An Integrative Typology of Personality Assessment for Aggression: Implications for Predicting Counterproductive Workplace Behavior

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This study presents an integrative typology of personality assessment for aggression. In this typology, self-report and conditional reasoning (L. R. James, 1998) methodologies are used to assess 2 separate, yet often congruent, components of aggressive personalities. Specifically, self-report is used to assess explicit components of aggressive tendencies, such as self-perceived aggression, whereas conditional reasoning is used to assess implicit components, in particular, the unconscious biases in reasoning that are used to justify aggressive acts. These 2 separate components are then integrated to form a new theoretical typology of personality assessment for aggression. Empirical tests of the typology were subsequently conducted using data gathered across 3 samples in laboratory and field settings and reveal that explicit and implicit components of aggression can interact in the prediction of counterproductive, deviant, and prosocial behaviors. These empirical tests also reveal that when either the self-report or conditional reasoning methodology is used in isolation, the resulting assessment of aggression may be incomplete. Implications for personnel selection, team composition, and executive coaching are discussed.

Keywords: implicit aggression, conditional reasoning, personality, counterproductive behavior, personnel selection

Well-developed self-report questionnaires serve as useful measures of personality due to their sound psychometric properties, their rapid assessment of numerous job-relevant traits, and their ability to predict various dimensions of job performance (Barrick & Mount, 1991; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Schmidt & Hunter, 1998). However, individuals possessing negative attributes, such as aggression, may be reluctant to reveal these attributes to others and, thus, may fail to endorse self-report items assessing these attributes. In addition, people often want to believe the best about themselves, regardless of their negative attributes, and thus can be limited in their ability to give accurate item endorsements when holding inaccurate positive self-perceptions. In fact, with respect to the assessment of aggression, there is empirical evidence that suggests that aggressive personalities are often accompanied by inflated, positive, and inaccurate self-perceptions (Baumeister, Smart, & Boden, 1996).

Regardless of the potential source of inaccuracy, such as the reluctance to give accurate responses (e.g., impression management) or the lack of accurate introspection (e.g., self-deception), direct self-report measures may capture only one component of a personality trait, especially when used to assess a socially undesirable trait such as aggression (Greenwald & Banaji, 1995; McClelland, Koestner, & Weinberger, 1989; Paulhus, 1984). Self-reports concentrate on measuring explicit or conscious cognitions, which include self-perceived characteristics, or self-attributed emotions, values, beliefs, and behaviors (see McClelland et al., 1989). Therefore, although self-reports capture substantial components of personality (Hogan, Hogan, & Roberts, 1996), they may leave unmeasured, and thus omitted from assessment, the implicit or unconscious cognitions that also serve to structure aggressive personalities.

As a result of being hidden from introspection, implicit cognitions cannot be assessed by self-report (see Greenwald & Banaji,
1995; Nisbett & Wilson, 1977). Greenwald and Banaji (1995) have noted that, to measure implicit cognitions, “indirect measurements are theoretically essential . . . [because they] . . . neither inform the subject of what is being assessed nor request self-report concerning it” (p. 5). Winter, John, Stewart, Klohn, and Duncan (1998) concurred with this opinion, asserting that “motives (like other cognitions) may often be implicit, that is, not accessible to consciousness and therefore measurable only by indirect means” (p. 232). Perhaps an indirect measurement, when integrated with a self-report, might enhance the assessment of aggressive personalities.

The current work pursues this possibility first by describing an indirect measurement of implicit aggression, known as the Conditional Reasoning Test of Aggression (CRTA; James, 1998). A new theoretical typology of personality assessment for aggression is subsequently generated by integrating this indirect measurement of implicit aggression with explicit aggression as measured by self-report. The empirical validity of the typology is then tested in both laboratory and field settings, with various counterproductive and deviant behaviors as criteria.

### Conditional Reasoning Tests of Aggression

The conditional reasoning technique was designed to circumvent the ego-enhancing biases that can detract from the accuracy of self-reports by making the implicit self-justificatory components of these biases the subject of measurement. This is possible because people with different dispositional tendencies tend to use different unrecognized biases in their reasoning when attempting to justify their actions. These biases are unrecognized to the extent that people are typically not aware of their own tendencies to grant rationality to reasoning that justifies and sustains the expression of their own motives while discounting reasoning that supports the expression of motives incompatible with their own. Reasoning is said to be “conditional” when the likelihood that a person will consider a behavior to be reasonable depends on the strength of that person’s inclination to engage in the behavior (James, 1998).

In developing the CRTA, James and colleagues located six primary implicit biases emphasized in aggression research that serve to rationalize aggressive acts. Because these implicit biases are used by individuals with aggressive dispositions to justify behaving aggressively, James (1998) has referred to these biases as “justification mechanisms” (p. 131). Justification mechanisms (JMs) are defined as implicit biases that define, characterize, and influence reasoning so as to enhance the rational appeal of behaving aggressively. The JMs for aggression are hostile attribution bias, potency bias, retribution bias, victimization by powerful others bias, derogation of target bias, and social discounting bias. Because each of these JMs has been described in detail elsewhere, we describe only one here—the hostile attribution bias—and refer interested readers to James et al. (2005) and Burroughs and James (2005).

The hostile attribution bias is the tendency to see harmful intent as the motivation behind others’ actions, such that even helpful acts may be viewed as having covert agendas designed to intentionally inflict harm. To use an example, organizational newcomers are often advised by coworkers with more tenure. Newcomers with hostile attribution biases may interpret the advice as condescending and demeaning because of their predilection to attribute hostile motives to the acts of others. As such, they may engage in disrespectful actions toward these tenured coworkers and attempt to “justify” their disrespectful actions by construing them as a form of warranted retaliation against their tenured coworkers’ “condescension.” Alternatively, prosocial organizational newcomers who lack this hostile attribution bias will tend to assume that advice from coworkers is motivated by constructive intentions until proven otherwise. Consequently, they will respond constructively by following the advice if deemed appropriate and displaying gratitude for the information given. Therefore, in contrast to prosocial individuals who lack these JMs, individuals who harbor one or more JMs within their reasoning framework have an implicit cognitive readiness to aggress (James et al., 2005).

Given the propensity of aggressive individuals to believe that their reasoning is rational and objective, and the corresponding tendency for them to engage in a form of reasoning that is conditionally biased in favor of their aggressive behavioral tendencies (Averill, 1993; Baumeister et al., 1996; Nisbett, 1993), it is possible to design critical reasoning items that elicit this conditional tendency (James, 1998). These items appear to respondents as inductive reasoning problems designed to measure reasoning skills, and indeed they are inductive reasoning problems to which an incorrect response can be given. However, these problems are constructed such that respondents with different implicit cognitive biases tend to solve the problems in different ways. For each CRTA item, an evocative stem with a set of premises is given and illogical distractor responses are presented along with two other logical response alternatives. One of the logical response alternatives is designed to reveal the implicit cognitive readiness to aggress, whereas the other logical alternative is designed to reveal the implicit cognitive readiness to be prosocial. When the number of aggressive CRTA item responses is counted, and the number of prosocial responses is subtracted from this count, the extent of the respondent’s reliance on the JMs that enhance the logical appeal of aggressive behaviors is revealed. Thus, by using this conditional reasoning technique, an implicit cognitive readiness to aggress can be inferred.

Two versions of the Conditional Reasoning Test (CRT) have been developed to measure aggression: a paper-and-pencil format (the CRTA) and a verbal–visual format presented on a television by means of a VCR (the VCRTA). Both the CRTA and the VCRTA determine whether an individual consistently prefers aggressive or prosocial response alternatives. The CRTA and the VCRTA, administered 2 months apart, have demonstrated a correlation of .82 (James et al., 2005). Also, the same items taken across different formats demonstrate percent agreement ranging from 64.9% to 94.6%, with a mean agreement of 81.4% (Green, 1999). These results demonstrate that the format of administration leaves largely unchanged the measure of implicit aggression.

As individual differences in aggression have been shown to be one important determinant of counterproductive behaviors (Chen & Spector, 1992; Jockin, Arvey, & McGue, 2001; Neuman & Baron, 1998; Spector, 1975), the validity of the CRTA and VCRTA has been investigated using various indicators of counterproductivity and performance. To date, CRTs have been shown to predict unreliability among temporary employees ($r = .43, p < .05$), absenteeism among package handlers ($r = .34, p < .05$), turnover among retail salespeople ($r = .28, p < .05$), performance ratings of patrol officers ($r = - .49, p < .05$), and physical
altercations among basketball players ($r = .38, p < .05$; James et al., 2005). Certainly, when combined, these results provide evidence of validity for the CRTA and the VCRTA and suggest that these measures are capturing one component of aggressive personalities.

As stated above, self-reports capture substantial components of personality, but these are the explicit or conscious cognitions that serve to structure personality (Greenwald & Banaji, 1995; McClelland et al., 1989). Alternatively, conditional reasoning was designed as an indirect measure of implicit cognitions that are not accessible to self-reports but that also serve to structure personalities (Greenwald & Banaji, 1995; James et al., 2005; Nisbett & Wilson, 1977). Consequently, the integration of these separate methodologies should allow for an assessment of the complexities of aggressive personalities that cannot be captured via the independent use of these techniques.

**Integrative Typology of Aggression**

We turn now to a proposal of how conditional reasoning might be joined with the most frequently used measure of personality—self-reports (Schwarz, 1999)—to predict behavior. The current approach expands on theory and research by Winter et al. (1998), who demonstrated that explicit self-reports of extraverted behaviors (traits) serve to channel how implicit power and affiliation motives are expressed behaviorally. Thus, the current work extends this concept of integrative assessment to the personality construct of aggression, which has not yet been examined in this fashion. For the integrative typology, it is assumed that both self-report and conditional reasoning methodologies quantify components of dispositional aggression, but separate components. As noted earlier, self-reports focus on explicit components of personality, such as self-perceptions of behaviors, emotions, and preferences. Alternatively, CRTs focus on implicit components, such as the unconscious tendency to rationalize behavior.

We built a theoretical typology of aggression that integrates explicit cognitions from self-reports with implicit cognitions from CRTs (see Table 1). Example items from well accepted self-reports of aggression and hostility are presented at the top of the table (e.g., Jackson’s Personality Research Form [PRF], Costa & McCrae’s Revised NEO Personality Inventory [NEO-PI-R]). These items are used to measure self-perceptions of anger, hostility, and aggression. The JMs for aggression are presented on the left side of the table, above contrasting prosocial assumptions. The four inner cells of the table reflect an attempt to build a typology for aggressive and nonaggressive personalities by integrating these two sources of assessment information. This integration resulted in the creation of descriptions of pure types, or of prototypical individuals within each cell. In truth, a continuum exists for both self-report and conditional reasoning scale scores, and crossing these two continua generates a large number of cells representing degrees of variation between the prototypes. However, to simplify the presentation, we have omitted these intermediate cells.

The upper right cell contains individuals who view themselves as aggressive and rely on the corresponding JMs to enhance the logical appeal of behaving aggressively. Members of this cell were termed **manifest aggressives** to indicate that self-perceptions and conditional reasoning proclivities are congruent, and this congruency suggests that these individuals see themselves as being justifiably aggressive. Given the JMs within their reasoning framework, they are likely to interpret the acts of other persons and organizations as having malevolent intent. Consequently, manifest aggressives are cognitively prepared to react aggressively, and they view their own aggressive behaviors as the justifiable reactions of oppressed persons seeking retribution or even self-defense. Manifest aggressives are likely to construe their own aggressive behaviors as assertive or courageous rather than as belligerent, hostile, or rude. Thus, these individuals were predicted to engage in active counterproductive behaviors (e.g., lying, theft, verbal assault).

The lower left cell of Table 1 contains individuals who view themselves as being nonaggressive and who tend to reason using prosocial assumptions that support nonaggressive behaviors. In this case, nonaggressive self-perceptions are congruent with prosocial reasoning proclivities, and thus members of this cell were termed **prosocials**. Prosocial individuals have internalized societal norms and lack the tendency to analyze situations in ways that justify acting aggressively. Prosocials are prone not only to discern and refute reasoning based on JMs for aggression but also to offer reasoning engendered by constructive and prosocial beliefs. Consequently, they tend to favor cooperation and harmony over vengeance and retribution. Thus, these individuals were predicted to display cooperative and constructive behaviors (e.g., organizational citizenship behaviors [OCBs]) and to avoid engaging in aggressive acts.

The upper left cell contains individuals who see themselves as nonaggressive but have the JMs in place to enhance the rational appeal of aggressive behaviors. Members of this cell were referred to as **latent aggressives** to indicate that they have the implicit cognitive readiness to aggress and yet explicitly perceive themselves as prosocial. This incongruent pattern suggests that although these individuals are likely to interpret the actions of others as having malevolent intent, and thus are likely to retaliate, they will do so in ways that maintain their inaccurate self-perceptions of being nonaggressive. Consequently, these individuals were not predicted to display active forms of hostility and deviance that are easily characterized as aggressive (e.g., a physical attack). Rather, their implicit tendency to aggress should be expressed in subtle ways that are easily misrepresented as being nonaggressive, such as passive-aggressive acts (e.g., giving someone the “silent treatment”) and indirectly aggressive acts (e.g., retaliating against an employer by filing a complaint).

Finally, the individuals in the lower right cell of Table 1 view themselves as aggressive even though they have the implicit tendency to reason in terms of prosocial values. Thus, they are likely to make prosocial assumptions when interpreting the actions of others and to respond in cooperative ways but to be overly self-critical of their own intentions. Individuals in this cell are likely to be distrustful of their own instincts and motives that they explicitly perceive to be aggressive and to compensate for this lack of self-trust by being highly self-monitoring. Therefore, although these individuals were predicted to behave prosocially, their behavior was also predicted to have a strong sense of self-control, and to lack spontaneity, perhaps to the point of being rigid. Individuals in this cell were termed **overcompensating prosocals** to indicate their added reliance on inhibitory tendencies to generate and maintain prosocial behaviors.
## Hypotheses

These four prototypes of aggressive and nonaggressive personalities view social and organizational relationships in very different ways, and thus, they should also behave very differently. Manifest aggressives and latent aggressives should engage in counterproductive behaviors indicative of retaliation, and they should be more likely to do so than both prosocials and overcompensating prosocials. However, latent aggressives, preferring to manifest their implicit aggression in subtle ways to maintain their nonaggressive self-perceptions, should be less likely than manifest aggressives to engage in active counterproductive behaviors. Alternatively, overcompensating prosocials should be less likely than prosocials to engage in active counterproductive behaviors, because these behaviors are not as consciously inhibited by prosocials as they are by overcompensating prosocials. Given these assumptions, we expected the following two-way interaction in the prediction of active and indirect counterproductive behaviors.

**Hypothesis 1:** When implicit aggression is high, as explicit aggression increases there will be a corresponding increase in active counterproductive behaviors such that manifest aggressives will obtain the highest levels of active counterproductive behaviors. Alternatively, when implicit aggression is low, as explicit aggression increases there will be a corresponding decrease in active counterproductive behaviors such that overcompensating prosocials will obtain the lowest levels of active counterproductive behaviors.

For more subtle manifestations of aggression (e.g., passive-aggressive behaviors), a different pattern was predicted. Because latent aggressives prefer to manifest their implicit aggression in subtle ways to maintain nonaggressive self-perceptions, they were predicted to be more likely to engage in counterproductive behaviors that are passive and indirect than all other prototypes. When considering the two prosocial prototypes, we assumed that the inhibitory mechanisms and social rigidity of overcompensating prosocials might occasionally extend to the prosocial realm of behavior. Specifically, the inhibitory mechanisms and social rigidity of overcompensating prosocials may make them less likely to engage in active forms of assistance when compared with prosocials. Hence, overcompensating prosocials may inadvertently behave in a passive-aggressive fashion via inaction (e.g., by not helping others). Thus, we expected the following two-way interaction in the prediction of passive and indirect counterproductive behaviors.

**Hypothesis 2:** When implicit aggression is high, as explicit aggression decreases there will be a corresponding increase in passive and indirect counterproductive behaviors such that latent aggressives will obtain the highest levels of indirect counterproductive behaviors. Alternatively, when implicit aggression is low, as explicit aggression decreases there will be a corresponding decrease in passive and indirect counterproductive behaviors such that prosocials will obtain the lowest levels of indirect counterproductive behaviors.

Finally, for prosocial behaviors, such as OCBs, a different behavioral pattern was anticipated. Given their cooperative and helpful nature, we expected prosocials to be more likely than the other prototypes to behave in helpful and constructive ways. Conversely, given latent aggressives’ tendency toward inactivity and passivity as a form of retaliation against persons and organizations, we expected them to be the least helpful toward others and thus the least likely to engage in prosocial behaviors. We also assumed that overcompensating prosocials would be more likely than manifest aggressives to engage in prosocial behaviors on the basis of the

### Table 1

<table>
<thead>
<tr>
<th>Conditional Reasoning Test</th>
<th>Low aggression</th>
<th>High aggression</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>JMs for aggression</td>
<td></td>
<td></td>
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<tr>
<td>● Hostile attribution bias</td>
<td></td>
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<tr>
<td>● Retribution bias</td>
<td></td>
<td></td>
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<tr>
<td>● Derogation of target bias</td>
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<tr>
<td>● Victimization by</td>
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<tr>
<td>powerful “others” bias</td>
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<tr>
<td>● Potency bias</td>
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<tr>
<td>● Social discounting bias</td>
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<tr>
<td>Prosocial values</td>
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<td></td>
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<tr>
<td>● Impartial attributions</td>
<td></td>
<td></td>
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<tr>
<td>● Constructive framing</td>
<td></td>
<td></td>
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<tr>
<td>● Implicit helpful intent</td>
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<tr>
<td>● Relationship-oriented</td>
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<tr>
<td>● Conventional values</td>
<td></td>
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<tr>
<td>Latent aggressives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● do not perceive self as aggressive</td>
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<td></td>
</tr>
<tr>
<td>● engage in subtle, counterproductive behaviors (e.g., passive aggressive acts, which are misrepresented as nonaggressive)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● also prone to indirect, counterproductive behaviors</td>
<td></td>
<td></td>
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<tr>
<td>Prosocials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● perceive self as prosocial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● reliable, friendly, nonaggressive</td>
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<td></td>
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<tr>
<td>● generally refrain from engaging in counterproductive behaviors</td>
<td></td>
<td></td>
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<tr>
<td>● attribute acts of others to helpful and cooperative motives</td>
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<td></td>
</tr>
<tr>
<td>Overcompensating prosocials</td>
<td></td>
<td></td>
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<tr>
<td>● perceive self as aggressive, which stimulates desire to inhibit aggression</td>
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<td></td>
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<tr>
<td>● rigorously refrain from engaging in counterproductive behaviors</td>
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<td></td>
</tr>
<tr>
<td>● overly self-monitoring, self-critical, and rigid in behavior</td>
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</table>

*Note.* JMs = justification mechanisms.
difference in their implicit cognitions. Thus, we expected the following two-way interaction in the prediction of prosocial behaviors.

Hypothesis 3: When implicit aggression is low, as explicit aggression decreases there will be a corresponding increase in prosocial behaviors such that prosocials will obtain the highest levels of prosocial behaviors. Alternatively, when implicit aggression is high, as explicit aggression decreases there will be a corresponding decrease in prosocial behaviors such that latent aggressives will obtain the lowest levels of prosocial behaviors.

Study 1: Laboratory Setting

Bing and Burroughs (1999) first demonstrated the validity of the integrative typology by reanalyzing data on dishonesty gathered by Green (1999), and here these data are presented in greater detail. This experiment provided students with the incentive and the opportunity to lie when reporting the amount of time they spent earning extra course credit. Whether students lied served as the criterion of interest. Because lying is an active counterproductive behavior, and not easily subject to misrepresentation, Study 1 served as a test of Hypothesis 1. Specifically, latent aggressives were expected to be truthful because lying is the type of obviously counterproductive behavior that they see themselves as avoiding. By contrast, manifest aggressives were expected to lie as a means of expressing their frustration with the experimental session and its administrator. In contrast, prosocials were expected to be truthful about the extra credit they deserved. Because of their tendency to maintain rigid control over behavior to avoid any semblance of impropriety, overcompensating prosocials were expected to be, if possible, even more truthful than prosocials.

Method

Participants

The study participants were 62 college students (25 men, 37 women) at a large university in the southeastern United States. The students had an average age of 19.22 years (SD = 1.48) and participated in the study to receive extra credit applicable to their course grade.

Procedure

Experimental session. When participants reported at 1:00 p.m. for the experiment, they were kept waiting 10 min for latecomers to arrive. After this, the participants were given an extra-credit form presigned by the experimenter. The VCRTA was then administered, which took 15 min. This was followed by the 300-item PRF, which could be finished in the allotted time if respondents worked diligently. At 1:45 p.m. the experimenter announced an unexpected time limit and periodically announced this time limit until 1:55 p.m. A few minutes before 2:00 p.m., the students were asked to stop, fill in the extra-credit forms, and drop them in a collection box when leaving. Thus, the duration of the experimental session, on which the amount of extra credit earned was based, was less than 1 hr for all study participants, and all participants received the exact same amount of credit for their participation.

Incentives for dishonesty. According to departmental rules, students earn 5 points of extra credit (applicable to their course grade) for experimental sessions lasting 1 hr or less and 10 points for experimental sessions lasting more than 1 hr. As described above, the experimenter performed a frustration manipulation by purposely delaying the start of the experimental session, repeatedly reminding the students of the time, and suddenly imposing an unexpected time limit on the students. The imposed time limit made the experimental session last under 60 min, which thus limited the amount of extra credit to 5 points. Consequently, there was an incentive to retaliate against the administrator by misrepresenting the amount of time spent in the experimental session and thus “getting even” by gaining extra course credit that was not earned. Therefore, students reporting the experimental session as lasting more than 1 hr could be identified as behaving dishonestly.

Opportunity for dishonesty. In this study, all of the extra-credit forms were presigned by the administrator, and students were asked to complete their own extra-credit forms prior to dropping them into a collection box at the end of the session. This provided students with the opportunity to behave dishonestly by misrepresenting the amount of time spent in the experimental session and, in so doing, attempt to gain unearned extra-credit points.

Measures

Implicit aggression. Implicit aggression was measured with a nine-item version of the VCRTA. Each item of the VCRTA has three response alternatives, one of which is an illogical distractor assigned a value of 0. The two other response alternatives can be logically inferred from the information provided in the item’s verbal stem. The aggressive response alternative is based on a JM that rationalizes aggression and is assigned a value of +1, and the prosocial response is based on prosocial values and is assigned a value of −1. Scored responses to VCRTA items are then aggregated to create composite scores. Higher scores indicate a stronger, implicit cognitive readiness to aggress. The mean for this nine-item VCRTA was −6.44 (SD = 2.55). A reliability coefficient for the VCRTA of .76 was obtained using the Kuder-Richardson estimate on the item–total polyserial correlations.

Explicit aggression. Explicit aggression was measured with a 20-item self-report aggression scale from Form A of the PRF (Jackson, 1968). Form A of the PRF is a 300-item self-report questionnaire that uses a true–false response format. Responses indicative of aggression are assigned a value of +1, and nonaggressive responses are assigned a value of 0. Item responses are then summed to create aggression scale scores, and higher scores indicate higher explicit levels of aggression. The mean for this scale was 8.10 (SD = 3.72), and coefficient alpha was .73.

Dishonesty. A dichotomous behavioral criterion representing purposeful dishonesty was created by scoring self-reported experiment times that were more than 1 hr as dishonest and those less than or exactly 1 hr as honest. Dishonest behavior was assigned a value of +1, and honest behavior was assigned a value of 0. Only

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1 It should be noted that these participants were used by James, McIntyre, Glisson, Bowler, and Mitchell (2004) and by James et al. (2005) to demonstrate the criterion-related validity of the VCRTA.
9 out of 62 (14.5%) study participants reported that they had spent more than an hour in the experimental session.

**Results**

The VCRTA did not correlate significantly with any of the PRF self-report scales, including the PRF aggression scale ($r = -.06$, $p > .10$). A strong, significant correlation was found between the VCRTA and the dishonesty criterion ($r = .47$, $p < .01$). A nonsignificant correlation was found between the PRF aggression scale and dishonesty ($r = .11$, $p > .10$).

To test the predictions of the integrative typology, we used a moderated hierarchical multiple regression (MHMR) procedure. Given that VCRTA and PRF scale scores are continuous measures, the use of MHMR is more appropriate than artificially dichotomizing these predictors (e.g., via median splits) and using subsequent analysis of variance (ANOVA) procedures, which results in a loss of information and statistical power in comparison with the MHMR procedure (Aiken & West, 1991; Cohen & Cohen, 1983; McClelland & Judd, 1993; Stone-Romero & Anderson, 1994). For the MHMR procedure, the VCRTA, the PRF aggression scale, and the dishonesty criterion were first standardized (i.e., centered and divided by their respective standard deviations), and these standardized variables were used for all steps of the MHMR analyses. First, the standardized VCRTA and PRF aggression scale scores were multiplied to create the interaction term. The standardized dishonesty criterion was then regressed onto the standardized VCRTA and PRF aggression scale scores in Step 1 and then onto both predictors and their interaction term in Step 2. MHMR assessed whether the interaction term entered in Step 2 made a unique contribution to the explanation of variance in the criterion above and beyond the main effects of the predictors that were entered in Step 1 and partialled from the interaction term in Step 2 of the procedure (Cohen & Cohen, 1983).

Because these studies provided an initial test of whether the integrative typology of aggression would be value added in the prediction of counterproductive behaviors, we determined a priori that using a more liberal critical alpha for detecting interactions would enable us to avoid a Type II error. By so doing, we hoped to prevent a potential erroneous dismissal of this integrative typology of aggression at an early stage in its research, before the field of applied psychology had an opportunity to determine its generalizability and viability for organizational applications. Given these reasons and the low statistical power for detecting interactions, particularly in field research (Chaplin, 1991; Morris, Sherman, & Mansfield, 1986), critical alpha was set at .10 in all of the MHMR analyses, as recommended by Cohen (1988, pp. 375–376) and others (Champoux & Peters, 1980; Finn & Frone, 2004; McClelland & Judd, 1993). The results of the MHMR analysis are presented in Table 2. Entry of the predictors in Step 1 produced a significant $R^2$ (.24, $p < .01$), although only the VCRTA had a significant $\beta$ weight (.48, $p < .01$). More important, entry of the interaction term in Step 2 led to a significant increase in $R^2$ (.12, $p < .01$). Therefore, implicit and explicit aggression interacted to explain a significant amount of variance in dishonesty above and beyond the variance that was explained by either predictor alone. Following procedures recommended by Cohen and Cohen (1983), we used the MHMR results to graph the relationship between explicit aggression and dishonesty at high and low levels of implicit aggression (i.e., using 1 standard deviation above and below the mean of the VCRTA scores). The observed pattern of regression slopes (see Figure 1) is consistent with the a priori predictions of Hypothesis 1. More specifically, the probability of being dishonest (i.e., lying) increased as explicit aggression increased when implicit aggression was high. Thus, as predicted, manifest aggressives were the most likely to lie. Conversely, as explicit aggression increased, there was a corresponding decrease in the probability of lying when implicit aggression was low, making the overcompensating prosocials the least likely to lie, as predicted. Because of the active nature of the criterion, neither latent aggressives nor prosocials were predicted to lie. As shown in Figure 1, these predictions were also met.

To further elucidate the practical application of the integrative typology of aggression, we compared selection decisions generated from the integrative typology (i.e., from the full MHMR equation which includes both main effects and the interaction term) with those generated from using a simple regression equation with the VCRTA alone, because it had the strongest main effect (i.e., criterion-related validity) in comparison to the PRF aggression scale. First, we set the same cutpoint of .30 on $Y$-predicted (i.e., the predicted criterion score) for each regression equation. With this cutpoint, we found that when we used the VCRTA only (as opposed to using the integrative typology), we were 1.7 times more likely to select dishonest persons. More specifically, when we used the integrative typology and the cutpoint of .30 on $Y$-predicted, 55 people would have been selected, 3 of whom lied (5.5%). When using the VCRTA only and the same cutpoint of .30, 54 people would have been selected, 5 of whom lied (9.3%). Using an odds ratio comparison, when using the VCRTA only in comparison with the integrative typology, 1.7 times as many dishonest persons were selected. Clearly, if it is important to an organization to avoid selecting individuals who would engage in counterproductive behaviors (e.g., lying), the integrative typology provides a superior selection model. Further, if an organization desires to be highly selective and thus avoid selecting individuals who have a tendency to be dishonest, the integrative typology would again be preferred for selection purposes. To illustrate this, we identified a cutpoint on $Y$-predicted for which the integrative typology selected seven individuals, none of whom lied, whereas using the VCRTA only resulted in no one lied.

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2 It should be noted that a logistic regression was also performed on these data because of the dichotomous nature of the criterion. When the point of the dichotomy departs from .50, as it did in the current study (i.e., proportion of dishonest responders = .45), heteroscedasticity in the residual variances is engendered. Although the heteroscedasticity will not lead to biases in parameter estimations, it will lead to an increase in the Type I error rate via lowering the standard errors of the parameter estimates in ordinary least squares (OLS) regression but not in logistic regression procedures (Pedhazur & Schmelkin, 1991). The logistic regression analysis agreed with the OLS analysis, and thus the less complex OLS analysis is reported here.

3 In addition, use of the Murphy and Myors (1998, p. 63) procedure to set desired alpha for our tests of interactions resulted in a value of .15. Because this was close to the .10 recommendation of Cohen (1988), we chose to use the more conservative .10 value.
being selected at that same cutpoint. These cutpoint analyses clearly illustrate the advantage of using the integrative typology over the VCRTA alone in making accurate human resource selection decisions.

**Discussion**

The low and nonsignificant correlation between the VCRTA and the self-report of aggression provides evidence that condi-

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**Table 2**

*MHMR Results for the Prediction of Dishonesty in Study 1*

| Step | | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |

**Note.** MHMR = moderated hierarchical multiple regression; VCRTA = verbal–visual version of the Conditional Reasoning Test; PRF = Personality Research Form.

**a** This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model.

\( ** p < .01. \)

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**Figure 1.** The interaction between the Personality Research Form (PRF) aggression scale and the verbal–visual version of the Conditional Reasoning Test (VCRTA) in the prediction of dishonesty in Study 1.
tional reasoning captures an implicit component of personality that is distinct from the explicit component measured by self-report. This finding is consistent with past research demonstrating that self-report and conditional reasoning methodologies do not measure the same component of personality (Burroughs, LeBreton, Bing, & James, 2000; James, 1998).

The significant contribution of the interaction to the prediction of dishonesty strongly supported Hypothesis 1. Prosocials, overcompensating prosocials, and latent aggressives were predicted to be truthful, and in general, this prediction was supported. Thus, although the experimental session was made purposely frustrating for all of the participants, only manifest aggressives were very likely to behave dishonestly by inflating the time they spent earning extra course credit. This finding suggests that manifest aggressives may very well have had retaliatory intentions toward the experiment’s administrator and that “getting even” may be their typical response when placed in frustrating situations. Conversely, although overcompensating prosocials’ self-reported levels of aggression were comparable to those of manifest aggressives, overcompensating prosocials refrained from falsifying the time they spent in the experimental session. This result may have occurred because of a rigid control of behavior on the part of the overcompensating prosocials to avoid any semblance of impropriety. Thus, the expression of explicit aggression in the form of dishonesty clearly depended on the student’s level of implicit aggression. This finding serves to illustrate the potential value of integrating explicit and implicit components of aggression to predict behavior. The question of whether this integration would prove valuable in predicting counterproductive behavior outside of a laboratory setting was tested in the second study.

Study 2: University Setting

A second test of the integrative typology was performed in a field setting among university students. Specifically, we were interested in whether the integrative typology would predict traffic violations, including active counterproductive behaviors such as speeding on campus, reckless driving, and illegal parking. Although obtaining a few tickets for minor traffic violations per year would not be considered counterproductive, repeated traffic violations resulting in numerous tickets could certainly be considered indicative of counterproductivity, insofar as such violations obstruct others’ work activities (e.g., parking in loading zones), endanger others and the driver (e.g., engaging in reckless driving and speeding), and can lead to a removal of driving privileges or even criminal penalties. Although traffic violations are multiply determined, we nonetheless assumed that individual differences in aggression should serve as one important determinant of these counterproductive behaviors and that manifest aggressives would be more likely than all others to engage in the repeated violations indicative of active counterproductive vehicular behaviors, whereas overcompensating prosocials would be the least likely. Thus, Study 2 provided a second test of Hypothesis 1.

Method

Participants

The study participants were 225 college students (114 men, 110 women, 1 unreported) enrolled in management courses at a large university in the southeastern United States. Students participated in the study to earn extra credit applicable to their course grades. At the time the criterion was collected, students had an average age of 21.48 years (SD = 3.00).

Procedure

Students enrolled in upper level management courses were given the opportunity to participate in a study of campus life and campus activities. In return for their participation, they received extra credit applicable to their course grades. Participants completed the VCRTA and the Angry–Hostility facet of the NEO-PI-R (Costa & McCrae, 1992) and consented to have their university records accessed at a later date. Two years after the students were tested, their university records were accessed to obtain the criterion—number of traffic violations.

Measures

Implicit aggression. Implicit aggression was measured with a 14-item version of the VCRTA. This version includes the 9 items used in Study 1 plus 5 new items. The administration and scoring procedures for this 14-item version were identical to those used in Study 1. As in Study 1, item responses were summed such that higher scores indicated a stronger, implicit cognitive readiness to aggress. The mean for this 14-item VCRTA was −8.94 (SD = 3.95). A reliability coefficient of .82 was obtained using the Kuder-Richardson estimate on the item–total polyserial correlations.

Explicit aggression. Explicit aggression was measured with the eight-item Angry–Hostility facet of the NEO-PI-R (Costa & McCrae, 1992). An example item is “I am known as hotblooded and quick-tempered.” In this study, a true–false response format was used, with responses indicative of aggression assigned a value of +1 and nonaggressive responses assigned a value of 0. Item responses were summed to create aggression scale scores, and higher scores indicated higher, explicit levels of aggression. The mean for this scale was 4.93 (SD = 1.82), and coefficient alpha was .64.

Traffic violations. A continuous behavioral criterion representing active counterproductive vehicular behavior, in terms of both moving and parking violations, was obtained from the university records office approximately 2 years after the participants had taken the predictor measures. It should be noted that minor parking tickets are removed from the university’s student database after 2 months, and more serious parking tickets (e.g., parking in loading zones, parking in front of fire hydrants) are removed after 1 year, whereas moving violations remain on record for 3–5 years, depending on severity. Thus, this traffic violations variable is more highly weighted with moving violations (e.g., reckless driving, speeding) and parking violations that prevent others from access-

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4 It should be noted that these participants were used by James et al. (2004, 2005) to demonstrate the criterion-related validity of the VCRTA.

5 There were time constraints on test administration in Study 2 that were not present in Studies 1 and 3. As a consequence, in Study 2, we did not administer the 300-item PRF (Jackson, 1968) and instead administered a much shorter questionnaire, which contained the eight-item Angry–Hostility facet of the NEO-PI-R (Costa & McCrae, 1992), as a measure of explicit aggression.
ing work areas (e.g., parking in loading zones) than with minor parking violations (e.g., parking in a designated space without a permit). Here we should note that obtaining a few traffic tickets over the course of a 2-year period might not be considered counterproductive, depending on the severity of the violations. However, elevated numbers of traffic tickets (e.g., above the mean) representing repeated violations certainly can be viewed as counterproductive or deviant. The number of traffic violations ranged from 0 to 47, with a mean of 3.87 (SD = 5.25). Only 26.7% of the sample had no recorded traffic violations.

**Results**

The correlation between the VCRTA and the Angry–Hostility scale was \(-.05 \ (p > .10)\). The correlation between the VCRTA and traffic violations was \(.22 \ (p < .01)\). The Angry–Hostility scale did not correlate significantly with traffic violations (\(r = -.02, \ p > .10\)).

To test the predictions of the integrative typology, we used the exact same MHMR procedure as described in Study 1, with all of the variables standardized. The results of the MHMR analysis are presented in Table 3. Entry of the main effects for the VCRTA and the Angry–Hostility scale in Step 1 produced a significant \(R^2 \ (.05, \ p < .01)\), although only the VCRTA had a significant \(\beta\) weight (.22, \(p < .01\)). More important, entry of the interaction term in Step 2 led to a significant increase in \(R^2 \ (.014, \ p = .071)\). Therefore, implicit and explicit aggression interacted to explain a significant amount of variance in traffic violations, above and beyond the variance that was explained by either predictor alone. The observed pattern of regression slopes (see Figure 2) is consistent with the a priori predictions of Hypothesis 1. More specifically, the number of traffic violations increased as explicit aggression increased when implicit aggression was high. Thus, as predicted, manifest aggressives had the highest number of traffic violations. Conversely, as explicit aggression increased there was a corresponding decrease in traffic violations when implicit aggression was low, and thus, as predicted, the overcompensating prosocials had the fewest traffic violations.

As in Study 1, to further demonstrate the practical application of the integrative typology of aggression, we again compared selection decisions generated from the integrative typology (i.e., from the full MHMR equation with both main effects and the interaction term) with those generated from using a simple regression equation with the VCRTA alone as it again had the strongest main effect (i.e., criterion-related validity) in comparison with the self-report of aggression (i.e., the Angry–Hostility scale). Using the same cutpoint of 2.5 on \(Y\)-predicted for each regression equation, we found that when using the integrative typology, 25 people would have been selected, with a mean number of traffic violations of 2.04 (SD = 2.94). Using the VCRTA only and the same cutpoint of 2.5, 26 people would have been selected, with a mean number of traffic violations of 4.12 (SD = 6.00). Thus, with the integrative typology, we would select a group of individuals who have, on average, one half the number of traffic violations as those selected with the VCRTA only. Further, using the VCRTA only would result in selecting some very counterproductive persons, with six individuals receiving more than five traffic violations, including some exceedingly high numbers of violations (i.e., 15, 18, and 22). Alternatively, the integrative typology would lead to selecting only two individuals with more than five violations (i.e., 10 and 11 violations). Once again, this illustrates the fact that the interaction term provided by the integrative typology, which in this case explained 1.4% of the variance in traffic violations, results in selecting those who are less counterproductive (i.e., more reliable drivers), and this selection difference is clearly of practical significance because it results in reducing traffic violations by approximately 50% (i.e., 2.04/4.12 = .495).

**Discussion**

The low and nonsignificant correlation between the VCRTA and the self-report of the Angry–Hostility scale again provided evidence that conditional reasoning captures an implicit component of personality that is distinct from the explicit component measured by self-report. More important, this study again showed that implicit and explicit aggression interacted in the prediction of active counterproductive behaviors, namely, traffic violations, and the pattern of the interaction displayed in Figure 2 supported Hypothesis 1. Manifest aggressives engaged in active counterproductive vehicular behaviors, whereas overcompensating prosocials had the fewest traffic violations.

**Table 3**

**MHMR Results for the Prediction of Traffic Violations in Study 2**

<table>
<thead>
<tr>
<th>Step</th>
<th>(\beta)</th>
<th>(R^2)</th>
<th>(\Delta R^2)</th>
<th>(\Delta F)</th>
<th>(df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VCRTA</td>
<td>.22**</td>
<td>.05**</td>
<td>.05**</td>
<td>5.39**</td>
<td>2, 221</td>
</tr>
<tr>
<td>NEO Angry–Hostility</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VCRTA x NEO Angry–Hostility</td>
<td>.12†</td>
<td>.06**</td>
<td>.01**</td>
<td>3.29†</td>
<td>1, 220</td>
</tr>
<tr>
<td>Overall R</td>
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<td></td>
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</tr>
<tr>
<td>Overall F</td>
<td></td>
<td>4.72**</td>
<td></td>
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</tbody>
</table>

**Note.** MHMR = moderated hierarchical multiple regression; VCRTA = verbal–visual version of the Conditional Reasoning Test.

* This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model.  † The observed \(p\) value for the interaction term was .071.
cials, who self-reported levels of hostility that were comparable to those of manifest aggressives, did not engage in these behaviors. We can speculate that traffic violations are often preceded by situational frustrations resulting from both internal (e.g., being late) and external causes (e.g., lack of parking). Thus, in these vehicular situations, it is possible that overcompensating prosocials and manifest aggressives experience similar levels of frustration and subsequent feelings of anger or hostility. However, it would appear from these data that overcompensating prosocials have a mediating inhibitory capacity that is not present in manifest aggressives. Future research should test this speculative, mediation model of frustration and inhibition more directly.

In sum, the expression of explicit anger and hostility in the form of traffic violations clearly depended on the student’s level of implicit aggression. Again, this finding demonstrates the value of integrating explicit and implicit components of personality to predict behavior. The question of whether this integration would prove valuable in an organizational setting was tested in Study 3.

Study 3: Organizational Setting

In this study, tests of the integrative typology were extended to additional predictors and criteria in an organizational setting with a working adult sample. Because aggression may often be manifest in counterproductive and unreliable employee behaviors or other forms of “organizational delinquency” (Hogan & Hogan, 1989, p. 273; Jockin et al., 2001), we included a self-report of employee unreliability in addition to a self-report of aggression to determine the generalizability of this integrative measurement technique beyond self-reported aggression. Self-reported employee unreliability was predicted to interact with implicit aggression in the same manner as self-reported aggression. This field setting also allowed for the acquisition of more extensive criteria—in particular, important individual differences in workplace outcomes. Efforts were made to acquire diverse workplace outcomes that were consequential to the organization, representative of counterproductive workplace behaviors, and active as well as passive or indirect in form. Active forms of counterproductive workplace behaviors allowed for a second test of Hypothesis 1, whereas passive and indirect forms allowed for a test of Hypothesis 2. Also, we gathered measures of OCBs to see if the integrative typology could predict prosocial behavior as described in Hypothesis 3.

Method

Participants

The participants for this study were 184 (41 men, 143 women) working adults employed in various jobs (e.g., physical therapists, laboratory technicians, managers, administrators, nurses) at a
medium-sized hospital located in the southeastern United States. The employees had an average age of 41.41 years ($SD = 11.59$) and an average job tenure of 7.47 years ($SD = 6.63$).

**Procedure**

The test battery was administered to 203 employees at the hospital during working hours under standardized conditions, and 184 of these participants provided usable predictor data for an effective response rate of 90.64%. This test battery included the paper-and-pencil CRTA (James, 1998), the self-report aggression scale of the PRF (Jackson, 1968), and the self-report reliability scale of the Hogan Personality Inventory (HPI; Hogan & Hogan, 1989, 1995). Upon completion of the test battery, the test administrator gave each employee five sealed packets. Each packet contained a behavioral checklist and a postage-paid, preaddressed envelope for the return of the checklist. The checklist contained items measuring deviant workplace behaviors and organizational citizenship behaviors, which would be rated by the employee’s coworkers. In the presence of the test administrator, the employee participant wrote the names of five different coworkers with whom he or she had worked most frequently on the five separate packets and was instructed to distribute these packets to these peers. This procedure nested the workplace peer raters within the target employee participants. Usable peer-reported criteria were obtained for 176 of the 184 employee participants. Demographics were gathered from the hospital’s personnel department at a later date.

**Predictor Measures**

**Implicit aggression.** Implicit aggression was measured with 25 paper-and-pencil CRTA items. Each item of the CRTA has four response alternatives, two of which are illogical distractors and assigned a value of 0. The aggressive response alternative is based on a JM that rationalizes aggression and is assigned a value of +1, and the prosocial response is based on prosocial values and is assigned a value of −1. Items of the CRTA are then aggregated to create composite scores. Higher scores indicate a stronger, implicit cognitive readiness to aggress. A reliability coefficient for the CRTA of .78 was obtained using the Kuder-Richardson estimate on the item–total polyserial correlations.

**Explicit aggression.** Explicit aggression was measured with the 20-item self-report aggression scale of the PRF (Jackson, 1968) used in Study 1, again with a true–false response format. Item responses were summed to create aggression scale scores, and higher scores indicate higher explicit levels of aggression. Coefficient alpha for this scale was .59.\(^6\)

**Explicit unreliability.** Explicit components of employee unreliability were measured with an 18-item self-report employee reliability scale contained within the HPI (Hogan & Hogan, 1995). High scores are defined as being indicative of high levels of reliability and integrity, and low scores are defined as being indicative of unreliability and organizational delinquency. An example item is “I rarely do things on impulse.” Evidence for the reliability and validity of the scale can be found in the test manual (Hogan & Hogan, 1995) and in the peer-reviewed literature (Hogan & Hogan, 1989). Item responses are made on a true–false scale. Responses indicative of reliability are assigned a value of +1, and responses indicative of a lack of reliability are assigned a value of 0. Item responses are then aggregated to create scale scores. Prior to any analyses, we reverse scored this scale such that higher scores represented employee unreliability so as to test the generalizability of this integrative technique and to aid interpretation of the MHMR results because the predictions for self-reported unreliability paralleled those for self-reported aggression.

**Criterion Measures**

**Deviant workplace behavior.** The 28-item behavioral checklist of workplace deviance (Bennett & Robinson, 2000; Robinson & Bennett, 1995), adapted for use in a peer-report fashion, was used to assess behaviors that violate organizational norms and threaten the well-being of the organization and its members. Workplace peers indicated the frequency with which the employee participants had engaged in deviant behaviors by responding to each item on a 5-point Likert scale (1 = never, 2 = several times a year, 3 = monthly, 4 = weekly, 5 = daily). The mean number of peers reporting on each employee participant was 3.86 ($SD = 1.17$).

A content analysis of the items indicated that the checklist had the potential to provide both active and passive indicators of deviance. The items on the checklist were subsequently factor analyzed to determine whether indicators of both active and passive deviance could be extracted. Responses to the 28 items of the checklist, from a total sample of 1,826 workplace peers (a subject–item ratio of approximately 65 to 1), were subjected to exploratory factor analysis using principal axis extraction with a varimax rotation.\(^7\) Four factors with initial eigenvalues greater than or equal to 1 were extracted. Two of the factors appeared to consist of items measuring active forms of deviance, and two factors appeared to measure passive deviance, consistent with the content analysis. The factors also were differentiated on the basis of their organizational or interpersonal orientation. Thus, these four factors were interpreted as follows (representative items are in parentheses): Factor 1—passive organizational deviance (“Intentionally worked slower than they could have worked”); Factor 2—active organizational deviance (“Took property from work without permission”); Factor 3—active interpersonal deviance (“Acted rudely toward someone at work”); and Factor 4—passive interpersonal deviance (“Repeated a rumor or gossip about a coworker or manager at work”).

To support the aggregation of the peer ratings into scale scores, we calculated the intraclass correlation coefficient (ICC) as an

\(^6\) In this sample, the base rate of endorsement was very low for 5 of the 20 items in this scale. As a consequence, these 5 items had low item–total correlations, which lowered the overall coefficient alpha. Also, coefficient alphas for the Jackson PRF scales typically range from .50 to .91 (Sigma Assessment Systems, n.d. [http://www.sigmasassessmentsystems.com]).

\(^7\) Of the 1,826 peer raters, 680 served as raters for the 184 employee participants of Study 3. The remaining 1,146 rated another set of employee participants who completed a survey that was different than the predictor survey administered to the Study 3 participants. The entire peer rater sample of 1,826 was utilized for the factor analysis because it obtained the highest subject-to-item ratio (65 to 1) and thus the greatest reduction of sampling error in the interitem correlation matrix entered into the factor analysis. The full results of the factor analysis are available from Mark N. Bing on request.
index of interrater agreement for each item. A one-way random effects ANOVA was required for the calculation of the ICC(1,1). However, the interrater agreement estimate of the ICC(1,1) is based on the reliability of only one rater. Because peer ratings were nested within employee participant targets, and an average of 3.86 peers rated each employee, the ICC(1,1) results were generalized to an average of four raters to calculate the ICC(1,4), which provided the more accurate estimate of interrater agreement for our ratings (see Shrout & Fleiss, 1979). Only items with factor loadings of .30 or higher were included in the ICC calculations. Consequently, items with cross loadings of .30 or higher on more than one factor were included in the mean ICC calculations across the items loading on those respective factors. The mean ICC(1,4) was .37, .27, .40, and .36 for Factors 1, 2, 3, and 4, respectively. These analyses indicate that workplace peers were in moderate agreement as to the deviant behavior of their fellow employee participants, and this moderate level of agreement justified aggregation of ratings nested within a target prior to subsequent analyses.

The regression method was used to calculate factor scores, and we averaged these scores across peer ratings within each participant to obtain scales representing the respective deviance factors. The scales are as follows: (a) Mean Passive Organizational Deviance (MPO), (b) Mean Active Organizational Deviance (MAO), (c) Mean Active Interpersonal Deviance (MAI), and (d) Mean Passive Interpersonal Deviance (MPI). The two active deviance scales were used to test Hypothesis 1, and the two passive deviance scales were used to test Hypothesis 2.

OCB. Williams and Anderson’s (1991) 14-item behavioral checklist was used to assess OCBs. Two forms of OCBs were measured: those directed toward benefiting individuals (OCBIs; e.g., “Goes out of his/her way to help new employees”) and those directed toward benefiting the organization (OCBOs; e.g., “Conserves and protects organizational property”). The checklist for OCBs was contained within the same peer-report survey that was used to measure workplace deviance. Workplace peers indicated whether the participant engaged in OCBs by rating their level of agreement with each item on the following 5-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

As with the deviance checklist, ICCs were calculated as an index of interrater agreement. The mean ICC(1,4) averaged across the seven OCBI items was .38, and the mean ICC(1,4) averaged across the seven OCBO items was .44. These analyses indicated that workplace peers were in moderate agreement as to theOCBs of the employee participants and again justified aggregation for subsequent analyses. Therefore, responses to the seven OCBI items were averaged for each rater, and then across the peer raters of each employee participant, to create mean OCBI scale scores (MOCBI). Responses to the seven OCBO items were aggregated in the same fashion to create mean OCBO scale scores (MOCBO). Higher scores on each scale indicated higher levels of OCBs. Both MOCBI and MOCBO were used to test Hypothesis 3.

Employee complaints. Records of whether an employee participant had filed a complaint against the organization were obtained from the hospital’s personnel department for all 184 participants. Employee complaints served as a manifest indicator of indirect aggression targeted against the organization. Specifically, employee complaints are charges against the organization that an employee has deemed justifiable. Although many such complaints against an organization may be legitimate, complaints that are fundamentally unjustifiable and groundless are, in essence, indirect aggressive attacks against the organization. Accordingly, whether the employee filed a complaint against the hospital was designated as an indirect form of aggression due to the fact that illegitimate complaints arising from latent aggression intentions can be readily misrepresented as nonaggressive and legitimate. In no way is this a claim that every complaint filed against an organization is illegitimate. It is simply stated here that latent aggressives are more prepared than all others to file complaints against the organization that are illegitimate because of their implicit hostility and preference for passive and indirect expressions of aggression. Therefore, whether the employee had filed a complaint served as a dichotomous criterion for the test of Hypothesis 2, with complaint filed assigned a value of +1 and no complaint filed assigned a value of 0. Eleven percent of the participants had filed a complaint against the organization.

Results

Table 4 presents the means, standard deviations, and intercorrelations of the Study 3 variables. Significant correlations were observed between the CRTA and the PRF ($r = .23$, $p < .01$), between the CRTA and the HPI ($r = .14$, $p < .05$), and between the PRF and the HPI ($r = .25$, $p < .01$). With respect to the predictors, all of the observed criterion-related validity coefficients that reached statistical significance were in expected directions. The CRTA correlated with MAO ($r = .18, p < .01$) and complaint filed ($r = .24, p < .01$). The PRF correlated with MAO ($r = .14, p < .05$) and MAI ($r = .23, p < .01$). The HPI correlated with MAI ($r = .23, p < .01$), MPI ($r = .17, p < .05$), and MOCBO ($r = −.19, p < .01$).

To test the hypotheses, we used the exact same MHMR procedure as described in Study 1, again with all of the variables standardized. Significant interactions found in the prediction of MAO, complaint filed, and MOCBI provided empirical support for the integrative typology. The results of these MHMR analyses are presented in Tables 5–8 and graphed in Figures 3–6. Recall that the measurement of active deviance in Study 3 allowed for a test of Hypothesis 1 and thus permitted a replication of the findings of Studies 1 and 2. Table 5 presents the MHMR results for the interaction of the CRTA and the PRF in the prediction of MAO. Entry of the predictors in Step 1 produced a significant $R^2$ (.04, $p < .05$), although, as before, only the CRTA had a significant $\beta$ weight (.16, $p < .05$). More important, entry of the interaction term in Step 2 led to a significant increase in $R^2$ (.04, $p < .01$). Figure 3 illustrates the pattern of this interaction, which is consistent with the theoretical predictions of the integrative typology and very similar in pattern to the interactions displayed in Figures 1 and 2. More specifically, the probability of engaging in active forms of organizational deviance increased as explicit aggression increased when implicit aggression was high. Conversely, as explicit aggression increased, there was a corresponding decrease in the probability of displaying active deviance when implicit aggression was low. Thus, as predicted, manifest aggressives were more likely than all others to engage in actively deviant organizational behaviors.
Table 6 presents the MHMR results for the interaction of the CRTA and the HPI in the prediction of MAO. The findings for this analysis were nearly identical to those for the PRF. Here, entry of the interaction term in Step 2 also led to a significant increase in $R^2 (.04, p < .01)$. Further, the pattern of the interaction (see Figure 4) was essentially the same. Thus, as expected, when employee unreliability increased, there was a corresponding increase in active organizational deviance when implicit aggression was high but a corresponding decrease in active deviance when implicit aggression was low.

As Hypothesis 2 indicates, a different interaction pattern was expected to emerge in the prediction of passive and indirect manifestations of aggression. Table 7 presents the MHMR results for the test of Hypothesis 2 using complaint filed as a logistic model of OCBs. The entry of the CRTA and HPI in Step 1 produced a significant $R^2 (.06, p < .01)$. Again, only the CRTA had a significant $\beta$ weight (.24, $p < .01$). Entry of the interaction term in Step 2 led to a significant increase in $R^2 (.014, p = .097)$. The interaction is illustrated in Figure 5, and the pattern is consistent with the predictions of Hypothesis 2. The figure shows the pattern of OCBs when the organization was highest when implicit aggression was high and self-reported unreliability was low.

Finally, the measurement of OCBs allowed for a test of Hypothesis 3. Table 8 presents the MHMR results for the interaction of the CRTA and the PRF in the prediction of MOCBI. Entry of the predictors in Step 1 did not produce a significant $R^2$, but entry of the interaction term in Step 2 did lead to a significant increase in $R^2 (.02, p = .054)$. As Figure 6 illustrates, the pattern of the interaction is consistent with the predictions of Hypothesis 3. Specifically, as explicit aggression decreased, there was a corresponding increase in OCBs when the implicit motive to aggress was low, making prosocials the most likely to engage in prosocial behaviors, as predicted. Alternatively, as explicit aggression decreased, there was a corresponding decrease in OCBs when the implicit motive to aggress was high, making latent aggressives the least likely to engage in prosocial behaviors, which was also predicted.

As in Studies 1 and 2, to illustrate the practical application of the integrative typology of aggression, we compared selection decisions generated from the integrative typology (CRTA and PRF and their interaction) with those generated from using a simple regression equation with the CRTA alone. MAO served as the criterion in these cutpoint analyses because it was the Study 3 outcome that provided a successful replication of the findings of Studies 1 and 2 (i.e., confirmation of Hypothesis 1). Using the same cutpoint of $-0.08$ on $Y$-predicted (i.e., the MAO factor score), we found that when using the integrative typology, 41 people would have been selected, with a mean MAO score of $-0.0754 (SD = .50)$. When using the CRTA only and the same cutpoint of $-0.085$, 45 people would have been selected, with a mean MAO score of $0.0165 (SD = .49)$. This difference represents approximately one-fifth of a standard deviation on MAO, with the integrative typology selecting those who were less actively deviant. To further examine this comparison, we dichotomized the MAO criterion with scores of $-10$ and lower as representing prosocial persons (i.e., clearly nondeviant) and with scores higher than $-10$ as representing both potentially and clearly actively deviant persons. With this additional criterion dichotomization, we found that the integrative typology selects 41 people as stated above, with 20 of them falling in the potentially deviant to actively deviant category, whereas the CRTA selects 45 people, but with 29 of them falling in the potentially deviant to actively deviant category.

Thus, when using the CRTA only, versus using the integrative typology, there is a 45% increase (i.e., an increase from 20 to 29) in selecting potentially deviant to highly deviant individuals. Further, if an organization desires to use a select-out model and eliminate only the most deviant individuals from selection, the integrative typology would again be preferred for selection purposes. To confirm this, we identified a cutpoint on $Y$-predicted that, with the integrative typology, eliminated the 10 most actively deviant individuals from the group of employees selected. However, when using the CRTA only with this

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Note. $N$ varied from 176 to 184 due to missing data. CRTA = Conditional Reasoning Test of Aggression; PRF = Personality Research Form; HPI = Hogan Personality Inventory; MPO = mean passive organizational deviance; MAO = mean active organizational deviance; MAI = mean active interpersonal deviance; MPI = mean passive interpersonal deviance; MOCBI = mean organizational citizenship behaviors toward individuals; MOCBO = mean organizational citizenship behaviors toward organizations.

*p < .05. **p < .01 (one-tailed).
same cutpoint, these 10 actively deviant employees were not eliminated from the selected group of employees and were indeed among the group of those selected. As in Studies 1 and 2, these Study 3 cutpoint analyses clearly provide additional evidence of the practical significance of using the integrative typology for enhanced selection decisions.

Discussion

Study 3 extended the findings of Studies 1 and 2 in several important ways. First, although the CRTA was observed to correlate significantly with both self-reported aggression ($r = .23$) and self-reported unreliability ($r = .14$), the correlations were far from

Table 5

<table>
<thead>
<tr>
<th>Step</th>
<th>MAO</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
<th>$df$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRTA</td>
<td>.04*</td>
<td>.04*</td>
<td>3.92*</td>
<td>2, 173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRF aggression</td>
<td>.16*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>CRTA $\times$ PRF aggression</td>
<td>.08**</td>
<td>.04**</td>
<td>7.64**</td>
<td>1, 172</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>.21**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note. $N = 176$. MHMR = moderated hierarchical multiple regression; CRTA = Conditional Reasoning Test of Aggression; PRF = Personality Research Form.

*a This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model.

$p < .05$. ** $p < .01$.

![Figure 3](image-url)

**Figure 3.** The interaction between the Personality Research Form (PRF) aggression scale and the Conditional Reasoning Test of Aggression (CRTA) in the prediction of mean active organizational deviance (MAO) in Study 3.
what would indicate redundancy of construct measurement (e.g., >.70). Thus, the proposition that conditional reasoning and self-report methodologies measure different components of personality was still supported. A second goal of Study 3 was to extend our tests of the integrative typology to additional predictors and criteria in an organizational setting. By gathering active as well as passive and indirect measures of organizational deviance as well as indicators of prosocial behaviors, we had the opportunity to retest Hypothesis 1 and to conduct initial tests of Hypotheses 2 and 3. In addition, by including a self-report of employee unreliability, we were able to examine the generalizability of this integrative assessment technique (i.e., combining measures of implicit and explicit traits) beyond self-reported aggression.

The interaction between implicit and explicit aggression found in the prediction of active organizational deviance provided a striking replication of the results of Studies 1 and 2. Further, this

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>$R^2$</th>
<th>$\Delta R^2a$</th>
<th>$\Delta F$</th>
<th>$df$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>CRTA</td>
<td>.18*</td>
<td>.03*</td>
<td>3.10*</td>
<td>2, 173</td>
</tr>
<tr>
<td></td>
<td>HPI Unreliability</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>CRTA × HPI Unreliability</td>
<td>.20**</td>
<td>.07**</td>
<td>.04**</td>
<td>7.03**</td>
</tr>
<tr>
<td>Overall R</td>
<td></td>
<td>.27**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall F</td>
<td></td>
<td>4.48**</td>
<td></td>
<td></td>
<td>3, 172</td>
</tr>
</tbody>
</table>

Note. $N = 176$. MHMR = moderated hierarchical multiple regression; CRTA = Conditional Reasoning Test of Aggression; HPI = Hogan Personality Inventory.

a This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model.

* $p < .05$. ** $p < .01$.

Figure 4. The interaction between the Hogan Personality Inventory (HPI) Unreliability scale and the Conditional Reasoning Test of Aggression (CRTA) in the prediction of mean active organizational deviance (MAO) in Study 3.
The finding was robust in that it was replicated when a measure of explicit unreliability was used in place of explicit aggression. The similar pattern of slopes across all three studies indicates that manifest aggressives are more likely than all others to engage in active forms of counterproductive behaviors, which may be due to their proclivity to view such behaviors as justifiable acts. Conversely, overcompensating prosocials are clearly the least likely to engage in these behaviors, which may be due to a high degree of self-monitoring used to inhibit behaviors that would give them any semblance of impropriety. In sum, this consistent pattern of findings across the laboratory and field studies provides strong support for Hypothesis 1.

We proposed in Hypothesis 2 that latent aggressives would manifest their hostility in passive or indirect ways that can be

### Table 7

**MHMR Results for the Prediction of Complaint Filed in Study 3**

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>$\Delta F$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRTA</td>
<td>.24*</td>
<td>.06**</td>
<td>.06**</td>
<td>5.62**</td>
<td>2, 181</td>
</tr>
<tr>
<td>HPI Unreliability</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRTA × HPI Unreliability</td>
<td>-.12*</td>
<td>.07**</td>
<td>.01*</td>
<td>2.79*</td>
<td>1, 180</td>
</tr>
<tr>
<td>Overall $R$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall $F$</td>
<td>.27**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta F$</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$df$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** $N = 184$. MHMR = moderated hierarchical multiple regression; CRTA = Conditional Reasoning Test of Aggression; HPI = Hogan Personality Inventory.

This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model. The observed $p$ value for the interaction term was .097.

$p < .10$. **$p < .01$.**

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**Figure 5.** The interaction between the Hogan Personality Inventory (HPI) Unreliability scale and the Conditional Reasoning Test of Aggression (CRTA) in the prediction of employee complaints against the organization in Study 3.
easily misrepresented as nonaggressive and justifiable. Certainly, many complaints against organizations have a justifiable basis, and yet, filing a complaint against an organization can also be an indirect manifestation of aggression insofar as employees can construe illegitimate complaints as legitimate. Thus, whether an employee filed a complaint against the organization served to test Hypothesis 2. Although explicit aggression did not interact with implicit aggression to predict this criterion, explicit unreliability and implicit aggression did interact in the manner predicted. Thus, individuals who self-reported reliable qualities but who possessed the implicit motive to aggress were most likely to file a complaint against the organization. Given this finding, it may be advantageous to expand this integrative assessment technique beyond explicit aggression to include

Table 8
MHMR Results for the Prediction of the Mean Organizational Citizenship Behavior Toward Individuals (MOCBI) in Study 3

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>(R^2)</th>
<th>(\Delta R^2a)</th>
<th>(\Delta F)</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 CRTA</td>
<td></td>
<td>.02</td>
<td>.02</td>
<td>1.35</td>
<td>2, 173</td>
</tr>
<tr>
<td>PRF aggression</td>
<td>.13</td>
<td></td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 CRTA × PRF aggression</td>
<td>.04†</td>
<td>.02†b</td>
<td>3.78†</td>
<td>1, 172</td>
<td></td>
</tr>
<tr>
<td>Overall R</td>
<td>.19†</td>
<td></td>
<td>.01</td>
<td>2.18†</td>
<td>3, 172</td>
</tr>
<tr>
<td>Overall F</td>
<td></td>
<td></td>
<td>.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \(N = 176\). MHMR = moderated hierarchical multiple regression; CRTA = Conditional Reasoning Test of Aggression; PRF = Personality Research Form.

\(a\) This statistic represents the incremental variance accounted for in the criterion when an additional predictor is added to the model. \(b\) The observed \(p\) value for the interaction term was .054.

† \(p < .10\).

Figure 6. The interaction between the Personality Research Form (PRF) aggression scale and the Conditional Reasoning Test of Aggression (CRTA) in the prediction of mean organizational citizenship behavior toward individuals (MOCBI) in Study 3.
other explicit components of personality, in particular, employee unreliability.

In addition, Study 3 also afforded the opportunity to extend the integrative typology to the prediction of prosocial behaviors. In addition to avoiding counterproductive behaviors, according to Hypothesis 3, prosocials should also choose to engage in prosocial behaviors. The interaction found between implicit and explicit aggression in the prediction of OCBs directed toward other employees provides support for Hypothesis 3. Specifically, prosocials were shown to be the most likely to engage in OCBs benefiting individuals. This supports the integrative typology’s description of prosocials not only as nonaggressive but also as cooperative and helpful. Also as expected, latent aggressives were least likely to engage in these behaviors, as their implicit aggression coupled with a tendency toward inactivity would presumably lead them to refrain from engaging in active, prosocial behaviors.

Clearly, not every test of the integrative typology in Study 3 was successful. One reason for these failures may have been measurement error in the criteria. Specifically, there was only moderate agreement among peer raters with respect to the deviant and prosocial behaviors of the employee participants, and thus, some unreliability of measurement was present in the peer-report criteria. In addition, we did not have access to information that would allow us to distinguish illegitimate from legitimate employee complaints, and thus, employee complaints was certainly a contaminated measure of indirect aggression toward the organization. Nonetheless, when significant interactions were obtained in the prediction of the organizational criteria, the patterns of the interactions were consistent with the predictions of the integrative typology.

In sum, this organizational field study served to successfully replicate Studies 1 and 2 and extend the results obtained with student samples. It demonstrated that the integration of conditional reasoning and self-report methodologies explains additional variance in organizationally relevant outcomes that cannot be explained when these measurement techniques are used in isolation. Perhaps most important, the above set of findings demonstrates that different persons may report similar levels of explicit aggression (or unreliability) and yet behave in very different ways because of their differences in implicit aggression. For example, manifest aggressives and overcompensating prosocials, although distinguishable in terms of their implicit aggression, report similar levels of explicit aggression and yet vary substantially in displaying dishonest and counterproductive behaviors. The same can be said of latent aggressives and prosocials with regard to prosocial behaviors, and perhaps with regard to indirect counterproductive behaviors as well. The implications of these findings for personnel selection practices and the accuracy of hiring decisions are discussed below.

General Discussion

The current work demonstrates for multiple job-relevant criteria that the validity of self-reported aggression and unreliability can be dependent on the implicit cognitive readiness to aggress, as measured by conditional reasoning. One interesting aspect of the current work centers on the ability of this integrative typology of aggression to predict behavioral phenomena (e.g., lying, workplace complaints, workplace deviance) that, although of a low base rate of occurrence, are of organizational consequence. For example, workplace complaints and grievances can have serious financial and wellness consequences for both employees and the company (Cascio, 2006), and “workplace aggression . . . [can] prove extremely damaging to individuals and organizations” (Neuman & Baron, 1998, p. 391). As Neuman and Baron (2005) have noted, to the extent [that counterproductive] behaviors involve efforts by individuals to harm others at work, or the organizations in which this work occurs, they represent instances of “workplace aggression” . . . and we believe there are substantial theoretical and practical benefits to be derived in studying them as such. (p. 13)

Thus, part of the value of this integrative typology of aggression, and the subsequent measurement integration between self-reports and conditional reasoning, is the resulting ability to predict low base-rate outcomes (e.g., lying in Study 1), which nonetheless are consequential for organizations (e.g., workplace complaints and deviance in Study 3).

Although the interactions obtained from integrating implicit aggression with explicit aggression fit the predicted patterns, the variance in the criteria accounted for by these interactions decreased from 12% to between 1.4% and 4% as we moved from the laboratory to field settings. As other researchers have noted, interactions can be very difficult to detect in nonexperimental field studies (Morris et al., 1986), and 1% to 3% of incremental variance explained by an interaction term is the amount routinely found in most field studies (Champoux & Peters, 1987; McClelland & Judd, 1993). Recently, in a review of 30 years of research, Aguinis, Beatty, Boik, and Pierce (2005) found that the mean effect size for interactions (with categorical moderators) was 1% in the “personnel selection domain” (p. 98). However, some researchers have noted that interactions explaining as little as 1% of criterion variance should be considered important (see Evans, 1985; McClelland & Judd, 1993), and still others have asserted that the amount of incremental variance explained by the interaction term serves as an inadequate assessment of the moderator’s impact (see Champoux & Peters, 1980, 1987). For example, with respect to our second study, in which the interaction term explained 1.4% of the variance in traffic violations, it is clear that as self-reported aggression scores increase (from −1 to +1 standard deviation), conditional reasoning becomes much more capable of predicting those who are likely to violate traffic laws (manifest aggressives) and distinguishes them from those who are likely to avoid these violations (overcompensating prosocials; see Figure 2). Likewise, when self-reported unreliability was low, conditional reasoning was capable of distinguishing those likely to file a complaint from those unlikely to do so, but when self-reported unreliability was high, this capability diminished (see Figure 5). Thus, the percentage of variance in the criterion explained by the interaction term is a parameter that does not consider the fact that the amount of variance attributable to the main effect depends on the level of the moderator, nor does it consider the theoretical basis for the pattern of the interaction predicted and its potential applications.

Regardless of the above perspectives, we have also empirically demonstrated with cutoff analyses in all three studies that, with the interaction term included in the prediction equation (i.e., when using the integrative typology for the selection model), a superior group of employees (i.e., a less counterproductive group) is selected in comparison with the group selected by using the most advantageous simple regression model (i.e., that of conditional
reasoning alone). Future research on the practical implications of interactions for personnel selection activities should evaluate the quality of the group of employees chosen for selection with and without the interaction term included in the selection model. Additional research using the cutpoint techniques pursued here, perhaps supplemented with Monte Carlo methods, will further elucidate the importance of interactions of individual differences for personnel selection purposes.

Applications of the Integrative Typology of Aggression for Organizational Improvements

There are three primary human resource applications of the integrative typology of aggression for organizational improvements. Specifically, the integrative typology and its associated assessment system (i.e., combining self-reported aggression with conditional reasoning measures of aggression) can be applied in organizations to improve personnel selection decisions, work team compositions, and executive coaching practices. In the next sections, we address each of these possible human resource applications in turn.

Personnel Selection Decisions

The most obvious application of the integrative typology of aggression is to the improvement of personnel selection decisions in organizations. Correct hiring decisions from the perspective of organizational productivity have been labeled as true positives and true negatives. True positives are those hires who were predicted to do well on the job and indeed live up to this expectation once hired. True negatives are those not hired who were not predicted to do well on the job and, indeed, would have performed below acceptable standards if hired. Incorrect hiring decisions have been called false positives and false negatives. False positives are those hires who were predicted to do well on the job but who perform below acceptable standards once hired. False negatives are those not hired who were not predicted to do well on the job but indeed would have performed well had they been hired. Discussed below are the implications of the integrative typology for the accuracy of hiring decisions for occupations where implicit aggression is an undesirable employee characteristic.

When information provided by conditional reasoning is lacking from the hiring process, knowledge of the implicit component of aggressive personalities of job candidates is also lacking, and the personnel assessment may be incomplete. Under these conditions, in which aggression is undesirable and in which only the self-report is used for the hiring decision, the decision maker will tend to (a) make a correct true positive decision when hiring prosocials, (b) make a correct true negative decision when not hiring manifest aggressives, (c) make an incorrect false positive decision when hiring latent aggressives, and (d) make an incorrect false negative decision when not hiring overcompensating prosocials. Thus, an organization that uses only self-reports and selects individuals low on explicit aggression will tend to correctly hire manifest aggressives and latent aggressives and correctly hire prosocials, but it will also hire overcompensating prosocials. Although it is often desirable to hire individuals who will display low levels of aggression, it is conceivable that in many organizational settings or jobs, the reserved and conflict-avoidant nature of the overcompensating prosocial might not be desirable (e.g., in managerial roles, where overcompensating prosocials would be reluctant to confront and counsel problem employees). Further, it might be beneficial in some jobs to selectively hire manifest aggressives who are not reluctant to confront others when necessary (e.g., bodyguards, security guards, bartenders, soldiers, collection agents), as long as their aggressive tendencies can be controlled with appropriate organizational constraints and structures (e.g., rewards, incentives, punishments, etc.). Likewise, latent aggressives might be preferred for jobs that require an individual to manifest aggressive and deviant behaviors in more subtle and deceptive ways to accomplish important job tasks (e.g., intelligence agents or spies, covert operatives, private investigators). Finally, in some cases, overcompensating prosocials may be preferred over prosocials in jobs where a socially reserved demeanor benefits job performance (e.g., restroom attendants, limousine drivers, chauffeurs, butlers). In addition, overcompensating prosocials may serve as excellent social workers and counseling psychologists, as being socially reserved is advantageous for avoiding emotional burnout and maintaining the objectivity required to help psychologically stressed or behaviorally dysfunctional clients.

Only by using the integrative typology can these different prototypes be identified and subsequently appropriately selected for various occupations. Consequently, we strongly recommend using both conditional reasoning and self-reports when employee aggression is a job-relevant trait, as (a) both measures are needed to provide a more holistic assessment of aggressive personalities (i.e., measures of both implicit and explicit components of aggression), and (b) implicit and explicit components of aggression interact in the prediction of counterproductive and deviant behaviors, and including this interaction term within the prediction equation clearly improves selection decisions.9

Work Team Composition

As more organizations have turned to teams, particularly self-managing work teams, it has become even more critical to ensure that the composition of the work team is such that the team will be productive with little dysfunctional conflict. This clearly suggests that manifest aggressives who might dominate and intimidate team members should not be selected, particularly in self-managing work teams without a manager in place to control such individuals. Likewise, latent aggressives would not be beneficial in team contexts given their propensity to aggress in subtle ways that would undermine coworkers as well as their tendency to avoid engaging in OCBs (as found in Study 3). For example, latent aggressives may have the tendency to withhold needed information from coworkers, and such withholding would represent an act

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9 Although, compared with CRTs, self-reported aggression had lower or nonsignificant relations with the criteria investigated here, we do not recommend dismissing self-reports of explicit aggression because they have demonstrated validity in past research (e.g., Costa & McCrae, 1992; Jackson, 1968, 1984). Also, the integrative typology requires that they be administered along with CRTs.
of passive aggression that would harm team performance. In addition, overcompensating prosocials may not be appropriate for all types of teams, as such individuals may be too inhibited and socially reserved to share their opinions. For example, in problem-solving teams, overcompensating prosocials may withhold their insights and ideas and fail to appropriately challenge other team members, which in extreme cases, could contribute to team groupthink. Thus, for many self-directed work teams that include interdependent members, selecting prosocials may be most desirable from the standpoint of optimal work team composition, and this can be accomplished only by integrating both self-reports and CRTs.

Executive Coaching Practices

An additional application of integrating measures of implicit and explicit aggression is in the area of executive coaching. Ducharme (2004) has advocated cognitive–behavioral coaching (CBC) for assessing and changing negative automatic thoughts, dysfunctional cognitions, and maladaptive belief structures. However, CBC is not generally used to connect behavioral indications of anger and aggression with larger aspects of the executive’s personality, and this is a shortcoming of the CBC technique (Ducharme, 2004). Thus, given the conditional reasoning technique’s ability to assess dysfunctional underlying biases in reasoning that are indicative of maladaptive belief structures (e.g., hostile attribution biases revealing an implicit belief in others’ harmful intentions, derogation of target bias revealing an implicit belief that victims deserve harm), we believe that CRTs are applicable to CBC strategies for executive change and development. Supporting this view are Sherin and Caiger (2004), who asserted that cognitive belief structures of executives need to be changed when these structures lead to frequent anger outbursts and counterproductive workplace behaviors.

Consequently, in some situations, executive coaching might benefit from intensifying the cognitive assessment or even taking a more psychodynamic perspective, such as when an executive demonstrates patterns of dysfunctional behavior that other executive coaching approaches have failed to change (Kilburg, 2004). In such situations, an understanding of the unconscious or implicit personality components as well as of the explicit personality components could be beneficial. The integrative typology could provide an early identification of psychic conflicts, which could enable executive coaches to proceed with more efficacious counseling earlier in the coaching relationship by (a) making the executive aware of his or her particular dysfunctional cognitive bias and then (b) counteracting that bias with more functional cognitive interpretations of events. For example, if the executive is having social difficulties by being perceived by subordinates as cold and impersonal, and the integrative typology reveals that the executive has the overcompensating prosocial pattern, then executive coaches could attempt to change the executive’s overreliance on self-monitoring in social settings that prevent spontaneous, natural, and personable workplace interactions with subordinates.

Again, the integration of conditional reasoning with self-report would be needed to reveal the cause of the executive’s organizational difficulties, that of the overcompensating prosocial’s devotion of too much cognitive resources to self-monitoring and social inhibitions that take him or her “offline” during social interactions and that prevent him or her from devoting cognitive resources to important communicative tasks (e.g., listening, encoding, comprehending, and responding to subordinates’ workplace concerns; cf. Kanfer & Ackerman, 1989). For these executive coaching practices, we should emphasize that care needs to be taken by practitioners to provide feedback relevant to the integrative typology in a way that does not overly stigmatize or psychologically harm the executive and instead leads to an enhancement of self-knowledge with respect to the executive’s strengths, limitations, and potential for professional growth.

These examples illustrate that knowledge of both the implicit and explicit components of personality has the potential to improve hiring decisions, team composition, and executive coaching. Thus, we recommend using both self-reports and CRTs (or other measures of implicit personality; see Bing, LeBreton, Davison, Migetz, & James, in press) and integrating the two types of measures to improve organizationally relevant outcomes.

Limitations and Future Research

One issue that cannot be resolved definitively from these data is that of whether those who manifest their counterproductivity in subtle ways (i.e., latent aggressives) are unintentionally or intentionally misreporting themselves when responding to self-report items. We have stated the theoretical position that latent aggressives are unaware of their implicit cognitive readiness to aggress and perceive themselves to be nonaggressive. To maintain this self-perception to themselves and to others, they deny engaging in aggressive and counterproductive activities when completing self-reports and engage in aggressive acts that can be misrepresented to themselves and others as nonaggressive. Alternatively, we could argue that the tendency of latent aggressives to aggress is not really latent but that, instead, they are aware of their aggressive nature. We could also argue that this self-awareness is coupled with the awareness that active and overt forms of counterproductive behavior and/or aggression are not typically tolerated by authorities. Therefore, they could also be aware of the fact that they should not admit to aggressive and unreliable tendencies when completing self-reports and should engage only in those forms of aggression and counterproductivity that are typically tolerated (e.g., passive-aggressive behaviors). Thus, we have reached a point of equifinality with respect to the manifestation of implicit aggression for these individuals. In either case, the predictions regarding the manifestation of the implicit aggressive tendency as subtle, indirect, and passive, be it outside of self-awareness or otherwise, are the same, and the question of whether their aggression is truly latent or purposely misrepresented in self-reports is the subject of future research (Bing, 1998; Bing, Burroughs, Whanger, Green, & James, 2000).

Although the current work focused on how implicit and explicit aggression can interact in the prediction of counterproductive behaviors, we did not investigate some of the proximal cognitive processes that may underlie the manifestation of aggression in these behavioral outcomes. For example, as levels of explicit and implicit aggression diverge, there may be corresponding increases in cognitive dissonance and self-deception, which may lead to subsequent changes in behavior. These and other constructs (e.g., self-awareness) may serve to mediate the impact that implicit and explicit aggression were found to have on the behavioral outcomes.
investigated here (e.g., active organizational deviance). Future investigations of these potential mediating processes will help to elucidate the impact that different types of aggression can have on behavioral outcomes of organizational relevance.

In addition, the applicability of the integrative typology to actual employment testing situations may be a concern to some researchers and practitioners. First, to use the integrative typology in selection, both CRTs and self-reports of personality must be administered, which increases the required time for assessment. An organization will have to make the determination as to whether there is sufficient utility in using both measures for selection. Given the empirical evidence above illustrating that setting a cutoff point on the predicted outcome with the interaction term included in the prediction equation selected a set of persons (or potential employees) who were less counterproductive (e.g., less likely to lie, less likely to have traffic violations, less likely to be actively deviant in an organization) than those selected with the interaction term omitted, we assert that it is generally in the best interest of organizations to use both assessment devices (CRTs and self-reports) when aggression is a job-relevant trait.

Second, because CRTs are indirect measures of personality, the constructs they measure are not apparent to test takers, and to prevent faking and to maintain the indirect nature of the assessment, which is required for measuring implicit traits, it is necessary that test takers remain unaware of the constructs measured by CRTs (see Greenwald & Banaji, 1995; LeBreton, Barksdale, Robin, & James, 2007). Thus, the CRT must be described as a test of inductive reasoning without a description of the precise construct measured, and practitioners will be able to provide only limited feedback to test takers as to their performance on the CRT. Some organizations may be uncomfortable with these constraints, although it is a professionally endorsed and ethical practice to withhold testing information from job applicants, such as the nature of the traits being assessed and information regarding test scores and test performance. Withholding this information from test takers is often necessary to preserve the security, integrity, and validity of selection tests and is endorsed as an ethical practice by the American Psychological Association and the Society for Industrial and Organizational Psychology (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999; Society for Industrial and Organizational Psychology, 2003).

A further organizational concern may be whether test takers perceive CRTs (and other indirect measures of personality) as fair selection devices, particularly given the limited feedback that occurs with measures of implicit traits to maintain their requisite indirect nature (see Greenwald & Banaji, 1995). Future research should examine issues of test fairness, because these indirect assessment devices may become more popular in selection contexts due to recent demonstrations of their validity (e.g., see James et al., 2005), and practitioners will eventually need more knowledge regarding their acceptance by both managers and applicants alike.

Conclusions

In the current research, we have demonstrated the potential value of integrating self-reports of explicit aggression with CRTs of implicit aggression. We believe that measures of implicit personality have great potential for tapping into the unconscious or latent personality traits and that—because of the variety of settings, occupations, and criteria for which they may be relevant—more research on integrative typologies is needed. We look forward to additional research that pursues integrating measures of both implicit and explicit aggression as well as research that integrates implicit and explicit components of other traits, such as achievement motivation (Bing et al., in press), which are relevant to the understanding and prediction of workplace behavior and performance.

References


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