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Bad Apples or Bad Barrels: An Examination of Group- and Organizational-Level Effects in the Study of Counterproductive Work Behavior

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Abstract

Research on counterproductive work behavior (CWB) has largely focused on the individual traits and perceptions that enhance or decrease CWB. Although useful, we propose that a multilevel perspective offers greater insight into CWB antecedents and outcomes by acknowledging the nested nature of the individual within the work group. We review the CWB literature and propose a testable multilevel model that incorporates individual, group, and organizational antecedents of CWB. We conclude with recommendations on alternative techniques to measuring individual CWB and its higher order antecedents.

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Like any social situation, the workplace is the setting for actions that range from the commendable to the morally contemptible. For every employee who exerts maximum effort in the pursuit of legitimate goals, others diligently pursue their own personal goals, which may include online gambling, pilfering supplies, padding expense accounts, and using performance-inhibiting drugs. Employee theft alone costs retailers US$40.7 million a day (Hollinger & Davis, 2002). Half of fast food restaurant and convenience store employees admit to stealing cash and supplies (Wimbush & Dalton, 1997). In the supermarket industry, the average employee steals US$1,209 of cash and goods every year (Jones, Slora, & Boye, 1990). Harris and Ogbonna (2001) interviewed workers in the hospitality industry and found that 85% engaged in some form of sabotage against their employers and customers on a weekly basis.

Why do individuals engage in *counterproductive work behavior* (CWB)? Researchers have identified a number of factors that contribute to untoward action. These factors include individuals' personal qualities, the press of the environment, and the moral ambiguity in some business situations. The current article seeks to contribute to this growing understanding of the roots of CWB by identifying the benefits of a multilevel approach to CWB. We do not suggest that individualistic, personal factors play no role in producing CWB. Rather, we posit that situations are as influential as individuals and that many of the theoretical, design, and analysis problems in the study of CWB can be alleviated by the incorporation of group and organizational constructs.

First, we briefly review and critique the literature on CWB and present a multilevel view of CWB that includes individual-, group-, and organization-level antecedents. Second, we discuss measurement issues relevant to CWB and offer potential remedies to many of the psychometric challenges of CWB. Third, we discuss methodological and statistical approaches to measurement of several of the proposed antecedents. We conclude with a synthesis of our recommendations and future directions of inquiry.

CWB: An Overview

CWBs are deliberate actions that harm the organization (e.g., theft, sabotage) or its members (e.g., bullying, insulting coworkers; Dalal, 2005). The definition is deliberately broad so as to include a wide range of behaviors that may undermine relationships and performance. First, CWB includes behaviors

directed at the organization or directed at members within the organization (Fox, Spector, & Miles, 2001). This distinction mirrors a similar division often recognized in studies of CWB's positive behavior counterpart, organizational citizenship behavior. Second, CWB extends across a spectrum of severity ranging from rather tame indiscretions (e.g., excessive daydreaming) to the extreme (e.g., violence). Third, some researchers examine specific subsets of CWB according to its motivations, including anger (workplace aggression; Skarlicki & Folger, 1997), narcissism (Judge, LePine, & Rich, 2006), or revenge and retribution (organizational retaliatory behavior; Skarlicki, Folger, & Tesluk, 1999). Finally, one intriguing subset of CWB is workplace deviance (Robinson & Bennett, 1995), which requires that in addition to intentional harm, the behavior violates organizational norms. Across all these domains, CWB implies the doing of harm, either due to intentional action or reckless disregard (e.g., arriving to work intoxicated), to the organization or its members (Salgado, 2002).

The increased interest in CWB has produced a substantial number of empirical studies testing the relationships between CWB and personality, attitudes, and workplace perceptions. Substantial evidence suggests that several personality constructs relate to CWB. Salgado (2002) and Mount, Ilies, and Johnson (2006) examined the five factor model (FFM) and CWB. They found small to moderate relationships between CWB and all five factors, but the largest negative relationships were with conscientiousness and agreeableness. Berry, Ones, and Sackett (2007) meta-analyzed workplace deviance and found significant population coefficients for several personality variables, including conscientiousness, agreeableness, and emotional stability. In addition to traits subsumed under the FFM, several other personality traits also show significant relationships to CWB. Spector and colleagues (Fox & Spector, 1999; Penney & Spector, 2002) found that trait anger was the strongest predictor ($r = .59$) of CWB out of a large number of individual predictors, including all factors of the FFM. In addition, studies of clusters of individual predictors, such as the Dark Triad of narcissism, Machiavellianism, and psychopathy, have explained significant proportions of variance in CWB (e.g., Bennett & Robinson, 2000; Paulhus & Williams, 2002).

Going beyond personality, researchers have also succeeded in linking CWB to individual differences in attitudes, perceptions, intentions, and values. Dalal (2005), for example, used meta-analysis to identify moderate relationships between CWB and many attitudinal variables, including job satisfaction and organizational commitment. More general attitudinal constructs, such as variations in moral philosophy (Henle, Giacalone, & Jurkiewicz, 2005), perceptions of organizational constraints (Fox et al., 2001), justice orientation

(Cohen-Charash & Spector, 2001), turnover intentions (Thomas, Wolper, Scott, & Jones, 2001), and job burnout (Cropanzano, Howes, Grandey, & Toth, 1997) each have shown moderate relationships to CWB. Scott and Colquitt (2007) found that tolerance for inequity and preference for equity ratio were predictors of CWB. Specifically, those that sought a higher outcome-to-input ratio than others (Entitleds) and those that sought an exact balance (Sensitives) were more likely to engage in CWB than those accepting a lower outcome-to-input ratio (Benevolents).

Furthermore, these attitudinal and perception variables appear to interact with one another and personality variables in the prediction of different forms of CWB. Colbert, Mount, Harter, Witt, and Barrick (2004) tested the FFM-moderated relationship between workplace perceptions and deviance and concluded the relationship between workplace perceptions and CWB was strongest among employees with low conscientiousness, low agreeableness, or high neuroticism. Similarly, other personality traits, such as narcissism, appear to moderate the relationship between perceptions of the workplace (i.e., organizational constraints) and CWB, such that higher levels of narcissism are associated with a stronger link between organizational constraints and CWB (Penney & Spector, 2002).

Traditionally, much of the theoretical writing on CWB has been centered on personality, but increasingly, social exchange theory (Blau, 1964) is offered as an explanatory framework for why people engage in CWB. The focus is still on the individual, but instead of stable internal traits, the interest is in their adherence to the norm of reciprocity (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). Negative reciprocity norms (Gibney, Zagenczyk, & Masters, 2009), in which the individual adopts an "eye for an eye" mentality, psychologically sanction CWB as a means of revenge. A person or group adopting this norm is especially dangerous as the natural tendency is an escalation in counterretaliations (Pruitt & Rubin, 1986). Positive reciprocity, too, can lead to such CWBs as cronyism and distributive injustice. Positive exchanges can escalate to the point that individuals engage in CWB not as an attack on an enemy but as a favor to a friend (Zagenczyk, Gibney, Murrell, & Boss, 2008). Martinko, Gundlach, and Douglas's (2002) integrative "dues paying" theory and Spector and Fox's (2002) emotion-centered model also offer compelling analyses of the complex and interrelated impact of individual affective, cognitive, and motivational processes on counterproductive actions in the workplace.

CWB: A Multilevel Perspective

The last 20 years have witnessed significant progress in understanding CWB, as researchers have developed extensive theoretical analyses of the causes

and consequences of CWB, and have tested these models in a variety of settings. To a large extent, however, researchers have responded to the question "Why do people act inappropriately in the workplace?" with answers that stress traits, moral maturity, personality, perceptions, motivations, and the interactions among these individual-level, person-centered variables. Such factors are critically important to consider, but they must be integrated in a multilevel perspective that also considers the profound impact of groups and organizations on employee behavior.

Problems With the Individual-Level Perspective

This personological view is costly to the field for several reasons. First, personality and attitudinal variables predict CWB, but the variance accounted for by multiple variables rarely exceeds .30 (Dalal, 2005); there is a significant amount of variance still to be explained. Second, the predictive power of person-level variables may be considerably less if one considers the substantial overlap between personality variables and indexes of CWB. For instance, most CWB scales include items such as, "Left your work for someone else to finish" (Workplace Deviance Scale; Bennett & Robinson, 2000) and "Daydreamed rather than did your work" (Counterproductive Work Behavior Checklist; Spector et al., 2006). These items are correlated to a conscientiousness scale that includes items such as, "Leave my work undone" and "Find it difficult to get down to work" (International Personality Item Pool; Goldberg, 1999). The significant relationship between CWB and conscientiousness is not surprising given the scale overlap. Similar overlap can be found with CWB (How often do you yell at a coworker; How often do you insult a coworker; Workplace Deviance Scale; Bennett & Robinson, 2000) and trait anger (I blow up at people; State-Trait Anger Expression Inventory; Spielberger, 1988) as well as agreeableness (I often insult others; International Personality Item Pool; Goldberg, 1999). Thus, the amount of variance accounted for by individual difference and perception variables may actually be inflated.

The third issue with the personological view is that it omits key higher order variables such as norms, climate, and leadership, which not only independently predict CWB but also interact with individual-level variables to explain CWB (Dunlop & Lee, 2004; Thau, Bennett, Mitchell, & Marrs, 2009). Considering the history of management research, this is surprising as the earliest systematic studies of CWB considered the role that group and organizational factors played in producing organizational misbehavior. Taylor (1911/1967), in his groundbreaking studies of efficiency and productivity, observed deliberately slow-working groups of miners and manufacturing employees were more likely to corrupt a new productive worker than be motivated

by a new worker's presence. The Hawthorne studies also supported the power of the group in facilitating CWB. Roethlisberger and Dickson (1947) found deliberate slowing of work and informal corrective actions (e.g., ostracizing, bullying) by coworkers toward employees who did not conform.

The final issue with the individual-level approach is that it misleads practitioners as to the sources of CWB. If a supervisor overhears an employee tell an inappropriate joke or play a mean-spirited prank on a coworker, the conclusion based on a personological approach would be that the employee is inherently flawed and disciplinary action should be directed only at the offending employee. This explanation leaves out the complementary predictors present in the workplace, such as a culture accepting of mean-spirited behavior. The only difference between the offending person and the rest of the work group is that he or she was caught. Reprimanding or terminating the employee would likely fail to stop these behaviors from occurring in the organization because the antecedents of the behavior have not been fully identified. CWB is reduced when workplace cultures are not accepting of counterproductive behavior (Bacharach, Bamberger, & Sonnenstuhl, 2002; Bamberger & Biron, 2007).

The individual approach to CWB has resulted in a large body of useful findings. However, it has become increasingly evident that the individual level is insufficient to explain CWB fully. In the following sections, we build the case for a multilevel perspective of CWB and highlight recent work that incorporates multilevel research on CWB.

Advantages of a Multilevel Perspective: Bad Apples in Bad Barrels

Multilevel approaches have several distinct advantages relative to individual-level theories of CWB. A multilevel approach is more theoretically egalitarian, recognizing the causal influence of factors that range along the individual–group–organization continuum. Figure 1 provides an overview of the more prominent variables affecting CWB at each level of analysis. Individual-level factors include the cognitions, emotions, and characteristics of the worker. Group-level factors include climate, perceptions, norms, and social network connections among workers. Organizational factors are the qualities and processes of the larger collective that enfold the groups and include organizational standards, policies, and procedures. Arrows indicating interactions are not shown in Figure 1 for clarity's sake, but variables at each of the three levels interact within and across levels to influence CWB. Rather than assuming, for example, that employee theft is determined primarily by employees' sense of equity, loyalty to the company, or moral principles, a multilevel approach

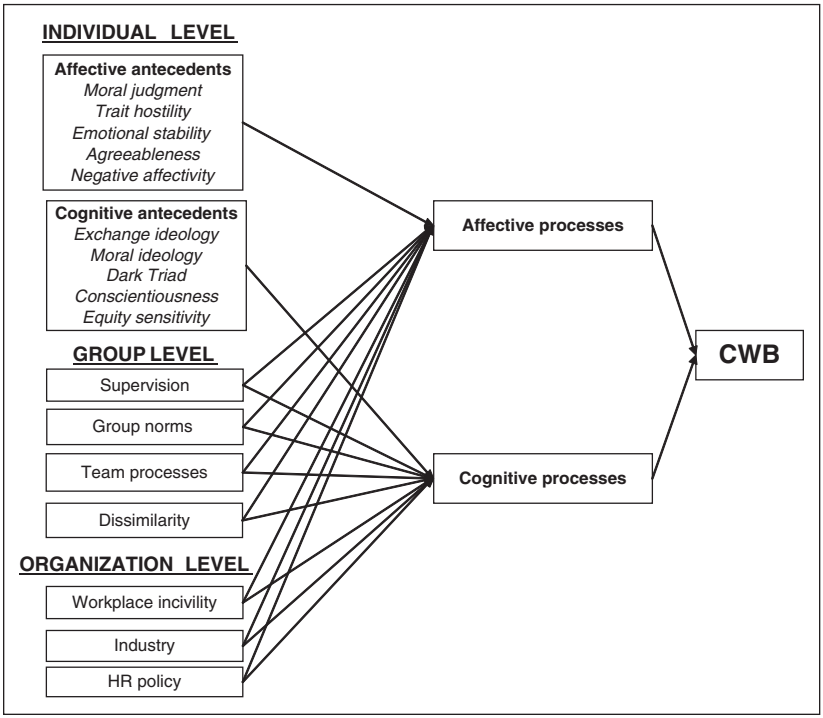

Figure 1. A multilevel model of CWB

assumes that these individual-level variables operate conjointly with such group-level variables as size of the work unit and its cohesion and such organizational-level variables as policies, code, and industry.

A multilevel approach appropriately recognizes the contextual nature of moral behavior, in general, and CWB, in particular. Although early studies of morality tended to focus on individual-level determinants, these initial models have been updated to take into account the significant impact of the context on morality. For example, Haan (1978, 1986) argued that individuals' moral behavior varies because interpersonal demands vary across situations. Krebs and Denton (2005) reviewed earlier studies of moral development to conclude that individual ability to articulate moral reasoning varies by situation rather than age. Ariely (2008) found that when surveillance is low and the opportunity presents itself, individuals stray from honesty in the direction of behaving dishonestly. Spector and his colleagues (2006) found that when

individuals are experiencing high levels of stress, their capacity to regulate their actions and keep them consistent with personal convictions about right and wrong declines. As a result, CWB are more likely to occur (Bruk-Lee & Spector, 2006; Penney & Spector, 2005).

A multilevel approach offers insight into cases in which individuals who are known to be of "good moral character" engage in inappropriate behavior when they join a corrupt group or organization. Studies of group influence, dating back to Le Bon's (1895/2005) studies of crowds, have warned of the corruptive effects of groups and organizations. In contrast, other theorists have identified the salutary effects of groups that work to prevent members with selfish motives from acting on baser impulses. Whether the group acts as a buffer or accelerant to CWB likely depends on a variety of factors. By continuing to focus exclusively on the individual, the field loses the optimal explanation of the antecedents and outcomes of CWB. The lost opportunity of a multilevel perspective is not just speculation. Although few studies exist that apply the multilevel perspective to CWB, the current literature contains several contributions that support further exploration of multilevel theories and methods. The next section contains an overview of this research.

The Multilevel Approach to CWB

The multilevel approach to CWB is more the exception rather than the rule. However, it has been used successfully in a number of studies of maladaptive forms of behavior in organizations (e.g., improper employee service—Liao, Joshi, & Chuang, 2004; workplace accidents—Zohar, 2000), including various forms of CWBs. This recognition of the nested and reciprocal relationships linking individuals, groups, and organizations increases the reliability of findings by specifying more clearly the locus and source of the effects that are reported (Klein, Tosi, & Cannella, 1999). Although there are notable exceptions (e.g., Detert, Treviño, Burris, & Andiappan, 2007; Dunlop & Lee, 2004), most multilevel research on CWB has examined higher level constructs affecting individual CWB rather than the reverse. The norms, climate, leadership, and even the demographics of the work group can influence an individual's engagement in CWB. These factors not only directly influence CWB but also interact with individual differences and perceptions to affect CWB levels indirectly.

Demographic and personality dissimilarity. Researchers have noted that CWB is more likely to be exhibited by individuals with certain demographic characteristics (e.g., Dalal, 2005; Salgado, 2002). In many cases, however, the relationship between a person's ethnicity, sex, religion, age, and so on depends

on the distribution of these qualities within the work place group, with those who are different from others in some way being more likely to exhibit CWB (Avery, McKay, & Wilson, 2008; Ng & Feldman, 2008). Similarly, Liao et al. (2004) discovered that different types of dissimilarity predicted the degree of compliance with organizational norms. Sex dissimilarity, for example, was positively related to interpersonal deviance, as were dissimilarities in introversion and conscientiousness.

Norms and CWB. Group norms about CWB also influence individual behavior. *Norms* are consensual standards that describe what behaviors should and should not be performed in a given context (Feldman, 1984; Forsyth, 2010). They are conceptualized as social structures that exist independently from the individuals who are members of the collective (Durkheim, 1900/1973). People who do not comply with the norms of a situation and who cannot provide an acceptable explanation for their violation are evaluated negatively.

Normative processes can stimulate improved performance (e.g., Kerr & Tindale, 2004; Postmes, Spears, & Cihangir, 2001), but they can also drive individuals to engage in CWB. In the Hawthorne studies (Roethlisberger & Dickson, 1947), for example, some work groups displayed various forms of interpersonal deviance to maintain and enforce a norm of low productivity. Those workers who did not slow their production were bullied, insulted, and socially excluded until they either conformed or exited the organization. More indirect forms of normative influence, such as inferences drawn from observing what types of actions are tolerated within the organization, can also result in CWB, even if these inferences are mistaken ones. Robinson and O'Leary-Kelly (1998) found that individuals model the perceived behavior of their coworkers. However, the perceptions of coworker behavior may be flawed and the inaccuracy of these perceptions can lead to CWB. For instance, a new employee may see a coworker take money out of the register and assume that pilfering is common and therefore acceptable, even if the behavior was counternormative rather than in line with group norms, as the observer assumed.

Research by Bamberger and his colleagues (e.g., Bamberger & Biron, 2007) supports the importance of norms in explaining excessive consumption of alcohol in the workplace. Bacharach et al. (2002) examined the relationship between a substantial number of predictors of drinking, including sense of autonomy at work, estrangement, supervisor's ability, degree of supervision, stress (due primarily to role conflict), sex, age, and seniority. Of all these variables, norms—as indicated by coworkers' permissiveness with regard to drinking and coworkers' level of drinking—best predicted alcohol-related behaviors. In another study on the role of norms in influencing individual CWB, Bamberger and Biron (2007) examined excessive absenteeism. Once

again, superseding age, number of children, and even one's own physical health, the strongest predictor of excessive absenteeism was the group norm toward absenteeism. These findings suggest that many individual-level variables predict CWB but that the best predictor of a worker's CWB are group norms.

Summary

We have argued that CWB is the result of the interaction of multiple variables that operate within and across multiple levels. Be it cyberloafing, bullying, substance abuse, or the many other ways CWB manifests itself, a multilevel perspective offers a more robust account of CWB than any account that stresses the causal influence of variables drawn from only one level of analysis. In the remainder of this article, we wish to add both theoretical and methodological substance to this general conclusion. From its inception, management research has acknowledged the multilevel nature of CWB; however, this acknowledgement generally has not extended to study design and analysis. To support the continuing development of research that cuts across levels, we offer an illustrative theoretical model of individual, group, and organizational causes and consequences of CWB. We also review a number of methods that can be used to assess the thoughts, emotions, and actions of individuals who are embedded in a group and organizational contexts. In addition to assessing the influence of group/organizational context, we also provide ways to examine higher level variables more directly. For example, how does one measure group norms toward counterproductivity? What techniques are available that minimize social desirability when answering sensitive CWB items? We offer several methods for capturing individual CWB and group-level predictors such as CWB norms.

A Multilevel Model of CWB

Our model of CWB contains a variety of predictors at each level of analysis. It is worthwhile to note that although we propose a multilevel model of CWB that contains both group and organization factors, the outcome of the model is individual-level CWB. Higher order counterproductivity, such as collusion, illicit networks, and interdepartmental fraud, are not included because it likely possesses additional sets of antecedents, which we have not specified here. Figure 1 contains the framework of CWB from a multilevel perspective. Consistent with other theories of CWB (i.e., Fox & Spector, 1999; Martinko et al., 2002), the model retains affective and cognitive processes as

the mechanisms that cause CWB. That is, we ascribe to the belief that the decision to engage in CWB is a function of cognitive and emotional processes. However, these emotions and cognitions are affected by variables at the individual, group, and organization levels.

The personality traits of emotional stability, agreeableness, negative affectivity, and trait hostility are individual-level factors that foster CWB through their influence on a worker's emotional processes. Those workers who are better able to control their emotions and that possess an agreeable disposition are less likely to engage in CWB, whereas those that tend to view things in a negative light, or possess high levels of anger and hostility toward others, are more likely to engage in CWB. In addition, we consider individual variations in moral outlook to be an aspect of the emotion-based regulatory system, given increasing evidence (e.g., Haidt, 2007) that suggests that moral judgment is primarily an affect-driven process.

Individual-level predictors of CWB-inducing cognitions are conscientiousness, moral ideology, the Dark Triad (i.e., Machiavellianism, narcissism, subclinical psychopathy), exchange ideology, and equity sensitivity. Two facets of conscientiousness, need for achievement and dependability, serve as restraining forces on CWB, as does moral ideology (Forsyth, O'Boyle, & McDaniel, 2008; Kish-Gephart, Harrison, & Treviño, 2010).With regard to the Dark Triad, the interpersonal manipulation of Machiavellianism, the sense of entitlement of narcissism, and the antisocial tendencies of psychopathy all serve as facilitators of CWB.

Justice perceptions are notably absent from the model. Justice perceptions are often included as an individual-level variable, but this construct can be deconstructed into the group and organizational processes that partially comprise the outcome-to-input ratio (e.g., unfair promotion practices, organizational constraints) and the individual factors of sensitivity to inequity and equity preference. These higher level factors must be perceived by the individual, so we place equity sensitivity at the individual level and the group and organization factors at their respective levels.

Many of the group and organization features that influence CWB affect both emotional and cognitive processes. For example, supervision, if abusive, increases CWB (Mitchell & Ambrose, 2007; Zellars, Tepper, & Duffy, 2002) by affecting cognitions of dissonance (I am verbally abused but expected to perform at high levels) and emotional processes such as job burnout (Tepper, 2000). In addition, team processes such as task and relational conflicts at the team level lead to hostile atmospheres (Raver & Gelfand, 2005) that affect the emotions and cognitions of team members and raise the incidence of CWB.

Figure 1 places norms as a group-level construct related to CWB (Glomb & Liao, 2003; Robinson & O'Leary-Kelly, 1998). As emergent norm theory suggests (Turner & Killian, 1957), situationally specific norms toward a CWB such as drinking (Bacharach et al., 2002) or absenteeism (Bamberger & Biron, 2007) may develop over time in a work setting, and when they do, these negative behaviors will increase in frequency due to conformity. General social norms pertaining to fairness, exchange, and compensation may also encourage CWB in some situations. The norm of reciprocity, when applied in a negative, hostile environment, exacerbates conflict as individuals or factions seek revenge on other members for real or perceived slights (Folger & Skarlicki, 2005; Gibney et al., 2009). Conversely, positive reciprocity can eventually lead to CWB when the loyalty or desire to recompense a coworker comes ahead of one's duty to the company.

We propose that norms operate primarily on the cognitive processes of exchange ideology and equity sensitivity but recognize the importance of emotional and interpersonal processes in normative regulation. Norms provide individuals with information about what types of behaviors are expected in a given situation and those that will likely result in negative sanctions, and so they increase cognitive clarity and reduce uncertainty. Norms also include, however, an evaluative component, so individuals who violate them typically experience negative emotional consequences, such as increased feelings of guilt and shame. Groups also often take steps to increase conformity of members to norms, and, as a result, an individual who does not comply with a standard—even a standard that encourages CWB—may be the target of direct pressuring, shaming, and bullying.

The final group-level CWB antecedent is dissimilarity. As described above, what research does exist found that dissimilarity in both personality and demographics fosters CWB (Liao et al., 2004; Tsui, Egan, & O'Reilly, 1992). We propose that dissimilarity tends to reduce cohesiveness and the strength of emotional bonds with coworkers and therefore will likely lower compliance with social norms pertaining to ethics and increase conflict within the group. These negative consequences of dissimilarity can be reduced if the organization's culture encourages collectivistic values and minimizes distinctions based on tenure, status, and other surface-level indicators of difference (e.g., Chatman & Spataro, 2005).

The final level included in Figure 1 contains the organizational antecedents of CWB. As stated throughout, the individual focus on CWB has led to a somewhat narrow view of its antecedents, but some work at the organization level has yielded fruitful results and we propose that three antecedents in particular influence individual CWB.

The first organization-level construct that affects CWB is human resources (HR) policy. Many researchers have shown that justice perceptions influence CWB (e.g., Dietz, Robinson, Folger, Baron, & Schulz, 2003), and because much of the research on justice is directed at the fairness perceptions of the allocation of outcomes, HR policies can influence CWB in several ways. First, HR policy may interact with a worker's exchange ideology or equity sensitivity to produce perceptions of ambiguity and inequity (Witt, 2006). Workers feeling slighted may engage in CWB that increases the outcome-to-input ratio, such as theft (increasing outcomes), absenteeism (decreasing inputs), or interpersonal CWB (e.g., bullying) directed at the referent person whom they perceive as having a more favorable outcome-to-input ratio.

Second, just as an uncivil work group can influence individual CWB within the group, an entire organization that exhibits workplace incivility affects interpersonal and intergroup relationships. Negative relationships may serve to promote CWB across the entire organization (Andersson & Pearson, 1999). Workplaces that ignore or even condone hypercompetitiveness, or promote a *winner takes all* mentality as long as it achieves an organizational goal (e.g., sales, profits), may be increasing both intended goals and CWB. In such situations, CWB may manifest itself in the form of dishonest interactions with external and internal customers, backstabbing of coworkers, or fraudulent behavior that appears to achieve goals. Incivility in the workplace can play on both cognitive processes (e.g., everybody lies to customers, so I need to lie, too, or I will fall behind) and affective processes (e.g., anger leading to an argument with a coworker).

The final organizational antecedent of CWB is industry. Although CWB can be expressed in a variety of ways and no industry is immune to all CWB, certain industries are inherently prone to CWB due to increased opportunity to engage in such behavior or as a result of the type of individual drawn to that industry. For example, someone can only engage in cyberloafing (Lim, 2002) with a computer and an internet connection. Someone can only discuss confidential information outside of work when he or she has access to confidential information. It is also possible for an entire set of CWBs to be absent in certain jobs. For example, interpersonal counterproductive behaviors require at least one other coworker. Therefore, sole proprietorships, telecommuters, or occupations in which nearly all of the time is spent alone likely experience fewer interpersonal CWBs for no other reason than reduced opportunity for engagement. Conversely, some industries may promote employee misbehavior through an inherent lack of oversight and increased opportunity to abuse power. For example, the base rate of falsifying an expense report or receipt for reimbursement is relatively low in general (Bennett & Robinson, 2000).

However, Jelinek and Ahearne (2006) reported that 60% of sales managers have caught representatives falsifying these types of reports. Law enforcement is another field with little supervision and high authority. Coupled with individual traits such as narcissism, this career can lead to extensive corruption and abuses of power (Barker & Roebuck, 1973). At present, industry characteristics as an organizational antecedent of CWB is an understudied area, and little is known about how such characteristics influence cognitive or affective processes.

In summary, the model presented here highlights three levels of analysis that influence CWB that range along the micro–meso–macro continuum. Asked why an individual embezzles, consistently creates conflict with others, or sacrifices the good of the company for personal gain, a multilevel approach does not stop at the micro level by considering only the qualities, characteristics, and actions of individuals. A multilevel approach considers meso-level processes, including supervision, norms, team processes, and composition, as well as such macro-level factors as workplace incivility, the type of industry, and the HR policies of the organization. Our model extends this literature by incorporating broader affective and cognitive processes as facilitators to engage in CWB and crosses levels to show how group and organizational factors influence the cognitive and affective processes.

The tendency of CWB research to stay at the individual level of analysis is partly due to the measurement and analytical challenges of the construct and its higher order antecedents (e.g., norms toward CWB). Next, we review the challenges of measuring and analyzing CWB in a multilevel context and offer suggestions that may help to alleviate some difficulty as well as to provide more accurate results.

Measurement and Analytical Issues in Multilevel Models

CWBs are deliberate actions that harm the group or organization. In some cases, these actions are performed by a single person, alone, but in most cases, CWBs occur within a collective context; they are individual behaviors performed within a group context rather than individual ones. Moreover, a variety of factors serve as antecedents to CWBs and they cut across levels of analysis, with some pertaining to relationships among individuals and others connecting individuals to the group itself. The complexity of this multilevel process may be daunting for researchers, who are more comfortable measuring (a) individual-level predictors of CWBs, such as personality traits and (b) individual's reports of their CWBs (Berry et al., 2007).

The remainder of the article is devoted to measurement and analysis issues that confront researchers wishing to adopt a multilevel perspective on CWB. We first review problems stemming from direct self-report CWB measures and offer suggestions that could be implemented within any study of CWB. The rationale for presenting our recommendations here is that without an accurate measure of CWB, it is futile to attempt any model, multilevel or otherwise, of CWB. Next, we consider some alternative methods for measuring CWBs, including procedures that focus on base rates or shifts of referent from the individual to the group. We close by considering several techniques for measuring and analyzing several proposed group-level antecedents, such as group norms toward CWB.

In our discussion of these topics, we do not address broad areas such as unreliability or nonnormality that are common to most social science measures. Hence, we omit a detailed discussion of individual-level CWB predictors, such as conscientiousness. In addition, we do not discuss how to measure organization and industry antecedents such as HR policy or industry grouping (e.g., Standard Industrial Classification, or SIC, code). Our reasoning is that in many cases, industry or specific policies within an organization are objective and need minimal elaboration. In addition, we do not provide an overly technical review of the various research methods and statistical tools suggested. Instead, we focus on the unique application of several measurement and analysis techniques to the study of CWB. Where appropriate, we direct the reader to sources that provide technical assistance.

Alternative Measures and Individual Issues Related to CWB

Society, in general, condemns CWBs, so researchers must often eschew the traditional methods, such as the self-report survey, for more indirect, creative, and, at times, invasive methods than direct self report. Employees will, if asked, complete self-report surveys of CWBs, but their responses may be influenced by fear of reprisal, embarrassment, and social desirability (Podsakoff & Organ, 1986; Randall & Fernandes, 1991). Despite all assurances of anonymity by the researcher, respondents often feel an internal demand to underreport socially stigmatized behaviors, but steps can be taken to decrease these pressures. None of these techniques are foolproof; thus, it is important to consider carefully which technique is most appropriate for a given situation. However, some of these techniques may be more generally applicable than others.

Statistical control and the use of social desirability measures. The first and most commonly applied technique is a statistical correction or the inclusion of a

social desirability measure. If the researcher is aware that social desirability interferes with responding, he or she can incorporate a social desirability measure and/or use a technique such as structural equation modeling (SEM) that allows for the extraction of a common method factor. It is preferable to use both techniques together rather than using SEM alone, as without at least one marker variable (a validated social desirability item), it is unclear what is extracted by the method factor (Lindell & Whitney, 2001; Williams & Brown, 1994). Even with marker variables or hierarchical regression where social desirability is controlled, it may be that the removal of social desirability removes substantive CWB variance. The process of controlling for any variable removes variance within the CWB measure and any substantive variance between the social desirability items (e.g., I can remember "playing sick" to get out of something, Crowne & Marlowe, 1960) and the CWB items (e.g., Stayed home from work and said you were sick when you weren't; Spector, et al., 2006) is extracted. Thus, CWB is residualized and this residual CWB may or may not be theoretically the same as CWB. A detailed discussion of pros and cons of social desirability measures in practice can be found elsewhere (e.g., Podsakoff & Organ, 1986). However, across all of the articles reviewed on the topic of social desirability, none have argued for across-the-board control of this construct, and, as such, treating social desirability as a definitive solution to CWB measurement is inappropriate.

Reaction time measures. Richardson, Simmering, and Sturman (2009) reasonably conclude that, in general, it is better to design around a problem like social desirability rather than remove it via analysis. Applied to CWB, this advice suggests using a method that will extract more information from respondents, either by decreasing their control over their responses or by increasing their feelings of anonymity and protection. Reaction time assessments provide an example of one such method. The activation-decision-construction model (Walczyk, Roper, Seeman, & Humphrey, 2003) proposes that when a question of a sensitive nature enters the articulatory loop (activation component), the truth receives the most activation in the semantic memory and episodic memory, and honest answers are delivered quickly as compared with a lie. When lying, individuals must come to a decision to lie and generate a list of plausible lies. The individual then must go through a series of iterations evaluating truth alternatives and evaluating their effectiveness based on their social context prior to responding. The process is fast but still significantly slower than using the honest answer. Reaction times have been successfully applied to personnel selection (e.g., Walczyk, Mahoney, Doverspike, & Griffith-Ross, 2009) and many social-psychological phenomena through its use with the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998).

These techniques have clear application to CWB research as the decision to not divulge engagement in CWB should take longer than a true response.

Randomized response technique (RRT). With the RRT, respondents can be assured that their personal responses cannot ever be known to the researcher, or to external audiences as well. The researchers, when using the method (Warner, 1965), give a participant some type of randomizing device (usually a coin). They then present the respondent with two items labeled as "heads" and "tails;" the "heads" item is a sensitive behavior (e.g., spreading rumors about a coworker) and the "tails" item is an innocuous behavior (e.g., eating at a restaurant). The participant flips the coin and if "heads," he or she answers the item about the sensitive behavior, and if "tails," the respondent answers the item about eating at a restaurant. This process is repeated for all pairs of items. The total score is computed and based on probability theory, higher scores indicate higher CWB. As only the participant knows which item he or she is responding to, the pressure to respond in a socially desirable way is reduced.

RRT has been successfully applied to many sensitive behaviors such as substance abuse (Goodstadt & Gruson, 1975), academic cheating (Scheers & Dayton, 1987), and theft (Dalton & Metzger, 1992) and has demonstrated validity in measuring several other sensitive behaviors (Tracy & Fox, 1981). The advantage of this technique is that respondents are more likely to answer honestly to each item, as only the respondents know if they are answering the "heads" item or the "tails" item. However, there are two disadvantages to RRT worth noting. First, the RRT introduces random error in the form of the coin flip. Although less serious than systematic error (e.g., socially biased responding), this random error decreases statistical power as the "heads" questions can reduce the classical test theory ratio of true score to error in the observed score. Put differently, what happens if someone flips all or mostly "tails"?

This problem can be partially alleviated by using scales of reasonable length. For instance, the Bennett and Robinson (2000) Workplace Deviance Scale has 24 items and, based on the binomial probability distribution, the likelihood of someone answering fewer than 10 CWB items is only 15%. The random error associated with the "tails" questions can be reduced further through the use of a different randomizing device with a higher probability of answering the CWB item than a coin flip (50% probability). For instance, a die could be used; participants will answer the CWB items if they roll a 1, 2, 3, or 4 (67% probability) and only answer the innocuous item if they roll a 5 or 6. In this scenario, the probability of answering fewer than 10 CWB items on a 24-item scale is 1%. The researcher should be aware that the error generated by the RRT reduces statistical power considerably and traditional reliability estimates such as Cronbach's alpha will most likely be lower than

traditional threshold values (i.e., .70). Therefore, larger samples may be needed to compensate for this issue.

Referent shift. As individuals may not wish to describe their own misbehavior, and as CWB often occurs in a group/organization context, they can be asked to describe others' actions rather than their own (e.g., Stewart, Bing, Davison, Woehr, & McIntyre, 2009). The referent-shift method attempts to reduce the pressure of self-incrimination, but it is likely that describing the misdeeds of friends and coworkers also leads to underreporting. Furthermore, this technique still contains an element of social desirability, as it requires the individual to admit to being a witness to CWB. An individual that observed fraud or theft in the workplace and took no action to stop the CWB may still feel uncomfortable reporting his or her observations. In addition, the referent-shift method results in a loss of information because not all CWB is witnessed. Unlike CWB's antithesis, organizational citizenship behavior, individuals often engage in CWB covertly. Even interpersonal CWB such as bullying or telling of inappropriate stories/jokes may be done without knowledge of the responding coworker. As a means of capturing individual-level CWB, this technique may have limited applicability, but referent shift may be effective in establishing the norms of CWB at the group level. Here the referent is not another worker but instead the overall CWB climate (e.g., How acceptable is it in your workplace to play a mean prank? or How often do you hear a coworker curse at another person?).

Unmatched count technique (UCT). If a researcher is interested in establishing base rates (something largely absent from the CWB literature), UCT (Wimbush & Dalton, 1997) is an excellent tool that uses self-report and avoids much of the pressure to provide socially desirable responses. UCT surveys two groups from the same population. The first group is asked the frequency they have engaged in three innocuous behaviors (e.g., taken a nap, been to the movies, or traveled out of state). The second group is presented with the same three behaviors plus a fourth item which is sensitive (e.g., insulted a coworker). Respondents in both groups indicate how many of the behaviors they have engaged in over a certain amount of time (e.g., week, month), and the difference in scores between the first and second groups establishes the base rate of the sensitive behavior and can be expressed as a percentage. For instance, if the mean of the first group is 2.00, then, on average, the members of the first group engage in two of the three behaviors over the specific time period. If the mean of Group 2 is 2.25, then, on average, the members of the second group engage in two of the four behaviors over the specific time. The difference between the two groups is the base rate of the sensitive behavior. Here, it is .25, thus the base rate of the sensitive behavior is 25%. What is

noteworthy is that at no time did respondents in the second group have to disclose their participation in the sensitive behavior. That is, when a respondent in the second group answers that he or she has engaged in three of the four behaviors, only the respondent knows if the sensitive behavior is included.

This technique has the benefit of being applied to the full CWB construct (i.e., an entire CWB scale). It also has the drawback that even with thorough explanation, some may still doubt the assurances of anonymity and believe that their responses can be somehow traced back to them. Perhaps, as a result of this skepticism, some have found similar base rates between self-report and UCT (i.e., Ahart & Sackett, 2004), which may be an indication that the UCT suffers from the same suppressors of direct self-report in certain situations. However, research using this technique has been shown to be effective in establishing base rates of employee theft (Dalton, Wimbush, & Daily, 1994), excessive drinking (LaBrie & Earleywine, 2000), hate crime victimization (Rayburn, Earleywine, & Davison, 2003), and workplace deviance (O'Boyle, 2010). With regard to the latter study that used an entire scale, the UCT provided base rates that were, on average, 21% higher than base rates found through direct self-report on the Bennett and Robinson measure.

Summary

CWB is one of the most difficult constructs in management to measure. Social desirability, lack of awareness of one's own misdeeds (e.g., I am not insulting a coworker, I am just joking around), and fear of self-incrimination all suppress the reporting of CWB. We offer both methodological and statistical techniques that can aid a researcher in measuring individual-level CWB. We also suggest that these techniques are not mutually exclusive, and the incorporation of multiple measures and/or reporters (e.g., peer, supervisor) can help "triangulate" on the CWB construct.

Measuring Group-Level Antecedents

In addition to the adequate measurement of CWB, capturing group-level antecedents presents another set of challenges that should be considered in a multilevel model. Many group- and organization-level constructs can be measured with an individual response. For example, an individual response is sufficient to determine the industry in which a group works or that industry's pay structure. These data are objective, show little heterogeneity among group members, and are referred to as *global constructs* (Klein & Kozlowski, 2000). However, some of the group-level antecedents in Figure 1 are not global ones,

and an individual response is insufficient to measure the construct. Instead, ratings must be taken from multiple individuals within the same group or organization and combined to form a group-level construct. Aggregation of individual-level processes to draw inferences about higher level constructs is a critical step in multilevel research.

Dissimilarity. For some of the group- and organization-level constructs, aggregation can be surprisingly complex. The first group-level antecedent of CWB is dissimilarity to other members. Constructs that measure dissimilarity or variability within a group are referred to as *configural constructs* (Klein & Kozlowski, 2000). Generally, dissimilarity is operationalized as some absolute mathematical distance from the group such as the Euclidean distance (e.g., Sacco & Schmitt, 2005). For example, using an absolute distance calculation, Liao et al. (2004) found that racial dissimilarity was negatively related to organizational deviance. Thus, the greater the dissimilarity to coworkers' race, the lower the CWB of that individual. This fairly straightforward way of measuring dissimilarity has the drawback of assuming that dissimilarity operates in a linear fashion where dissimilarity on one side (e.g., being the only male working in an all-female group) influences CWB in the same way as dissimilarity on the other (e.g., being the only female working in an all-male group).

We offer two suggestions with the measurement and analysis of dissimilarity. First, the operationalization of dissimilarity is not constant across all research contexts. Dissimilarity may refer to the separation, variety, or disparity of the individual from the group (Klein & Kozlowski, 2000). When operationalizing dissimilarity, a researcher should first define the meaning of the construct, what shape or pattern it could take on, and the likely consequences that different patterns will have on CWB (Klein & Kozlowski, 2000). Second, absolute values of dissimilarity are only appropriate when there is theoretical and empirical support that dissimilarity operates on CWB in the same way at both ends of the spectrum. When evidence suggests that this is not the case, then the differences in how a worker's dissimilarity operates on CWB needs to be preserved. To preserve this dissimilarity in the analysis, we suggest the calculations of difference scores (i.e., polynomial regression) proposed by Edwards and colleagues (see Edwards, 2001 for a review). To our knowledge, this is the only available technique that examines dissimilarity while preserving the differences across the spectrum of diversity.

Group norms, team processes, and workplace incivility. In contrast to dissimilarity and other configural constructs are *shared constructs*. With shared constructs, the interest is in a collective view of the construct. Shared constructs reflect a unified vision of group-level processes such as team viability (Tekleab,

Quigley, & Tesluk, 2009) or group conflict (Bayazit & Mannix, 2003). Two aspects of shared constructs require special attention when applied to a multilevel CWB model. The first aspect is how to identify the work group. Most teams are clearly identified through their titles or functions, but there are no insult committees charged with verbally attacking coworkers or theft think tanks that plan how to bilk the company. CWB is often engaged in covertly and likely does not follow the organizational chart. Defining the peer group to which an individual belongs and identifying its network structure is crucial to understanding normative pressure to engage in CWB. Second, even with the knowledge of the normative work group, there is still the problem of how to measure norms for sensitive behaviors. Past work on group norms has taken the average of the group on some score, used game theory, or had the group members discuss what their norms are for various behaviors (Camerer & Fehr, 2004; Manning, Valliere, & Wang, 1999). However, these techniques may not be adequate due to the aforementioned difficulties with measuring sensitive behaviors. The following are some alternative methods for identifying the work group and measuring group norms toward CWB.

Identifying the peer group of a worker. Most multilevel modeling (MLM) studies rely on the organizational chart as a guide to placing individuals into groups. This form of grouping captures higher order effects attributable to one's immediate work group and supervisor. The organizational chart also is effective when groups are clearly defined and there is little crossover. Military units (Chen & Bliese, 2002) and union shops (Hammer, Bayazit, & Wazeter, 2009), where there are clear divisions, significant hierarchy, and geographical barriers to interaction with other groups, make determining membership relatively easy. However, CWB may be attributable to something other than the immediate work group or supervisor. For instance, individuals socializing with coworkers and supervisors from other departments may engage in CWB due to the norms of their social group rather than the work group indicated by the organizational chart. Small groups of workers may conspire to defraud the company, meet at bars on their lunch breaks, punch each other in when arriving early, and socially exclude and bully outsiders. None of these groups are found on an organizational chart, but these groups do exist and exert pressure on members to conform by engaging in CWB. Capturing this higher order effect requires a different grouping mechanism. We propose social network analysis (SNA) as a grouping technique to identify work groups.

SNA and multilevel CWB. SNA explains behavior by examining the type and structure of relationships. Location in a network, ties to others, and the structure of the network itself all affect an individual's behavior. SNA has been applied to criminal networks and conspiracies (Baker & Faulkner, 1993),

as well as legitimate organizations (Brass, Butterfield, & Skaggs, 1998). When studying CWB, the interest is on how network relationships and structure facilitate or impede organizational functioning. We propose that patterns of communication and an understanding of a network's structure aid researchers in finding not only individual deviants but also pockets of CWB-prone cliques and groups.

Covert behaviors engaged in by informal groups can be detected with SNA. SNA can be used to detect cliques and clusters of workers that can then serve as the normative group. The mechanics of SNA involves having respondents report that they have relationships with or use an objective measure of communication (e.g., email records). Based on whom an individual associates with, information about his or her social network is gained and these individuals serve as the normative group. By both capturing the multilevel nature of organizations and the informality and covertness of CWB with SNA, we echo the sentiments of several management scholars (e.g., Klein & Kozlowsky, 2000) and foresee the crossover of SNA and multilevel modeling as one of the most fertile areas of research in CWB and management as a whole. The procedures used in SNA are described in great detail in a number of seminal works (e.g., Scott, 1988; Tichy, Tushman, & Fombrun, 1979; Wasserman & Faust, 1994).

Measuring the peer group's norms toward CWB. Even after identifying the peer group through a network analysis, there is still the challenge of measuring the norms toward sensitive behaviors. If measuring a group-level concept, such as organizational norms, researchers must check for group-level interdependencies by computing intraclass correlations (ICC), average deviation scores (e.g., r_{WG} scores), or within-and-between analysis (WABA) statistics. These analyses will indicate if the individuals should serve as the unit of analysis or if interdependency among the members' data make aggregated group-level analyses more appropriate. Advanced statistical procedures, such as hierarchical linear modeling (HLM), are also capable of disentangling cause–effect relationships and processes that operate simultaneously at two or more levels. However, even if consensus indexes indicate a high degree of social consensus, the use of an average self-reported CWB score may still not be appropriate, as social desirability and the issues highlighted in the previous section can bias responding.

Conclusion

Rotundo and Sackett (2002) identified three components of job performance—task performance, citizenship behaviors, and counterproductive behaviors.

There exists a tremendous amount of research identifying, predicting, and improving task performance, and beginning in the 1980s (Bateman & Organ, 1983; Smith, Organ, & Near, 1983), research into the antecedents and outcomes of citizenship behavior expanded rapidly. However, CWB has only begun to generate significant attention. As a result, much is unknown about the trait and environmental motivation to engage deliberately in behaviors that harm the organization or its members and what effect these behaviors have on other organizational behavior and human resources outcomes. Extant research has attempted to explain CWB with perceptions of the work environment and individual traits, such as personality. This approach has yielded a great deal of information about the motivation to engage in CWB, but a view that incorporates the inherently nested nature of workers within groups within organizations provides greater insight.

Moving forward we see several areas of fruitful CWB research. The proposed model focuses on individual-level CWB, but in many cases, CWB may itself aggregate to a higher order construct. Group CWB may include collusion, bullying through ostracizing a disliked worker, collective insubordination against a supervisor, and so on. These behaviors are just as costly if not more so to an organization, and more research is needed to determine its causes and outcomes. We would also see affect, at the group or individual level, as an integral part of many CWBs. As affect is more difficult to articulate than cognitions in many instances, this area requires more research on alternative measures and measurement techniques. Finally, the knowledge economy has fundamentally shifted how work is done (Powell & Snellman, 2004). Technology will serve as both an accelerant (e.g., cyberloafing) and insulator (e.g., information monitoring) of CWB. Telecommuting puts geographical distance between workers and may decrease some forms of CWB (e.g., violence) while increasing other forms due to decreased supervision. Thus, technology may make some CWBs obsolete as well as result in the arrival of new CWBs.

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