NM		0	.05	0	0	1	GSE, NA, PA, PRO, MISC
79	2007	5	30	6			NM		0	.60	1	0	1	MISC
80	2018	5	15	3			NM		0	1.00	0	0	1	
81	2007	216	20	1		SA1	None		1	.30	0	0	1	
82	2008	249	90	6		SA1	NM		1	.07	1	0	1	MISC
83	2010	115	102	3			NM		0	.29	1	0	1	
84	2015	85	17	1			NM		0	.00	0	0	1	
85	2017	33	56	10			NM		0	.52	1	0	1	
86	2016	99	18	3	PB6	SA3	None	.00	1	.39	0	0	1	CSE, PRO, MISC
87	2004	41	11	1			NM		0	.05	1	0	1	
88	2015	272	55	5			NM		1	.00	0	0	1	
89	2015	NR	57	3			NM		1	NR	1	0	1	CSE
90	2018	102	117	4		SA1, SA2	NM	NR	1	.40	1	0	1	NA, PA, PRO
91	2010	60	63	4			NM		0	.25	1	0	1	
92	2008	86	34	3			NM		0	.29	1	0	1	
Mean <i>SD</i>	2011 6	90 78	78 125	3.90 3.42					.51	.29 .19	.57	.01	.92	

*Note.* See Table S16 for a description of information in columns and details about abbreviations used. <sup>a</sup> Publication bias and sensitivity analyses reported by Kepes, Banks, and McDaniel (2011). <sup>b</sup> Publication bias and sensitivity analyses reported by Kepes and McDaniel (2013).

# Sensitivity Analyses for Second-Order Meta-Analyses of C and Occupational Variables: Small-k Meta-Analyses

Variable		$k$ $N$ $\overline{r}$ $SD_r$ $\overline{\rho}$				$\overline{\rho}_M$	VAR <sub>True</sub>	%	$\overline{\rho}_M$	VAR <sub>True</sub>	%	$ \overline{\rho} $
v allable		Inp	ut valu	es		0	bserved SI	$D_r$	I	mputed SD	r	diff
Education												
Training performance												
Barrick & Mount (1991)	17	3,585	.13	.11	.16	.17	.0002	73	.16	.0000	100	.01
Darr (2011)	12	2,744	.12	.06	.15		(.01)			(.00)		
Hurtz & Donovan (2000)	3	741	.02	.12	.03							
Salgado (1997)	3	324	.15	.04	.19							
Salgado & Táuriz (2014)	10	2,510	.10	.10	.13							
van Aarde et al. (2017)	2	511	.16	.02 <sup>a</sup>	.20							
Job Application												
Assessment center dimension												
Drive												
Dilchert & Ones (2009)	2	4,778	.31	.05 <sup>a</sup>	.38	.29	.0081	17	.18	.0037	51	.11
Meriac et al. (2008)	7	1,184	.10	.13	.12		(.09)			(.06)		
Communication												
Dilchert & Ones (2009)	2	4,776	05	.00 <sup>a</sup>	06	06	.0000	26	.07	0001	100	.13
Meriac et al. (2008)	6	819	.09	.12	.11		(.00)			(.00)		
Consideration of others												
Dilchert & Ones (2009)	2	4,777	.07	.01 <sup>a</sup>	.09	.09	.0000	100	.11	0014	100	.02
Meriac et al. (2008)	7	1,046	.09	.08	.11		(.00)			(.00)		
Influencing others												
Dilchert & Ones (2009)	2	4,777	.10	.01 <sup>a</sup>	.12	.12	.0000	100	.11	0056	100	.01
Meriac et al. (2008)	6	994	.09	.15	.11		(.00)			(.00)		
Stress tolerance												
Dilchert & Ones (2009)		4,776	.16	.07 <sup>a</sup>	.20	.18	0029	23	.17	0055	100	.01
Meriac et al. (2008)		310	.12	.12	.15		(.00)			(.00)		

Variable		Ν	$\overline{r}$	$SD_r$	ρ	$\overline{\rho}_M$	VAR <sub>True</sub>	%	$\overline{\rho}_M$	VAR <sub>True</sub>	%	$\overline{\rho}$
variable		Inp	ut valu	es		0	bserved SI	$D_r$	Ι	mputed SD	r	diff
Organizing and planning												
Dilchert & Ones (2009)	2	4,778	.24	.03ª	.29	.21	.0074	8	.11	.0048	23	.10
Meriac et al. (2008)	7	1,416	.05	.08	.06		(.09)			(.07)		
Problem solving												
Dilchert & Ones (2009)	2	4,778	05	.02 <sup>a</sup>	06	04	.0027	12	.10	.0036	41	.14
Meriac et al. (2008)	6	819	.13	.10	.15		(.05)			(.06)		
On the Job												
Contextual performance												
Judge et al. (2013)	39	24,034	.25	.09	.34	.23	.0062	3	.33	.0008	36	.10
van Aarde et al. (2017)	2	248	.09	.02 <sup>a</sup>	.12		(.08)			(.03)		
Counterproductive work behavior												
Carpenter & Berry (2017)	11	2,755	20	.18	26	20	.0065	33	22	.0031	53	.02
Darr (2011)	4	1,427	19	.09	24		(.08)			(.06)		
van Aarde et al. (2017)	2	168	.12	.14 <sup>a</sup>	.15							
<b>Occupational Performance</b>												
Customer Service												
Hurtz & Donovan (2000)	12	1,849	.17	.11	.25	.28	.0036	24	.23	.0006	71	.05
Salgado et al. (2015):							(.06)			(.02)		
Ipsative	3	551	.12	.06	.17							
Quasi-ipsative	2	398	.29	.05 <sup>a</sup>	.42							
Mean						.15	.0031 ( 056)	38	.16	.0015 (039)	70	.06

*Note.* Observed  $SD_r$  correlations (bold), imputed  $SD_r$  correlations (bold and italics),  $|\overline{\rho}| diff$  = absolute difference between correlations (italics). k = number of independent samples, N = total sample size,  $\overline{r}$  = mean sample-size weighted observed correlation,  $SD_r$  = mean observed standard deviation,  $\overline{\rho}$  = estimated population correlation (bold) corrected for unreliability,  $\overline{\rho}_M$  = second-order, grand mean population correlation (bold) corrected for unreliability in the predictor and the criterion,  $VAR_{True}$  = estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error. <sup>a</sup> We imputed the  $SD_r$  from the meta-analysis with the largest k to reduce the biasing effects of first-order sampling error associated with smaller k meta-analyses.

### Sensitivity Analyses for Second-Order Meta-Analyses of C and Occupational Variables: Outlier Meta-Analyses

Variable		Ν	$\overline{r}$	$SD_r$	ρ	$\overline{\rho}_M$	VAR <sub>True</sub>	%	$\overline{\rho}_M$	VAR <sub>True</sub>	%	$ \overline{\rho} $
variable		Inp	ut val	ues		C	bserved S	$SD_r$	In	nputed SI	$D_r$	diff
Occupational Performance												
Skilled/Semi-Skilled												
Barrick & Mount (1991)	25	4,588	.12	.09	.17	.24	.0132	6	.21	.0082	10	.03
Hurtz & Donovan (2000)	14	3,481	.10	.12	.14		(.11)			(.09)		
Salgado (1997): European	8	1,264	.09	.09	.13							
Salgado et al. (2015):												
Skilled - Quasi-ipsative	8	2,338	.43	.09 <sup>a</sup>	.62							
Clerical - Quasi-ipsative	3	357	.16	.09	.23							
Skilled/Semi-Skilled (less outlier)												
Barrick & Mount (1991)		4,588	.12	.09	.17	.16	.0000	100				.08
Hurtz & Donovan (2000)	14	3,481	.10	.12	.14		(.00)					
Salgado (1997): European	8	1,264	.09	.09	.13							
Clerical - Quasi-ipsative	3	357	.16	.09	.23							
Sales												
Barrick & Mount (1991)	21	2,263	.09	.10	.13	.15	.0023	9	.23	.0026		.08
Hurtz & Donovan (2000)	10	1,369	.18	.11	.26		(.05)			(.05)		
Salgado (1997): European	6	576	.08	.02 <sup>b</sup>	.12							
Salgado et al. (2015): Ipsative	5	665	.18	.06	.26							
Salgado et al. (2015): Quasi-ipsative	4	472	.22	.04	.32							
Sales (less outlier)												
Barrick & Mount (1991)	21	2,263	.09	.10	.13	.24	.0024	19				.09
Hurtz & Donovan (2000)	10	1,369	.18	.11	.26		(.05)					
Salgado et al. (2015): Ipsative		665	.18	.06	.26							
Salgado et al. (2015): Quasi-ipsative	4	472	.22	.04	.32							

*Note.* Observed *SD<sub>r</sub>* correlations (bold), imputed *SD<sub>r</sub>* correlations (bold and italics),  $|\overline{\rho}| diff$  = absolute difference between correlations (italics). *k* = number of independent samples, *N* = total sample size,  $\overline{r}$  = mean sample-size weighted observed correlation, *SD<sub>r</sub>* = mean observed standard deviation,  $\overline{\rho}$  = estimated population correlation (bold) corrected for unreliability,  $\overline{\rho}_M$  = second-order, grand mean population correlation (bold) corrected for unreliability in the predictor

and the criterion,  $VAR_{True}$  = estimated residual (i.e., true) population variance and standard deviation (in parentheses) across first-order mean population correlation estimates after accounting for variance attributable to expected second-order sampling error and measurement error (negative values set to zero), % = percentage of observed variance across first-order mean population correlation estimates attributable to second-order sampling error and measurement error. <sup>a</sup> We imputed the  $SD_r$  from the meta-analysis with the largest variance to reduce the biasing effects of the outlying first-order meta-analytic effect. <sup>b</sup> We imputed the  $SD_r$  from the meta-analysis with the largest k to reduce the biasing effects of the outlying first-order meta-analytic variance.

# Sensitivity Analyses for Second-Order Meta-Analyses of C and Occupational Variables: Alterative Meta-Analyses

Variable		k N $\overline{r}$ SI		$SD_r$	ρ	$\overline{\rho}_M$	SD <sub>ρ</sub>	80% CR		$\overline{\rho}_M$	$SD_{\rho}$	80% CR		- 12
								LO	HI			LO	HI	$ \rho $
		Inp	ut valu	ies		R	eporte	d resu	lts	Alternative results				aŋ
Education														
Academic performance: Postsecondary														
Richardson et al. (2012) <sup>a</sup>	69	27,875	.19	.11	.22	.24	.03	.20	.27	.20	.03	.16	.23	.04
Vedel (2016) <sup>a</sup>	21	17,717	.26	.10	.30					.22	.06	.14	.29	.02
On the Job														
Burnout														
Emotional exhaustion														
Alarcon et al. (2009) <sup>b</sup>	16	5,926	20	.10	24	17	.00	17	17	19	.03	23	15	.02
Depersonalization														
Alarcon et al. (2009) <sup>b</sup>	22	8,237	16	.09	21	26	.00	26	26	23	.00	23	23	.03
Personal accomplishment														
Alarcon et al. (2009) <sup>b</sup>	16	4,615	.18	.14	.23	.35	.03	.30	.39	.33	.06	.26	.41	.02
Occupational performance														
Hough (1992) <sup>c</sup>	73	12,106	.15	.08	.22	.18	.02	.15	.21	.20	.03	.16	.23	.02
Overall job performance														
Salgado (2003): Direct Big Five	90	19/160	17	13	27	27	04	22	33	26	04	21	31	01
measures <sup>d</sup>	70	17,400	.17	.15	.27	•21	.04	.22	.55	.20	.07	.21	.51	.01
Joseph & Newman (2010) <sup>d</sup>	64	12434	.15	.10	.24					.25	.04	.20	.30	.02
Shaffer & Postlethwaite (2012):	76	13,379	13	.08	.20					.24	.04	19	29	.03
General measures <sup>d</sup>	10	10,077		.00							.01	.17	>	
Career/Lifespan														
Antisocial behavior			_			_		_		_				
Vize et al. (2018) <sup>e</sup>	20	6,499	21	.11	26	29	.00	29	29	30	.00	31	29	.01
	k	Ν	$\overline{r}$	$SD_r$	ρ	$\overline{\rho}_M$	$SD_{\rho}$	80%	6 CR	$\overline{\rho}_M$	$SD_{\rho}$	80%	6 CR	
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Variable								LO	HI			LO	HI	-  ρ
		Inp	ut valı	ıes		R	eporte	d resu	lts	Alt	ternati	ve res	ults	- מוןן
Occupational Performance														
Managerial														
Hough (1992) <sup>c</sup>	14	1,829	.09	.09	.13	.16	.00	.16	.16	.13	.00	.13	.13	.03
Mean						.24	.02			.23	.03			.02
Note. Reported meta-analysis correlations (bold	l), alterna	tive meta-	analysis	s correla	ations (b	old and it	alics),	$\overline{o}   diff =$	absolute	differen	ce betw	een cor	relation	IS

(italics). k = number of independent samples, N = total sample size,  $\overline{r} =$  mean sample-size weighted observed correlation,  $SD_r =$  mean observed standard deviation,  $\overline{\rho} =$  estimated population correlation (bold) corrected for unreliability,  $SD_{\rho} =$  standard deviation of population correlation, 80% CR = 80% credibility interval around population correlation.

<sup>a</sup> Alternative to McAbee and Oswald (2013). <sup>b</sup> Alternative to Swider and Zimmerman (2010). <sup>c</sup> Alternative to Barrick and Mount (1991). <sup>d</sup> Alternative to Judge et al. (2013). <sup>e</sup> Alternative to Jones et al. (2011).

## Appendix

Variable	Source(s)	r	k	$\overline{r}_{yy}$
Motivations, Values, and Interests				
Education				
Goal orientation				
Learning	Payne et al. (2007)	1	173	.81
Performance avoidance	Payne et al. (2007)	1	59	.78
Performance prove	Payne et al. (2007)	1	166	.79
Academic self-efficacy	Judge & Ilies (2002)	1	NR	.76
Academic procrastination	Steel (2007)	1	NR	.90
Job Application				
Job search self-regulation	van Hooft et al. (2015)	1	NR	.87
Applicant reactions: Test	Haustmasht at al. $(2004)$	1	ND	02
motivation	Hausknecht et al. (2004)	1	INK	.03
Assessment center dimension:	Marian at al. (2008)	1	ND	86
Drive	Meriac et al. (2008)	1	INK	.00
On the Job				
Regulatory focus				
Prevention	Lanaj et al. (2012)	1	NR	.86
Promotion	Lanaj et al. (2012)	1	NR	.82
Psychological needs				
Autonomy	van den Broeck et al. (2016)	1	NR	.74
Competence	van den Broeck et al. (2016)	1	NR	.83
Relatedness	van den Broeck et al. (2016)	1	NR	.79
Performance motivation				
Expectancy	Judge & Ilies (2002)	1	NR	.65
Goal-setting	Judge & Ilies (2002)	1	NR	.85
Self-efficacy	Judge & Ilies (2002)	1	NR	.76
Demonstrating effort	Wilmot et al. (2014)	3	NR	.56
Employee engagement	Christian et al. (2011)	1	90	.88
Career/Lifespan				
Personal values				
Self-enhancement	Parks-Leduc et al. (2015)	1	NR	.73
Achievement	Parks-Leduc et al. (2015)	1	NR	.76
Hedonism	Parks-Leduc et al. (2015)	1	NR	.72
Power	Parks-Leduc et al. (2015)	1	NR	.72
Self-transcendence	Parks-Leduc et al. (2015)	1	NR	.75
Benevolence	Parks-Leduc et al. (2015)	1	NR	.72
Universalism	Parks-Leduc et al. (2015)	1	NR	.78
Openness to change	Parks-Leduc et al. (2015)	1	NR	.71
Self-direction	Parks-Leduc et al. (2015)	1	NR	.67
Stimulation	Parks-Leduc et al. (2015)	1	NR	.73
Conservation	Parks-Leduc et al. (2015)	1	NR	.67

## Artifact Distributions Used in Corrections

Variable	Source(s)	r	k	$\overline{r}_{\rm vv}$
Conformity	Parks-Leduc et al. (2015)	1	NR	.68
Security	Parks-Leduc et al. (2015)	1	NR	.65
Tradition	Parks-Leduc et al. (2015)	1	NR	.63
Vocational interests				
Realistic	Wiernik (2016)	1	21	.93
Investigative	Wiernik (2016)	1	21	.93
Artistic	Wiernik (2016)	1	21	.95
Social	Wiernik (2016)	1	21	.93
Enterprising	Wiernik (2016)	1	21	.93
Conventional	Wiernik (2016)	1	21	.92
Entrepreneurial intentions	Zhao et al. $(2010)$	1	NR	.91
Procrastination	Steel (2007)	1	NR	.90
Workaholism	Clark et al. $(2016)$	1	NR	.89
Interpersonal		1	1 111	.07
Job Application				
Employment interview				
Conventional/Low structure	Conway et al. (1995)	3	22	.64
Behavioral/High structure	Salgado & Moscato (1995)	3	NR	.75
Negotiation performance	Conway et al. (1995)	3	22	.64
Assessment center dimension		C C		
Communication	Meriac et al. (2008)	1	NR	.86
Consideration of others	Meriac et al. (2008)	1	NR	.80
Influencing others	Meriac et al. (2008)	1	NR	.83
Assessment center exercise	(2000)	-	1 111	.07
Leaderless group discussion	Hoffman et al. (2015)	1	NR	.93
Oral presentation	Hoffman et al. (2015)	1	NR	.94
Role-play	Hoffman et al. (2015)	1	NR	.88
On the Job		-	1 121	
Social networks				
Expressive: Brokerage	Fang et al. (2015)	0	NR	1.0
Expressive: Indegree	Fang et al. $(2015)$	0	NR	1.0
Instrumental: Brokerage	Fang et al. $(2015)$	0	NR	1.0
Instrumental: Indegree	Fang et al. $(2015)$	0	NR	1.0
"Getting along" performance	Wilmot et al. $(2014)$	3	20	.67
Interpersonal citizenship behavior	Wilmot et al. (2014)	3	20	.67
Career/Lifespan		-	_ •	
Interpersonal sensitivity	Salgado & Moscato (1995)	3	NR	.75
Leadership		-		
Overall	Wilmot et al. (2014)	3	15	.64
Emergence	Wilmot et al. $(2014)$	3	15	.64
Effectiveness	Wilmot et al. $(2014)$	3	15	.64
Group performance	Wilmot et al. $(2014)$	3	15	.64
Transformational leadership		5		
Overall	Wilmot et al. (2014)	3	15	.64
Charisma	Wilmot et al. $(2014)$	3	15	.64

Variable	Source(s)	r	k	$\overline{r}_{\rm vv}$
Individualized consideration	Wilmot et al. (2014)	3	15	.64
Intellectual stimulation	Wilmot et al. (2014)	3	15	.64
Transactional leadership	× ,			
Contingent reward	Wilmot et al. (2014)	3	15	.64
Management by exception	Wilmot et al. (2014)	3	15	.64
Passive leadership	Wilmot et al. (2014)	3	15	.64
Attitudes and Well-Being				
Education				
Adjustment to college				
Överall	Credé & Niehorster (2012)	1	55	.92
Academic	Credé & Niehorster (2012)	1	53	.85
Social	Credé & Niehorster (2012)	1	46	.83
Personal-emotional	Credé & Niehorster (2012)	1	49	.83
Institutional attachment	Credé & Niehorster (2012)	1	34	.83
Study attitudes	Credé & Kuncel (2008)	1	30	.83
Career decision-making difficulties	Osipow & Gati (1998)	1	NR	.94
Job Application	L			
Applicant attraction to	Symidom at al. $(2015)$	1	ND	07
organization	Swider et al. (2015)	1	INK	.87
Applicant attraction to	Servidor et al. $(2015)$	1	ND	07
organization	Swider et al. (2015)	1	INK	.87
Applicant reactions: Procedural	House the set of $(2004)$	1	ND	02
justice	Hausknecht et al. (2004)	1	INK	.83
Assessment center dimension:	Maria $a$ at al. (2008)	1	ND	05
Stress tolerance	Meriac et al. (2008)	1	INK	.85
On the Job				
Job satisfaction	Judge et al. (2002b)	1	NR	.83
Organizational commitment	-			
Global	Choi et al. (2015)	1	14	.87
Affective	Choi et al. (2015)	1	39	.84
Continuance	Choi et al. (2015)	1	20	.73
Normative	Choi et al. (2015)	1	19	.78
Turnover intentions	Zimmerman (2008)	1	NR	.81
Work-life balance				
	Mesmer-Magnus & Viswesvaran	1	ND	70
Family interference with work	(2005)	1	INK	.79
	Mesmer-Magnus & Viswesvaran	1	ND	70
Work interference with family	(2005)	I	NR	.79
Work-nonwork spillover:	Mesmer-Magnus & Viswesvaran			-
Negative	(2005)	1	NK	.79
Work-nonwork spillover:	Mesmer-Magnus & Viswesvaran	1		70
Positive	(2005)	1	NK	.79
Expatriate adjustment				
Överall	Harari et al. (2018)	1	NR	.86
General	Harari et al. (2018)	1	NR	.81

Variable	Source(s)	r	k	$\overline{r}_{yy}$
Interactional	Harari et al. (2018)	1	NR	.87
Work	Harari et al. (2018)	1	NR	.86
Burnout				
Emotional exhaustion	Swider & Zimmerman (2011)	1	NR	.88
Depersonalization	Swider & Zimmerman (2011)	1	NR	.74
Personal accomplishment	Swider & Zimmerman (2011)	1	NR	.76
Leader-member exchange	Dulebohn et al. (2012)	1	NR	.91
Abusive supervision perceptions	Mackey et al. (2017)	1	NR	.82
Workplace harassment perceptions	Mackey et al. (2017)	1	NR	.82
Justice perceptions				
Distributive	Huang et al. (2017)	1	NR	.93
Informational	Huang et al. (2017)	1	NR	.88
Interpersonal	Huang et al. (2017)	1	NR	.88
Procedural	Huang et al. (2017)	1	NR	.87
Safety climate	Beus et al. (2015)	1	NR	.90
Career/Lifespan				
Career adaptability	Rudolph et al. (2017b)	1	NR	.96
Career satisfaction	Ng et al. (2005)	1	NR	.85
Happiness	Steel et al. (2008)	1	NR	.93
Life satisfaction	Steel et al. (2008)	1	NR	.84
Quality of life	Steel et al. (2008)	1	NR	.74
Counterproductivity				
Education				
Academic dishonesty	Giluk & Postlethwaite (2015)	1	NR	.83
Job Application				
Applicant faking	Birkeland et al. (2006)	0	NR	1.0
On the Job				
Safety performance	Beus et al. (2015)	1	NR	.84
Irresponsible behavior	Wilmot et al. (2014)	3	NR	.60
Counterproductive work behavior				
Overall	Dalal (2005)	1	NR	.77
Other-ratings	Wilmot et al. (2014)	3	NR	.60
Interpersonal	Berry et al. (2007)	1	26	.84
Organizational	Berry et al. (2007)	1	22	.82
Withdrawal behavior	Carpenter & Berry (2017)	1	37	.79
Cyberloafing	Mercado et al. (2017)	1	42	.87
Absenteeism	Li et al. (2014)	1	37	.79
Career/Lifespan				
Antisocial behavior	Berry et al. (2007)	1	26	.84
Aggression	Berry et al. (2007)	1	26	.84
Accidents			-	·
Occupational	Salgado (2002)	1	9	.45
Vehicular	Salgado (2002)	1	9	.45

Variable	Source(s)	r	k	$\overline{r}_{yy}$
Performance				
Education				
Study habits	Credé & Kuncel (2008)	1	30	.83
Academic attendance	Salgado & Táuriz (2014)	1	NR	1.0
Academic performance	Salgado & Táuriz (2014)	1	8	.81
Postsecondary	Beatty et al. (2015)	1	98	.93
Academic success	Salgado & Táuriz (2014)	1	8	.81
Educational attainment	Ng & Feldman (2010)	0	NR	1.0
Training performance	Salgado & Táuriz (2014)	1	2	.80
Training success	Blume et al. (2010)	1	NR	.77
Job Application				
Situational judgment test				
Knowledge	McDaniel et al. (2007)	0	NR	1.0
Behavioral tendency	McDaniel et al. (2007)	0	NR	1.0
Job search success				
Job search intensity	van Hooft et al. (2015)	1	NR	.86
Employment status	van Hooft et al. (2015)	0	NR	1.0
Employment quality	van Hooft et al. (2015)	0	NR	1.0
Assessment center dimension				
Organizing and planning	Meriac et al. (2008)	1	NR	.87
Problem solving	Meriac et al. (2008)	1	NR	.91
Assessment center exercise				
Case analysis	Hoffman et al. (2015)	1	NR	.85
In-basket	Hoffman et al. (2015)	1	NR	.83
On the Job				
Occupational performance	Salgado & Táuriz (2014)	3	20	.61
Training and job performance	Viswesvaran et al. (1996)	3	40	.52
Overall job performance				
Supervisor-ratings	Viswesvaran et al. (1996)	3	40	.52
Peer-ratings	Conway et al. (2001)	3	9	.29
Subordinate-ratings	Conway et al. (2001)	3	14	.25
Self-ratings	Joseph et al. (2015)	1	NR	.82
Maximal performance	Beus & Whitman (2012)	1	NR	.75
Typical performance	Beus & Whitman (2012)	1	NR	.81
Technical performance	Wilmot et al. (2014)	3	16	.77
Contextual performance	Wilmot et al. (2014)	3	20	.67
Organizational citizenship				
behavior				
Overall	Wilmot et al. (2014)	3	20	.67
Global	Wilmot et al. (2014)	3	20	.67
Organizational	Wilmot et al. (2014)	3	20	.67
Change	Wilmot et al. (2014)	3	20	.67
Voice				
Overall	Chamberlin et al. (2016)	1	NR	.86
Prohibitive	Chamberlin et al. (2016)	1	NR	.86

Variable	Source(s)	r k	$\overline{r}_{ m yy}$
Promotive	Chamberlin et al. (2016)	1 NR	.86
Adaptive performance	Huang et al. (2014)	3 240	.78
Creativity	Salgado & Táuriz (2014)	3 20	.61
Performance rating leniency	Harari et al. (2015)	1 NR	.84
Career/Lifespan			
Job complexity	Zimmerman (2008)	1 NR	.83
Job crafting	Rudolph et al. (2017a)	1 NR	.83
Organizational tenure	Ng & Feldman (2010)	0 NR	1.0
Personnel data	Salgado & Táuriz (2014)	3 20	.61
Commendable behavior	Salgado & Táuriz (2014)	3 20	.61
Productivity	Salgado & Táuriz (2014)	1 7	.83
Status change	Barrick & Mount (1991)	0 NR	1.0
Promotions	Ng et al. (2005)	0 NR	1.0
Salary	Ng et al. (2005)	0 NR	1.0
Personality			
Conscientiousness	Davies et al. (2015)	1 307	.79

*Note.* r = type of reliability coefficient: 0 = none, 1 = internal consistency (i.e., coefficient of equivalence), 2 = test-retest (i.e., coefficient of stability), 3 = inter-rater reliability. k = total number of coefficients; NR = not reported.

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