Psychological Assessment

Factor Structure of the B-Scan 360: A Measure of Corporate Psychopathy
Cynthia Mathieu, Robert D. Hare, Daniel N. Jones, Paul Babiak, and Craig S. Neumann
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Factor Structure of the B-Scan 360: A Measure of Corporate Psychopathy

Cynthia Mathieu
Université du Québec à Trois-Rivières

Robert D. Hare and Daniel N. Jones
University of British Columbia

Paul Babiak
Anubis-Research, Hopewell Junction, New York

Craig S. Neumann
University of North Texas

Psychopathy is a clinical construct defined by a cluster of personality traits and behaviors, including grandiosity, egocentrism, deceitfulness, shallow emotions, lack of empathy or remorse, irresponsibility, impulsivity, and a tendency to ignore or violate social norms. The majority of empirical research on psychopathy involves forensic populations most commonly assessed with the Psychopathy Checklist-Revised (PCL-R), a 20-item rating scale that measures 4 related factors or dimensions (Interpersonal, Affective, Lifestyle, and Antisocial) that underpin the superordinate construct of psychopathy. Recently, researchers have turned their attention to the nature and implications of psychopathic features in the workplace. This research has been hampered by the lack of an assessment tool geared to the corporate/organizational world. Here we describe the B-Scan 360, an instrument that uses ratings of others to measure psychopathic features in workplace settings. In this study, large samples of participants used an online survey system to rate their supervisors on the B-Scan 360. Exploratory and confirmatory factor analyses supported a reliable 20-item, 4-factor model that is consistent with the PCL-R 4-factor model of psychopathy. Although more research is needed before the B-Scan 360 can be used in organizational settings, we believe that these results represent an important step forward in the study of corporate psychopathy.

Keywords: psychopathy, corporate psychopathy, B-Scan, corporate settings
sive, Lacks realistic goals, Irresponsible), and Antisocial (Poor behavioral controls, Adolescent antisocial behavior, Adult antisocial behavior). Cooke and Michie (2001) have argued that antisocial features (the Antisocial factor) should not be included in the assessment of psychopathy. However, traditional clinical conceptions of psychopathy are replete with antisociality, and it is difficult to understand how the defining traits of the construct could be measured without reference to antisocial behaviors (Hare, 2003; Hare & Neumann, 2008). As Lynam and Miller (in press) put it, Antisocial behavior [ASB] plays a clear and prominent role in psychopathy. ... In fact, if there is an essential behavioral feature in common across the conceptualizations [of psychopathy], it is the presence of ASB. Any description of psychopathy is incomplete without ASB.

We included antisocial features in the current study of corporate psychopathy.

Given the defining features of psychopathy (that is, personality traits that make it easy to defraud, bilk, scam, dominate, and control), along with a context that includes loosely regulated financial environments, plenty of opportunities, lax regulatory oversight, huge rewards and trivial penalties, it is not difficult to suspect that psychopathy should be closely connected to corporate misbehavior and white-collar crime (Perri, 2011).

Corporate Psychopathy

In a recent study of 203 upper-level managers, Babiak, Neumann, and Hare (2010) found that the PCL-R—particularly its interpersonal component—was positively associated with in-house ratings of Charisma/Presentation style (creativity, strategic thinking and communication skills) and negatively associated with ratings of Responsibility/Performance (being a team player, leadership and management skills, and overall accomplishments). The authors concluded that the ability to charm, manipulate, and deceive others allowed psychopathic leaders to achieve apparent success in their careers despite negative performance ratings and behaviors potentially harmful to the corporation and its personnel. Others have found psychopathy to be positively related to unethical decision making (Stevens, Deuling, & Armenakis, 2012), a recurring theme in the business world during the past few years. At first glance, individuals with psychopathic tendencies may seem attractive during recruitment and may succeed in the short-term, but we argue that similar to individuals with narcissistic tendencies, the destructive aspects of the personality will appear in the long-run (Campbell, Hoffman, Campbell, & Marchisio, 2011).

A major impediment to advancing our understanding of corporate psychopathy is the unavailability of a suitable instrument for assessing the construct in business settings. Rather than relying on formal clinical assessments or extant self-reports to assess psychopathy, Babiak and Hare began working several years ago on the development of an instrument for rating psychopathic features in corporate and organizational settings. The original item set was based on a multitude of behaviors, attitudes, and judgments considered problematic (by human resources personnel and industrial/organizational psychologists) in corporate succession plans, not all of which were possible indicators of psychopathy. The result was the 113-item Business-Scan 360, referred to here as the B-Scan, designed as a rating scale in which various members of an organization rate others, including supervisors, peers, and subordinates (Babiak & Hare, 2012). The goal of the present study was to determine the factor structure of the B-Scan as a measure of psychopathy when used by subordinates to rate their supervisors in corporate settings.

It has proven difficult to enlist the participation of organizations to validate the B-Scan. Fortunately, the recent introduction of online internet surveys has made it possible for researchers to collect large amounts of data that are reasonably representative of populations of interest. Amazon’s Mechanical Turk (MTurk; www.mturk.com) has proven to be particularly useful in this regard (e.g., Buhrmester, Kwang, & Gosling, 2011). MTurk is an online marketplace connecting requesters offering payment for completion of human intelligence tasks (HITs) and workers willing to complete such tasks. In terms of generalizability, many studies report that samples obtained through MTurk are more representative than studies using student participants (e.g., Behrend, Sharek, Meade, & Wiebe, 2011; Buhrmester et al., 2011). Mturk is a useful option for employee-focused research (Barger, Behrend, Sharek, & Sinar, 2011).

Current Study

Early versions of the B-Scan were designed to capture the four-factor model of psychopathy, but the process was largely rational, and the amount of empirical data available was too small to conduct satisfactory statistical analyses. The 113-item set also was rather large for routine use and might have contained items that were not directly related to the psychopathy construct. In this study, we used MTurk to collect two large independent samples of data from business personnel who rated their supervisors on the original B-Scan items and on several relevant external variables. In Sample 1, we conducted exploratory analyses to delineate the factor structure of the B-Scan. In Sample 2, we conducted a CFA of the items derived from the analyses in Sample 1.

Sample 1: Exploratory Analyses

Participants in Sample 1 were 340 working adults recruited on Amazon’s MTurk website (57% women; mean age 33.64 years, SD = 11.78; 74% European heritage, 7% African heritage, 7% East Asian, 4% South Asian, 8% other mixed ethnicities). On MTurk, all participants preselect tasks they wish to complete, for which they receive a nominal fee. The task in this case was to “rate your boss’s personality.” Of those who took the survey, 2% reported being a CEO or senior manager, 12% were middle management, 13% were line management, and 73% did not hold a managerial position. Salaries ranged from less than $25K to over $200K per year. The demographics of participants’ immediate supervisors or bosses were also collected: 40% were women, 75% were of European heritage, and mean age was 45.8 years (SD = 10.0).

The MTurk instructions for the B-Scan ratings were as follows: “Please answer the following questions with respect to your current (or most recent) boss or supervisor. If you have (or had) more than one, answer with respect to the most relevant to your career.” Participants responded to each item on a 5-point Likert-like scale (1–5) from Strongly Disagree to Strongly Agree. Sample items are as follows: Comes across as smooth, polished and charming;
Shows no regret for making decisions that harm the company, shareholders, or employees.

In this sample, we used several statistical procedures to explore the underlying dimensions of the initial pool of B-Scan items. The first and primary procedure permitted examination of the Parallel Analysis (PA; Horn, 1965) and Velicer’s minimal average partial (MAP; Zwick & Velicer, 1986) criteria for factor extraction. Given that psychopathy scores usually have nonnormal distributions and that the items were answered on an ordinal scale, we conducted a PA and MAP on both the polychoric and Pearson correlation matrices (see Cho, Li, & Bandalos, 2009). We used the statistical package R (http://www.r-project.org/), which is capable of handling a polychoric and Pearson matrix when calculating such statistics. To supplement this approach, we examined eigenvalues and scree plot graphs—all of which agreed with the PA and MAP criteria.

The second step was to conduct a series of exploratory factor analyses (EFAs) in order to isolate factors that fit the Hare Four-Factor model of psychopathy. Here we discuss only B-Scan factors directly related to psychopathy. These EFA procedures were carried out with Mplus because of its ability to model nonlinear (i.e., ordinal) data (Muthén & Muthén, 2010). In all cases, we used the mean and variance adjusted weighted least squares (WLSMV) estimation procedure. Given the ordinal nature of the items, the items were treated as polytomous and analyzed using polychoric correlations via WLSMV, a preferred method for this analysis (Muthén & Muthén, 2010). We note that use of maximum likelihood resulted in a similar pattern of findings.

Results

The results of the PA identified six factors. This solution was obtained for both polychoric and Pearson solutions. We then entered the data into an EFA procedure, extracting six factors. Two factors were not directly relevant to psychopathy but were considered important in evaluating corporate potential and performance. We tentatively described them as an “ability” dimension (e.g., has the knowledge to perform his/her job well) and a “disruptive behavior” dimension (e.g., enjoys being disruptive at times). They were similar to the performance and presentation style ratings identified in the corporate psychopathy study by Babiak and colleagues (2010). That is, although not directly part of the psychopathy construct, they appear to be related to corporate performance and perhaps leadership style. Because the present study’s goal was to test the viability of a four-factor structure of psychopathy, similar to other well-established derivatives of the PCL-R, we decided to remove items that loaded on these two factors and items that did not sufficiently load on one of the remaining four factors. These two factors will be addressed in future research testing the B-Scan in organizational settings. This left us with a pool of 38 items. We then conducted an EFA on these items. The first four eigenvalues were greater than 1.5, suggesting a four-factor solution. The fourth factor, which consisted of aggression-related items, had only five items with loadings greater than .40, as did manipulation-related items. Two other factors had more than five items with a loading of .40 or greater. In order to create a balanced scale, we selected the best five from each factor (i.e., items that were not redundant with another item, had the highest loading, and/or had the lowest loading with other factors). The result was a set of 20 items (five per factor) to represent the reduced B-Scan scale. Finally, these items were subjected to a new technique available in Mplus referred to as exploratory structural equations modeling (ESEM). The advantage of ESEM is that items can freely cross load (EFA), but model fit (SEM) is also estimated. In this sense, it is a more open test of a model than conventional CFA, which usually involves specific item-to-factor relations. The ESEM identified four factors with an eigenvalue greater than 1.25. With the exception of one item on the Callous/Insensitive factor (“threatens co-workers”), all items loaded sufficiently on their respective factor (i.e., >.40; e.g., Factor 1 mean loading = .63, range: .48 to .89; Factor 2 mean loading = .74, range: .65 to .86; Factor 3 mean loading = .74, range: .67 to .82; Factor 4 mean loading, .42, range: .31 to .51). The overall fit of the four-factor ESEM was acceptable (TLI = .97; SRMR = .03). All of these values exceed conventional cut-off criteria (Marsh, Hau, & Wen, 2004). Furthermore, each item clearly mapped onto the four well-known PCL-R-based psychopathy factors (i.e., Interpersonal, Affective, Lifestyle, and Antisocial). However, given that the B-Scan (latent) factors are meant to have utility in a corporate environment, we labeled them as follows: Manipulative/Unethical, Callous/Insensitive, Unreliable/Unfocused, and Intimidating/Aggressive. Coefficient alpha (α) for the total scale score was .90. Table 1 lists the (manifest or observed) means, standard deviations, mean interitem correlations, factor intercorrelations, and α for each factor.

Sample 2: Confirmatory Factor Analysis

In Sample 1 we identified a preliminary 20-item B-Scan scale consistent with the four PCL-based factors of psychopathy. The next step was to confirm this factor structure and its reliability. Participants in Sample 2 were 806 working adults recruited on Amazon’s MTurk website. The demographics of participants and supervisors were similar to those in Sample 1 (59% women; mean age = 30.3, SD = 10.3; 68% European heritage, 12% East Asian, 5% Latino, 6% African heritage, 4% other mixed ethnicities; 58% of the supervisors were men). In addition, participants reported that they had known their supervisors for an average of 4.5 years. After filling out demographics, participants then rated their supervisors online with the same 113 B-Scan items used in Sample 1, as part of a larger study on personalities in business. They received a nominal fee for their participation.

We conducted a CFA on the 20-item B-Scan model identified in Sample 1. We again used the WLSMV estimation procedure as recommended when analyzing ordinal (i.e., Likert-like) data (Muthén & Muthén, 2010). We used the Tucker-Lewis Index (TLI) and the standardized root mean square residual (SRMR) as our primary tests of model fit. Our current sample (e.g., >500) was sufficient for testing a model consisting of less than 70 parameters (i.e., 20 items in a 4-factor model). Specifically, the 20-item model estimates 46 parameters, which is well within the 10:1 subjects-to-parameters ratio recommended by Bentler (1995).

Results

The CFA results for the 20-item model (four correlated factors, five items per factor) selected in Sample 1 had acceptable fit to the Sample 2 data, $\chi^2(75) = 692.46$, $p < .001$, TLI = .93, SRMR =
As shown in Figure 1, the resulting model replicated the four psychopathy factors found in Sample 1. In addition, the total score and each factor score were about as reliable as those in Sample 1 (see Table 1 for means, standard deviations, alphas, mean interitem correlations, and factor intercorrelations).

### General Discussion

This study provides support for a four-factor structure of the B-Scan 360, an instrument designed for managers, subordinates, and peers to assess corporate psychopathy in others. In Sample 1, participants rated their supervisors on the original set of B-Scan items. Exploratory analyses of the items yielded a 20-item, four-factor model. In Sample 2, confirmatory factor analyses replicated this model. These results provide initial empirical evidence for a reliable structural model of the B-Scan, one that is conceptually similar to the four-factor structure of the PCL-R and its derivatives.

Within an organizational setting, psychopathic traits are likely to find expression in behaviors that are self-serving, damaging to the organization and its members, or covertly unethical or illegal, such as manipulation, deception, intimidation, threats, coercion, bullying, fraud, and corruption. The features reflected in the four factors of the B-Scan seem to be related to workplace deviant behaviors previously described in business literature, such as organizational retaliatory behavior (Skarlicki, Folger, & Tesluk, 1999), workplace bullying (Mathisen, Einarsen, & Mykletun, 2011), and interpersonal deviance (Bolton, Becker, & Barber, 2010). Furthermore, we believe that employees high on psychopathic traits will exhibit few behaviors that facilitate organizational functioning and

#### Table 1

<table>
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<tr>
<th>B-Scan 360</th>
<th>1</th>
<th>2</th>
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<th>5</th>
<th>M (SD)</th>
<th>MIC</th>
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<td>Sample 1 (n = 340)</td>
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<td>1. Manipulative/Unethical</td>
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<td>2. Callous/Insensitive</td>
<td>.51 (.99)</td>
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<td>3. Unreliable/Unfocused</td>
<td>.47 .51 (.87)</td>
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<tr>
<td>4. Intimidating/Aggressive</td>
<td>.46 .64 .44 (.92)</td>
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<td>5. Total Score</td>
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<td>Sample 2 (n = 806)</td>
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<tr>
<td>1. Manipulative/Unethical</td>
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<td>2. Callous/Insensitive</td>
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<td>3. Unreliable/Unfocused</td>
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<td>4. Intimidating/Aggressive</td>
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<tr>
<td>5. Total Score</td>
<td>.46 .67 .49 .55 (.88)</td>
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Note. For all factor intercorrelations, p < .001. Alpha reliability is on the diagonal. Factor scores were calculated using summed item grouping scores. MIC = mean interitem correlations.

Figure 1. Four-factor B-Scan model of psychopathy.
many behaviors that harm the organization and its members. Such a pattern of behaviors, along with other factors, has been associated to job performance (Rotundo & Sackett, 2002), an important variable in organizational settings.

Implications of These Findings

We believe that our findings provide important information about the underlying personality structure of counterproductive work behavior. Thus far, the business literature has focused more on identifying these toxic behaviors than on understanding their origins. We propose that psychopathic features in employees (as measured by the B-Scan) may help to explain these counterproductive behaviors.

The originality of the B-Scan lies in the fact that it is a 360 degree tool for the evaluation of psychopathic features in business settings. The present study focused on the validation of the B-Scan when used to evaluate psychopathic traits in others (data on the validation of the B-Scan Self, its sister version, will be presented in another manuscript). Given the self-serving and deceptive nature of the psychopathic personality, corroboration of self-report scores by others is vital, especially in business settings. Even trained industrial/organizational (I/O) psychologists, if not made aware of problematic evaluations or profiles, may think certain individuals are good fits for the organization when, in fact, they are potentially toxic. Babiak and colleagues (2010) observed that some executives tend to rely on their “gut feeling” to judge candidates and that “unfortunately, once decision-makers believe that an individual has future leader potential, even bad performance reviews or evaluations from subordinates and peers do not seem to be able to shake their belief” (Babiak et al., 2010, p. 190). The addition of data from a standardized assessment instrument, based on the observations of others who may work closely with such persons, could counterbalance inaccurate perceptions.

Limitations and Future Research

The results are based on a sample from MTurk and may not generalize to other means of collecting B-Scan data from organizations or corporate environments. We chose MTurk because it provided us with data from a wide array of individuals with different occupations and supervisors, and different work environments and settings. Given such diversity of participants, it is unlikely that the results would be limited to a particular work environment. Nevertheless, MTurk samples have limitations that could potentially affect external validity, such as the fact that employees are not all from the same organization and that organizational context and other variables cannot be controlled. We believe that future research using corporate samples is needed in order to establish generalizability as well as the predictive validity of B-Scan scores and organizational variables.

In sum, given the destructive nature of individuals high on psychopathic features, the development of a sound and reliable business-friendly measure is badly needed. Our results suggest that our instrument may represent such a measure and although more research is needed before it can be used in organizational settings, we think that this first validation study of the B-Scan is an important step forward in the study of corporate psychopathy.

References


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