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Re-examining Citizenship: How the Control of Measurement Artifacts Affects Observed Relationships of Organizational Citizenship Behavior and Organizational Variables

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We examined the impact that measurement artifacts (antithetical items that overlap counterproductive work behavior (CWB), agreement response, halo in supervisor ratings) in organizational citizenship behavior (OCB) measures has on observed relationships between OCB and 15 predictors. Respondents were 146 employees and their supervisors who completed surveys that included OCB measures with and without artifacts. Predictors (conscientiousness, emotional stability, empathy, distributive justice, procedural justice, role ambiguity, role conflict, leader–member exchange, affective organizational commitment, job satisfaction, negative and positive emotion, turnover intention, CWB, and task performance) were chosen that related to OCB in prior meta-analyses. Results with the OCB scale with artifacts were consistent with meta-analyses, whereas results with the artifact-controlled OCB scale were not, suggesting that accepted conclusions about OCB's relationships with many other variables should be reexamined.

The past few decades have seen an explosion of interest in broadening the domain space of job performance from a narrow focus on how well people perform job tasks, to include additional performance-related behaviors that can be both helpful (organizational citizenship behaviors [OCB]) or harmful (counterproductive work behavior [CWB]) to organizations (Sackett & DeVore, 2002). A vast literature has emerged relating presumably harmful CWB and presumably helpful OCB to a large variety of employee and organizational variables conceptualized as potential antecedents. Several meta-analyses have summarized relationships of both CWB (Berry, Ones, & Sackett, 2007; Dalal, 2005; Hershcovis et al., 2007) and OCB (Dalal, 2005; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995; N. P. Podsakoff, Whiting, Podsakoff, & Blume, 2009; P. M. Podsakoff, MacKenzie, Paine, & Bachrach, 2000) with many variables (e.g., emotion, job satisfaction, justice, and organizational commitment) including one another.

Unfortunately, recent work suggesting methodological problems in the measurement of CWB and OCB have created ambiguity in the interpretation of their intercorrelation. Dalal (2005) raised concern about three measurement artifacts (item overlap, agreement rather than frequency response anchors, and halo in supervisor ratings). His meta-analysis suggested that

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estimates of rather strong negative CWB–OCB mean correlations across studies (e.g., –.60 by Sackett, 2002) were likely inflated by these artifacts. Following up on Dalal (2005) with a field experiment, Spector, Bauer, and Fox (2010) not only replicated the effects of measurement artifacts on the relationship between CWB and OCB, but showed that artifacts also affected relationships between OCB and four additional variables (interpersonal conflict, job satisfaction, organizational constraints, and workload). This article reports results of a study that further investigated the effects of measurement artifacts on relationships of OCB with 15 potential antecedents that have been established in prior research. The goal was to clarify the extent to which artifacts might have distorted observed findings on the potential antecedents of OCB.

ARTIFACTS THAT AFFECT THE OCB–CWB RELATIONSHIP

Item Content

Dalal (2005) used the term *antithetical items* to reflect overlapping content between CWB and OCB scales. For example, some of the popular OCB scales include counterproductive behaviors that are reverse coded (for additional examples, see Spector et al., 2010), such as "takes undeserved breaks" (Smith, Organ, & Near, 1983) or "conducts personal business on company time" (Farh, Earley, & Lin, 1997). Other scales have overlapping content that is negated in the item that avoids reverse coding, such as "Does *not* [emphasis added] take extra breaks" (P. M. Podsakoff, MacKenzie, Moorman, & Fetter, 1990). All these items are very similar to those in commonly used CWB scales (e.g., Bennett & Robinson, 2000; Spector et al., 2006).

The inclusion of antithetical items produces two problems. On a conceptual level it leads to construct confusion because one construct is operationalized as the absence of the other. Thus OCB becomes the absence of CWB, making CWB and OCB opposite ends of a single continuum rather than distinct constructs. On a measurement level, item overlap creates a confounding between the CWB and OCB constructs such that the observed relationship between their measures is inflated. Indeed Dalal (2005) reported that the mean correlation across studies with antithetical items was –.54 versus –.16 for studies without antithetical items.

Rating Type

Dalal (2005) noted that the nature of the rating task can be critical in the assessment of CWB and OCB. Scales that ask raters to indicate agreement with each item require the rater to indicate whether the individual in question (self or other) is the sort of person likely to engage in each behavior. Such scales may largely tap into general impressions and tend to elicit an acquiescence response style (Fowler, 1995). A single salient instance of a particularly harmful or helpful behavior might well elicit an implicit theory (Powell & Butterfield, 1984), resulting in a consistent set of ratings across CWB and OCB. Indeed some items of popular OCB scales are not very specific about the behavior being performed and seem to assess personality more than behavior, such as "Is the classic 'squeaky wheel' that always needs greasing" from the popular P. M. Podsakoff et al. (1990) OCB scale.

By contrast, frequency scales ask the rater to indicate how often the ratee has performed each behavior, often with specific time frame anchors, such as *daily* or *weekly*. Rather than eliciting a judgment about whether the ratee is the sort of person who does each behavior, frequency ratings require the rater to recall how often he or she has observed specific instances of that behavior (Schwarz & Oyserman, 2001). Thus there is less likelihood of the rater relying on schema because attention is on specific behavioral episodes. Dalal's (2005) meta-analysis showed that the CWB–OCB correlation was larger with ratings of agreement ($r = –.55$) than frequency ($r = –.23$).

Rating Source

Although self-reports are most often the target of concern due to biases such as common method variance (Spector, 1994), Dalal (2005) suggested that when it comes to ratings of CWB and OCB, it might well be supervisor ratings that are more problematic. This is because supervisors, as well as other alternative (to self-report) sources might be more subject to halo and implicit theories that would inflate correlations among behavior reports. Furthermore, supervisors might not always be in the best position to observe behavior, as employees are likely motivated to keep CWB hidden (Berry, Carpenter, & Barratt, 2012), and in some instances might perform (or appear to perform) OCB in front of supervisors to make a good impression (Bolino, 1999). In addition, supervisors can have a different perspective than employees, and likely focus mainly on how the employee contributes to the organization, minimizing reports of other forms of OCB (Carpenter, Houston, & Berry, 2012). In contrast, employees are in the best position to know their own behavior, and at least with anonymous surveys, might be less likely to distort responses. Indeed, Carpenter et al. (2012) found no evidence for OCB inflation with employee self-reports.

Indeed evidence exists that supervisor and other alternative sources might be less accurate and more subject to biases than self-reports. Several studies have shown that alternative sources have worse discriminant validity in reports of the job environment than does the self (Glick, Jenkins, & Gupta, 1986; Spector, Fox, & Van Katwyk, 1999). More relevant to our current argument are results by Vandenberg, Lance, and Taylor (2005), who showed that self-reports of OCB behaviors fit the researcher's a priori dimensions that were ill fit by supervisor ratings. Thus it should not be surprising that, whereas Dalal (2005) found a strong relationship between supervisor ratings of CWB and OCB ($r = –.60$), relationships with self-reports were relatively small ($r = –.12$).

Isolating Artifacts

Spector et al. (2010) followed up on Dalal (2005) by conducting a field experiment that addressed two limitations that Dalal noted with his meta-analysis. First, there were insufficient studies with all combinations of artifacts so that the artifacts were confounded. For example, many of the studies used the popular P. M. Podsakoff et al. (1990) OCB scale that had both antithetical items and agreement response choices. Second, with meta-analysis it is always possible that there are confounds between the moderators of interest and other variables. Those studies that used frequency responses, for example, might have differed in meaningful ways from studies that used agreement. Spector et al.'s (2010) single primary study was able to isolate the three artifacts by including all eight possible combinations of conditions with samples from the same underlying population.

Results of Spector et al. (2010) were consistent with Dalal's (2005) meta-analysis and adds confidence to Dalal's conclusions. The isolation of each artifact showed that the inclusion of antithetical items had the largest effect on observed correlations between CWB and OCB, followed in decreasing order by response format, and rater source. In fact the mean correlations for the two antithetical conditions (present vs. absent) were within .03 of Dalal's (2005) meta-analytic results.

Artifacts and Relationships With Other Variables

In addition to isolating the effects of artifacts on the CWB–OCB correlations, Spector et al. (2010) investigated the effects of the artifacts on relationships of OCB with four other variables, the job stressors of interpersonal conflict, organizational constraints and workload, and job satisfaction. Interpersonal conflict concerns the extent to which employees have personal argument and disputes with one another (Spector & Jex, 1998), organizational constraints are conditions at work that interfere with task performance, such as inadequate human resources or training (Peters & O'Connor, 1980), workload is the amount of work that the employee must accomplish (Spector & Jex, 1998), and job satisfaction is the overall positive attitude about the job (Spector, 1997).

Although there was not a consistent pattern of results across conditions, Spector et al. (2010) found considerable differences in relationships of OCB to these four variables as a function of the artifacts. For example, the correlation of job satisfaction with self-reported frequency ratings of OCB with antithetical items was .30 versus .05 without antithetical items. With supervisor ratings of OCB, the corresponding correlations were .38 and .04, respectively. In some instances, correlations changed sign between conditions. For example, the correlation of interpersonal conflict with self-reported frequency ratings of OCB was .24 without antithetical items and -.24 with antithetical items. The corresponding correlations for supervisor-rated OCB were .13 versus –.18, respectively. All of these correlations that were greater than .13 were statistically significant, and all correlation comparisons were significant according to our *t* tests for dependent correlations (E. J. Williams, 1959).

Similarly, Fox, Spector, Goh, Bruursema, and Kessler (2012) replicated some of the Spector et al. (2010) findings in comparing OCB measures with and without the antithetical and format artifacts on relationships with stressors, justice, job satisfaction, and emotion. In this entirely self-report study, correlations were significantly lower with artifacts controlled for all but positive emotion.

CORRELATES OF OCB

Several meta-analyses have summarized relationships of OCB with a variety of employee and environmental variables (Borman, Penner, Allen, & Motowidlo, 2001; Eatough, Chang, Miloslavic, & Johnson, 2011; LePine et al., 2002; Organ & Ryan, 1995; N. P. Podsakoff et al., 2009; P. M. Podsakoff et al., 2000). Taken together, these meta-analyses suggest that OCB is related to job attitudes, emotion at work, justice, personality, stressors, and relationships with supervisors (see Figure 1). From a theoretical perspective, Organ (1997) discussed how OCB derives from a combination of attitudes in response to the environment and personality. On the

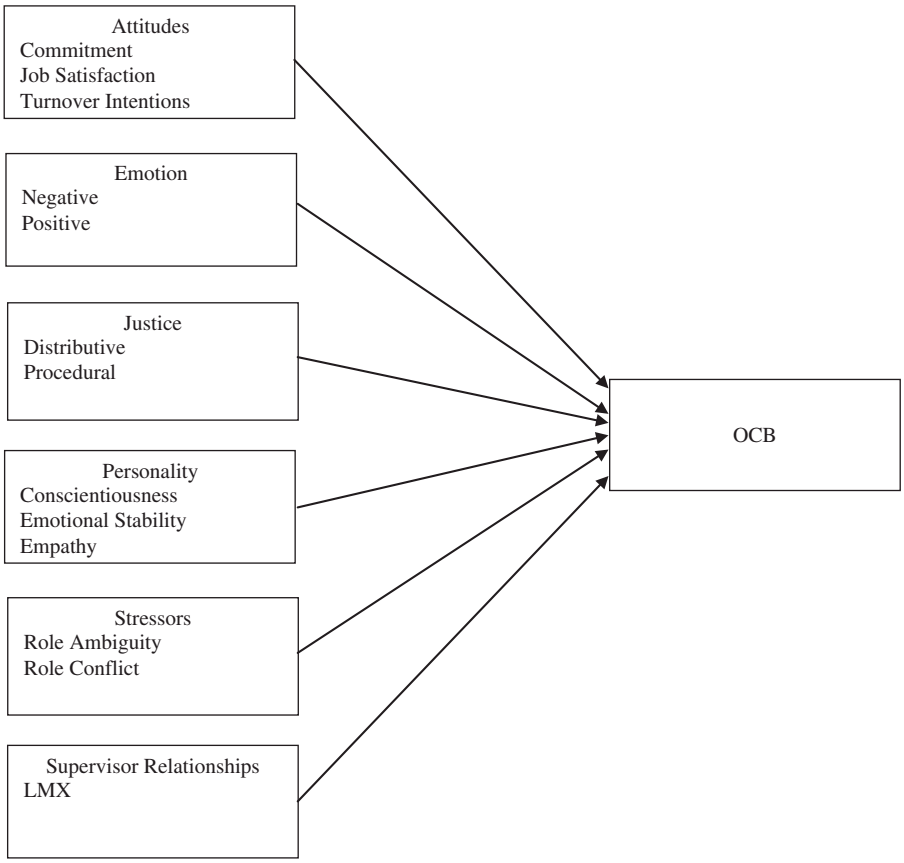

FIGURE 1 Potential antecedents of organizational citizenship behavior (OCB). *Note.* LMX = leader–member exchange.

attitude side, job satisfaction and organizational commitment result from fair treatment and supervisor support. Conscientiousness and personality traits that are related to attitudes are also factors in OCB. Thus one might assume that positive experiences and feelings facilitate OCB, whereas negative experiences and feelings inhibit it.

Although the idea of OCB being a response to good things at work has intuitive appeal, related work on altruism from social psychology suggests a different set of antecedents. Penner, Midili, and Kegelmeyer (1997) linked the altruism/volunteering literature from social psychology to the workplace, arguing that to understand OCB one must focus on its function to the individual who engages in it. They noted that there can be a variety of motives underlying OCB such as value-expression (valuing the well-being of others), social acceptance, career development, and personal enhancement. Note that none of these motives suggest that OCB would necessarily be a response to fairness, favorable job conditions, supervisor support, or job attitudes. Furthermore, value-expression would suggest that empathy rather than conscientiousness would predict OCB. Finally, Penner et al. argued that commitment to the target encourages volunteerism, and positive

emotion is an important element in altruism in general as people who are high in positive affect will tend to view helping others as a means to enhance positive feelings. In light of the work on altruism, there is reason to be suspicious about findings based on flawed OCB scales, and theories of OCB based on those findings.

Going beyond potential OCB antecedents to the broader domain of performance, we can consider OCB, CWB, and task performance to be distinct aspects of the broad notion of job performance (Sackett, 2002). Meta-analyses have shown a clear link between OCB and task performance. The N. P. Podsakoff et al. (2009) meta-analysis reported a mean correlation of .49 between these two forms of performance. This should not be surprising for supervisor ratings of performance, as it has been shown that supervisors often consider OCB as part of job performance (Allen & Rush, 1998; Rotundo & Sackett, 2002). OCB has also been shown to relate to CWB in meta-analyses (Berry et al., 2007; Dalal, 2005). As noted earlier, Dalal's (2005) meta-analysis showed how measurement artifacts likely inflated relationships between OCB and CWB. His results combined with follow-up studies (Fox et al., 2012; Spector et al., 2010) suggest that there is little to no relationship between these two aspects of performance once artifacts are controlled. What has received less attention is the extent to which the rather strong relationships between OCB and task performance might be affected by artifacts, as well.

The Current Study

Given the potential measurement problems uncovered by Dalal (2005) in the assessment of OCB, and the findings that relationships with CWB and a handful of other variables were affected, such as emotions, job satisfaction, and occupational stressors (Fox et al., 2012; Spector et al., 2010), it seems prudent to reexamine relationships of OCB with other variables considered potential antecedents to provide more confidence in our conclusions about how OCB is linked to workplace conditions and experiences. If we remove the artifacts from the assessment of OCB, will results differ from what we have seen in the literature? If so, this would throw into question models of OCB that suggest it is the response to favorable treatment and good feelings about work (Organ & Ryan, 1995). Dalal compared correlations of several potential antecedents between CWB and OCB, finding that the relationships were often similar in magnitude but opposite in direction. Will results be similar to his with an artifact-controlled OCB scale, or once artifacts are removed will the correlates of CWB and OCB differ?

We compared relationships of 15 commonly studied organizational and personal variables with two OCB scales, one that was designed to minimize artifacts and one that was not. Our choices of the 15 variables were informed by our review of the meta-analyses noted earlier. Thirteen of the variables fit into a framework (see Figure 1) of OCB antecedents suggested by Organ and Ryan (1995), and expanded by Eatough et al. (2011) and Penner et al. (1997).

We built upon existing work concerning the possible impact of measurement artifacts on relationships of OCB with potential antecedents and CWB, using the same CWB and OCB scales as used here (Fox et al., 2012; Spector et al., 2010). Spector et al. (2010) overlapped with the current study only by including CWB and job satisfaction. They showed that job satisfaction relationships with OCB were affected by artifacts, so the next step would be to see if OCB relationships with other variables are affected as well. Some of that work was done by Fox et al. (2012), who added emotions and justice to CWB and job satisfaction, but they used self-reports

not only for the correlates but for OCB itself. Given concerns with monomethod biases when self-reports are used exclusively and that most studies used supervisor ratings of OCB, it is important to show differences when OCB was rated by supervisors rather than self-reports as we cannot assume results would be the same. In their meta-analysis, Carpenter et al. (2012) showed modest convergence between self- and supervisor-ratings of OCB, and provided evidence that employees and supervisors might focus on different aspects of OCB. Thus the current study collected supervisor ratings of CWB, OCB, and task performance and included a more complete nomological network of variables most strongly linked in the literature to OCB than did Fox et al. (2012), who failed to include personality, organizational commitment, or supervisor relationship quality as potential antecedents. The inclusion of task performance is particularly important because the idea that its observed relationships with OCB based on supervisor ratings are inflated seems feasible considering Dalal's (2005) arguments concerning supervisor ratings likely being influenced by halo. Our main contribution will be to help clarify the role of measurement artifacts in observed relationships of OCB with important variables.

METHOD

Data and Sample

Respondents for the study were 146 employed individuals recruited from university classes who had corresponding supervisor data. These individuals worked at least 20 hr/week with an average of 27.4 hr/week ($SD = 8.3$), and had a mean age of 22.1 ($SD = 5.0$, range = 18–60), and a mean job tenure of 28.4 months ($SD = 32.2$). They were predominantly female (75%). They held a variety of jobs in varying industries including banking (teller), healthcare (e.g., home health aide, pharmacy aide), hospitality (e.g., bartender, server), retail (e.g., customer assistant, sales clerk), and transportation (bus driver). Several indicated being managers. We originally recruited 410 employees, with 42 being dropped for having missing data. A total of 153 supervisors returned questionnaires, with 146 that could be matched to a target respondent.

To compare respondents with ($n = 146$) and without ($n = 222$) matched supervisor surveys, we conducted a series of one-way analyses of variance with the 21 variables in the study (including demographics of age, gender, working hours, and tenure) serving as dependent variables. Only three of the 21 were statistically significant (conscientiousness, affective commitment, and OCB-C), although effect sizes were quite small (accounting for 1% to 2% of the variance). Overall the mean effect size was .005, suggesting that there were few differences between the two groups, and given the rather large samples, it is not surprising that a few small differences were statistically significant.

Measures

OCB Measures. We used two OCB scales, completed by both employees and their supervisors, one that contained the measurement artifacts of agreement and antithetical items and one designed to avoid them. Our artifact free measure (OCB–controlled) was the short form (Spector et al., 2010) of the Organizational Citizenship Behavior Checklist (Fox et al., 2012). This scale

was specifically developed to avoid the measurement artifacts of antithetical items and agreement response format found to be problematic (Dalal, 2005). Items were chosen from critical incidents provided by subject matter experts who were asked to provide examples of OCB they had performed or witnessed. Items asked about behavior directed toward coworkers (e.g., advised a coworker, helped a coworker who had too much to do) and organizations (e.g., offered suggestions, volunteered for extra work). Each of the 10 items in the scale asked how often the target individual engaged in a behavior with response choices 1 (*never*), 2 (*once or twice*), 3 (*once or twice per month*), 4 (*once or twice per week*), and 5 (*every day*).

For comparison we used two of the five subscales (Conscientiousness and Sportsmanship) from P. M. Podsakoff et al. (1990). We chose this scale because it is one of the most frequently used OCB scales, and it uses an agreement format. To keep the number of items the same as the OCB-C and achieve internal consistency that exceeded the generally accepted minimum (Lance, Butts, & Michels, 2006), we chose two of the five 5-item subscales that contain content that overlaps with CWB. The two subscales were significantly intercorrelated ($r = .40$ for self-reports and .50 for supervisor reports). Three of the five items from the Conscientiousness subscale ask about attendance (e.g., "Does not take extra breaks"), and obeying rules and regulations. All five of the Sportsmanship items were reverse scored asking about complaining ("Consumes a lot of time complaining about trivial matters") and negativity. The two subscales combined contain 10 items that use a 5-point response scale ranging from 1 (*disagree very much*) to 5 (*agree very much*). High scores represent a high level of OCB for both scales.

Predictor Variables. Fifteen variables were chosen because prior meta-analyses suggested they relate to OCB. We use the term *predictor* in a statistical sense to refer to variables on the right-hand side of a regression equation and do not mean to imply they are necessarily causes of OCB, although 13 of them have been suggested as antecedents.

Personality. The three personality variables of Conscientiousness, Emotional Stability, and Empathy were each measured with 10-item scales from the International Personality Item Pool (Goldberg et al., 2006). These scales asked respondents to indicate how well each item characterizes them with 5-point rating scales ranging from 1 (*very inaccurate*) to 5 (*very accurate*). High scores represent high levels of conscientiousness, emotional stability, and empathy, respectively.

Working conditions. Five variables were chosen concerning conditions at work. We included the six-item Distributive Justice Scale developed by Price and Mueller (1986). Each item asked the respondent to what extent he or she is fairly rewarded, with five response choices ranging from 1 (*very unfairly*) to 5 (*very fairly*). Procedural justice was assessed with Moorman's (1991) 12-item scale. A 6-point agreement format was used, ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). With both justice scales, high scores represent high levels of justice. Leader–member exchange (LMX) quality was assessed with the seven-item scale developed by Graen and Uhl-Bien (1995), with modifications by Johnson and Saboe (2010) to make the response choices the same for all items. A 6-point agreement format was used ranging from 1 (*disagree very much*) to 6 (*agree very much*). High scores represent a better relationship with the supervisor. Role ambiguity (six items) and role conflict (eight items) were assessed with the Rizzo, House, and Lirtzman (1970) scales. Response choices range from 1 (*very false*) to 5 (*very true*). High scores represent high levels of role ambiguity and role conflict, respectively.

Attitudes and emotion. Five variables were included that reflected employee attitudinal and emotional responses to the workplace. Affective organizational commitment was measured

with the six-item subscale of Meyer, Allen, and Smith's (1993) three-component measure. Responses are made using a 6-point response format, ranging from 1 (*disagree very much*) to 6 (*agree very much*). Job satisfaction was assessed with the three-item measure from the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979). Response choices were the same as for the job commitment measure. To assess emotional responses to work, the five-item Negative and five-item Positive Emotion subscales from the Job-Related Affective Well-Being Scale (Van Katwyk, Fox, Spector, & Kelloway, 2000) were used. This instrument asks respondents to indicate how often they feel each listed emotion while at work, ranging from 1 (*never*) to 5 (*every day*). Turnover intent was measured with the one-item measure from Spector, Dwyer, and Jex (1988). Respondents are asked how often they seriously consider quitting their current job from 1 (*never*) to 6 (*extremely often*).

Performance. Two additional aspects of performance were included in both self-reported and supervisor surveys. CWB was assessed with the 10-item short version (Spector et al., 2010) of the Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2006). The instrument asks for ratings of frequency on 5-point scales from 1 (*never*) to 5 (*every day*) for items that reflect various forms of CWB, half directed toward organizations and half directed toward people in organizations. High scores indicate high frequency of CWB. Task performance was measured with the L. J. Williams and Anderson (1991) seven-item performance measure. Respondents are asked to indicate their extent of agreement with items that reflect task performance using a 6-point scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). High scores indicate good performance.

Procedure

Respondents were recruited from a university-based research participant pool and brought into a research laboratory to complete the survey. A requirement for participation was that the respondent had to be at least 18 years old and employed for at least 2 months in the current job. They were given a brief introduction to the purpose of the study, the requirement of being employed, and the compensation of extra-credit class points for participation after arriving at the lab. They were then asked to complete a 20-min survey online (Survey Monkey) on a computer that was provided and to bring a different paper–pencil-based survey back to their supervisors with permit return envelopes. These two surveys were matched by secret codes created by the participants themselves. All mailed-back supervisor surveys were entered into computer files independently by two research assistants.

RESULTS

Descriptive statistics (means, standard deviations, observed and possible ranges, and standardized alpha coefficients) are included in Table 1 for all study variables except demographics. As can be seen, most observed ranges spanned the entire or nearly the entire possible range. Perhaps the most range restricted measures were the OCB-artifact scale, the CWB scale, and the Task Performance scale, in all cases skewed toward better positive performance (high OCB and task performance) and less CWB. Of interest, although they had the same number of items and both

TABLE 1
Descriptive Statistics

Variable	*M*	*SD*	*Observed Range*	*Possible Range*	*Coefficient α*
Conscientiousness	40.2	6.3	15–50	10–50	.86
Emotional Stability	26.1	7.6	10–47	10–50	.88
Empathy	43.0	6.2	10–50	10–50	.88
Distributive Justice	21.9	6.3	6–30	6–30	.95
Procedural Justice	58.1	13.0	14–72	12–72	.97
LMX	32.2	8.6	7–42	7–42	.94
Role Ambiguity	11.0	3.6	6–24	6–30	.72
Role Conflict	20.4	6.7	8–40	8–40	.81
Affective Commitment	22.0	7.2	6–36	6–36	.84
Job Satisfaction	14.0	4.0	3–18	3–18	.94
Negative Emotion	11.0	4.1	5–22	5–25	.80
Positive Emotion	15.4	5.5	5–25	5–25	.91
Turnover Intent	2.6	1.5	1–6	1–6	NA
CWB	15.6	4.8	10–31	10–50	.80
Task Performance	38.8	3.5	23–42	7–42	.81
OCB–Artifact	42.0	5.2	26–50	10–50	.77
OCB–Controlled	33.4	8.0	14–50	10–50	.88
CWB Supervisor	13.3	4.3	10–31	10–50	.85
Task Performance Supervisor	38.5	4.3	13–42	7–42	.84
OCB–Artifact Supervisor	43.0	6.3	24–50	10–50	.87
OCB–Controlled Supervisor	33.2	9.1	13–50	10–50	.91

Note. $n = 146$. LMX = leader–member exchange; CWB = counterproductive work behavior; OCB = organizational citizenship behavior.

used 5-point response choices, the OCB-controlled scale had a lower mean, greater variance, and less restricted range for both self-reports and supervisor-reports than the corresponding OCB–artifact scale, suggesting it was less subject to leniency bias.

Table 2 contains correlations among the predictor variables. As can be seen, the personality variables correlated modestly with one another and correlated with only a handful of other variables. As would be expected emotional stability correlated significantly with negative emotion. The measures of job environment were all significantly intercorrelated, as were the measures of feelings, and all environment variables correlated significantly with all feelings variables. Supervisor-rated job performance correlated with most of the other variables in the study and was significant in more cases than was self-reported job performance.

Table 3 contains corresponding correlations of both OCB scales with the 15 predictor variables. As an additional comparison we show correlations of CWB with these predictors. All 15 predictors were significantly correlated with the self-reported OCB-artifact measure in the direction expected, and all but one predictor (emotional stability) was significantly correlated with supervisor-reported OCB in the direction expected. Specifically, high levels of conscientiousness, emotional stability, empathy, distributive and procedural justice, LMX, affective commitment, job satisfaction and positive emotion, and low levels of role ambiguity, role conflict, negative emotion and turnover intent were associated with high levels of OCB. In many cases the magnitude of correlations were quite similar to those of the meta-analyses, although precise

TABLE 2
Correlations Among Predictor Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Conscientiousness														
2. Emotional Stability	−.26*													
3. Empathy	.31*	−.31*												
4. Distributive Justice	.02	−.19*	.13											
5. Procedural Justice	.05	−.17*	.16	.72*										
6. LMX	−.17*	−.16	.03	.59*	.59*									
7. Role Ambiguity	−.21*	.20*	−.18*	−.49*	−.58*	−.48*								
8. Role Conflict	−.15	.42*	−.20*	−.46*	−.52*	−.48*	.54*							
9. Affective Commitment	−.03	−.11	.20*	.55*	.58*	.45*	−.42*	−.37*						
10. Job Satisfaction	−.03	−.17*	.14	.62*	.61*	.62*	−.54*	−.49	.72*					
11. Negative Emotion	−.04	.27*	.02	−.53*	−.51*	−.52*	.50*	.56*	−.43*	−.63*				
12. Positive Emotion	.10	−.15	.28*	.43*	.54*	.41*	−.38*	−.33*	.67*	.55*	−.20*			
13. Turnover Intent	−.05	.20*	.02	−.62*	−.61*	−.51*	.49*	.49*	−.59*	−.76*	.69*	−.36*		
14. Task Performance	.13	−.01	.18*	.11	.10	.15	−.31*	−.18*	.13	.20*	−.11	.14	−.15	
15. Task Performance Supervisor	.01	−.15	.07	.22*	.28*	.40*	−.22	−.24	.17*	.26*	−.23*	.19*	−.25*	.33*

Note. $n = 146$. LMX = leader–member exchange.
*$p < .05$.

TABLE 3
Correlations of Predictors With OCB and CWB

	Self–Report			*Supervisor–Report*		
Criterion	*OCB–Artifact*	*OCB–Controlled*	*CWB–C*	*OCB–Artifact*	*OCB–Controlled*	*CWB–C*
Conscientiousness	.28[†,*]	.07	−.14	.25[*,†]	.00[+]	−.22[*]
Emotional Stability	−.36[†,*]	.06[+]	.21[*]	−.11	−.02	.13
Empathy	.33[*,†,+]	.09	−.05	.19[*]	.19[*]	−.06
Distributive Justice	.35[*,†]	−.03[+]	−.40[*]	.25[*,†]	.03	−.24[*]
Procedural Justice	.37[*,†]	.12[+]	−.40[*]	.34[*,†]	.09	−.29[*]
LMX	.32[*,†]	.06[+]	−.36[*]	.26[*,†]	.03	−.18[*]
Role Ambiguity	−.50[*,†]	−.04[+]	.45[*]	−.25[*,†]	−.02[+]	.29[*]
Role Conflict	−.42[*,†,+]	.11[+]	.56[*]	−.17[*]	.01[+]	.28[*]
Affective Commitment	.27[*]	.18[*]	−.32[*]	.20[*]	.10	−.15
Job Satisfaction	.31[*,†]	.02[+]	−.40[*]	.24[*,†]	.02	−.20[*]
Negative Emotion	−.33[*,†,+]	.22[*,+]	.57[*]	−.22[*,†]	.22[*+]	.27[*]
Positive Emotion	.33[*]	.25[*]	−.20[*]	.24[*]	.21[*]	−.11[*]
Turnover Intention	−.26[*,†,+]	.08[+]	.44[*]	−.27[*,†]	.07[+]	.28[*]
CWB	−.49[*,†]	.10	—	−.33[*,†,+]	.03[+]	.51[*]
Task Performance	.44[*,+,†]	.08	−.21[*]	.27[*,†]	.03[+]	−.29[*]
CWB–Supervisor	−.41[*,†]	.03[+]	.51[*]	−.62[*,†]	−.09	—
Task Performance Supervisor	.34[*,†]	.01[+]	−.25[*]	.57[*,†,+]	.11[+]	−.42[*]

Note. $n = 146$. OCB = organizational citizenship behavior; CWB–C = counterproductive work behavior checklist; LMX = leader–member exchange.

$^{*}p < .05$. †Significantly different from corresponding artifact free OCB scale. $^{+}$Significantly different from corresponding CWB–C with signs reversed.

comparisons were not always easy as not all meta-analyses clearly separated self-reports from supervisor-reports of OCB. For example, supervisor-reports of OCB for personality were not very different between this study and the Borman et al. (2001) meta-analysis, specifically .25 versus .19, –.11 versus –.12, and .19 versus .17 for conscientiousness, emotional stability, and empathy, respectively. Likewise, relationships between the OCB-artifact scale between our study and the P. M. Podsakoff, MacKenzie, and Bommer (1996) meta-analysis were similar, specifically .20 versus .15 for affective commitment and .24 versus .25 for job satisfaction. Furthermore, the OCB–artifact scale was positively associated with task performance regardless of rating source (self or supervisor), with the largest correlation with supervisor-reports of both ($r = .57$). Finally, the OCB–artifact scale correlated significantly with CWB, regardless of rating source, with again the largest correlation observed when supervisors rated both aspects of performance (–.62), a level very close to the –.60 estimate between these two variables noted by Sackett (2002).

By contrast results with the OCB–controlled scale in most cases were different. As shown in Table 3, for self-reports only three of the 15 predictors (affective commitment, negative emotion, and positive emotion) were statistically significant, and in all cases the magnitude of correlation was smaller than for the OCB–artifact scale. A similar pattern was observed for supervisor-ratings of OCB. The OCB–controlled scale was significant for only three variables (empathy, negative emotion, and positive emotion); in all but two cases the magnitude of correlation was smaller

for the OCB–controlled scale. Furthermore, a series of Hotelling's *t* tests for dependent correlations with Williams correction (E. J. Williams, 1959) were computed to contrast corresponding correlations between the two OCB scales for self-reports and supervisor-reports separately. For self-reports, 13 of 15 comparisons were significant, including both self-rated and supervisor-rated CWB and task performance. For supervisor-reports of OCB, 10 of 15 corresponding correlations were significantly lower for the OCB-controlled scale.

Table 3 also contrasts correlations of predictors between the OCB scales and CWB. The literature suggests that CWB and OCB will relate negatively to one another and oppositely to other variables (Spector & Fox, 2002), so in comparing corresponding correlations we reversed the signs of correlations with the CWB measure. The results here largely support that supposition with the OCB–artifact scale, but not the OCB–controlled measure. For self-ratings of CWB and OCB-artifact, in all 16 cases (including cross-source correlations), the corresponding correlations of the predictors were opposite in sign between the OCB measure and CWB, although two of the CWB correlations failed to reach statistical significance. Furthermore, the corresponding correlations for the OCB–artifact and CWB measures were not significantly different from one another in the majority (12 of 16) cases. For supervisor-ratings of CWB and OCB–artifact, correlations were opposite in sign for all 16 variables. In only two cases were differences between the CWB and the OCB–artifact scale correlations with the same variables were significantly different (self-rated CWB and supervisor-rated task performance) from one another.

Results were different for the comparison of the OCB–controlled and CWB scales. Again, for these comparisons we reversed the signs of correlations with the CWB-C before conducting statistical comparisons with the OCB measure to see if relationships with other variables were similar in magnitude but opposite in sign. Although in most cases for both self-rated and supervisor-rated CWB and OCB, the correlations were opposite in sign, for most of those the OCB-controlled correlations were not themselves significantly different from zero. For self-rated CWB and OCB–controlled, in 11 of 16 cases, the correlation with CWB-C was significantly larger for self-rated CWB than OCB–controlled. For supervisor-rated CWB and OCB–controlled for eight cases correlations with CWB were significantly larger, despite the rather small correlations of CWB with the other measures to begin with.

One further thing to note is the better discriminant validity of the OCB–controlled than OCB–artifact scale in comparison to other measures of performance. For self-rated performance, the OCB–artifact scale correlated –.49 with CWB and .44 with task performance versus corresponding nonsignificant correlations with the OCB–controlled scale of .10 and .08, respectively. An even more dramatic difference can be seen with supervisor-rated performance, with the OCB–artifact scale correlation of –.62 with CWB and .57 with task performance versus corresponding nonsignificant correlations for the OCB–controlled of –.09 and .11, respectively.

DISCUSSION

Dalal (2005) demonstrated that measurement artifacts in the assessment of CWB and OCB likely distorted observed relationships between them, leading to the likely erroneous conclusion that they were strongly negatively correlated. Spector et al. (2010) isolated the effects of Dalal's (2005) three artifacts, showing that when one removed all three, there was little to no relationship between CWB and OCB. The next obvious question is whether the correlation between OCB

and established predictors of OCB would change if the artifacts were controlled. Spector et al. (2010) showed that the artifacts had an impact on correlations between OCB and four predictors (interpersonal conflict, job satisfaction, organizational constraints, and workload), but except for job satisfaction, these predictors were not among those established in the OCB literature as correlates. Fox et al. (2012) expanded the number of variables they compared between OCB scales with versus without artifacts, but they limited their study to self-reports. This was an important omission, considering that shared biases might distort relationships between self-reported OCB and other self-reported variables. Furthermore, much of the OCB literature has relied on nonemployee measures of OCB, most typically supervisor-ratings, making it difficult to compare the monomethod study with the prior literature. Thus we improved on the prior studies by expanding the number of variables investigated, and contrasting both self-rated and supervisor-rated OCB.

Our results showed clearly that relationships with an artifact-laden popular OCB scale that included antithetical items and used an agreement response are different than with the artifact-controlled OCB scale. Whereas the OCB–artifact scale correlated significantly as expected (based on prior meta-analyses) with the 15 predictors, once artifacts were controlled a different pattern of results emerged, in most cases showing smaller and nonsignificant correlations, and with negative emotion even an opposite correlation. That is, individuals who reported or were reported by their supervisors to engage in high levels of OCB reported themselves to experience more negative emotion at work. These findings suggest that OCB might be associated with a smaller set of variables than the literature indicates.

Our findings that run counter to prior OCB studies add to the growing literature suggesting that OCB is a more complex behavior than some of the early theories might indicate and that there can be both positive and negative aspects that can have different antecedents (Bolino, 1999; Bolino, Turnley, & Niehoff, 2004). Furthermore, our findings are consistent with the work of Penner et al. (1997) that suggests empathy and positive emotion should be related to OCB. Furthermore, the relationship with negative emotion was opposite in sign between the two OCB scales. The OCB–controlled scale for both self-rated and supervisor-rated OCB was positively related to negative emotion, suggesting that individuals who engage in more OCB experience more negative emotion. Although this at first might seem counterintuitive, Spector and Fox (2010a, 2010b) discussed mechanisms suggesting that OCB can be associated with negative feelings under some conditions, such as when OCB is necessary to compensate for a low performing coworker, or when it is compulsory (Vigoda-Gadot, 2006). Having to perform a coworker's task would likely be labeled as OCB, and it might well be followed by anger and CWB directed toward that coworker in retaliation. Compulsory OCB might be recognized in ratings, but emotional responses of employees being forced to go beyond core tasks is likely to be negative.

Of course, one might argue that all we have demonstrated is that the OCB–controlled scale had a different pattern of correlates than the OCB–artifact measure and that it is the latter rather than the former that is reflecting OCB. In other words perhaps the OCB–controlled measure does not reflect OCB but something else. We would argue that this explanation is unlikely. As Fox et al. (2012) noted, the items of the OCB-C were taken from critical incidents generated by subject matter experts who were given a definition of OCB. Although they were not specifically instructed to avoid overlap with CWB, none of the more than 200 incidents overlapped. Furthermore, in the current study, the OCB–controlled measure did not correlate significantly with CWB whether rated by the self or supervisor. On the other hand, the OCB-artifact measure was strongly related to CWB, with a correlation of –.49 for self-ratings and –.62 for supervisor-ratings. Cross-source

correlations were smaller (–.41 and –.33) but still significant. Thus it is clear that the OCB–artifact measure and not the OCB–controlled measure overlaps with CWB, thus relationships of the OCB–artifact measure with other variables were confounded by CWB. Finally, we reran the correlations with the antithetical/overlapping items removed from the OCB–artifact measure. Two of the 10 items were clearly not antithetical ("Is one of the most conscientious employees" and "Believes in giving an honest day's work for an honest day's pay"). We summed these two items and compared correlations with the full scale. Correlations were smaller in all but two cases (correlations were the same) between corresponding correlations across the two-item versus 10-item versions of the OCB–artifact scale, with some differences being quite large (e.g., $r = -.24$ vs. $-.49$ with self-rated CWB and OCB for the two-item and 10-item scales, respectively). The $-.24$ correlation is not very different from the –.16 Dalal (2005) found for OCB scales without antithetical items.

Limitations and Conclusions

Results of this study should be interpreted in light of its limitations. Perhaps most significant is that data were collected using a cross-sectional design. Although we included predictor variables that are often considered to be OCB antecedents, our data cannot establish that they in fact led to OCB, rather than being an effect or merely a concomitant. This is consistent with most of the OCB literature than relies on cross-sectional designs. Thus we can draw conclusions about relationships of OCB with other variables, but the causal nature of those relationships is open to question.

Next, it is possible that our results are limited to the measures used and the population sampled, although that seems unlikely. Ours is not the first study to find unexpected results with OCB when artifacts were controlled, and these studies used different measures and/or different populations than used here (e.g., Marcus, Schuler, Quell, & Humpfer, 2002; Miles, Borman, Spector, & Fox, 2002). Furthermore, our results with the OCB–artifact measure were quite consistent with prior studies as summarized in the meta-analyses we have cited, despite our using only two of five dimensions of the P. M. Podsakoff et al. (1990) scale. For example, we overlap with the LePine et al. (2002) meta-analysis on three variables: conscientiousness, job satisfaction, and organizational commitment. Our correlations of supervisor-rated OCB (chosen because most studies use supervisor ratings) with conscientiousness and organizational commitment fall within the confidence intervals reported by LePine et al., and our job satisfaction correlation of .24 falls just outside their confidence interval (.18–.22). This would argue against the likelihood that our results would not generalize beyond the measure and sample used.

Despite these limitations, our study in combination with others we have cited suggests the need to reexamine our conclusions about OCB's connection to other variables. OCB seems not to be the opposite of CWB, which is the often-noted point that individuals who engage in one tend not to engage in the other. Rather it seems that the two forms of performance are related to different sets of variables It would seem likely based on our findings that OCB is more frequently engaged in by individuals who are high in empathy, experience more negative and positive emotion, and are more affectively committed to their organization. It might not be related to conscientiousness, emotional stability, justice, role ambiguity and conflict, LMX, job satisfaction, turnover intention, and task performance. Clearly the relationship of OCB with other variables is far more

complex than the rather simple idea that it is negatively associated with most things bad and positively associated with most things good. The results of the current study in combination with others concerning OCB measurement artifacts make it important that we continue to examine connections of OCB with other variables.

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