Counterproductive Behavior Index™ (CBI)

Technical Manual
Version 2.0

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What is an Integrity Test?

Deviant behavior has always been an issue for employers because of its widespread nature. For example, McGurn (1988) reported that over three-quarters of all employees admitted that they had stolen from their employers at least once. Other deviance in the workplace, such as vandalism, computer misuse, absenteeism, and tardiness, has been reported by between one-third and three-quarters of employees surveyed (Harper, 1990). Studies show that almost one-quarter of employees had knowledge of recent illicit drug use by co-workers (Lehmann, Holcom, & Simpson, 1990) and that over 40 percent of women employees reported sexual harassment on the job. Deviant behavior at work is clearly a major social and economic issue for both employers and society.

The direct costs of this workplace deviance have attracted considerable research interest. The problem of employee theft of merchandise (sometimes termed "shrinkage") and cash is an enormous one. Estimates of the total annual cost of such losses range from $40 billion to $120 billion (Buss, 1993; Camera & Schneider, 1994). Further, the annual cost of workplace deviance such as violence is estimated at over $4 billion (Bensimon, 1994), and the overall cost of a wide range of workplace deviance ranges from $6 billion to $120 billion annually. Regardless of how seriously one takes these estimates, the magnitude of the problem should be self-evident.

It is, therefore, no surprise that a major concern in personnel selection has been how to address this problem. Most of the currently available assessment instruments have chosen to focus on the single issue of the integrity or honesty of job candidates. Integrity tests, also known as tests of honesty or trustworthiness, address the most costly and directly measurable part of workplace deviance—theft.

Resolving employer concerns about counterproductive behaviors on the job, especially dishonesty and theft, has always been part of the selection process. The traditional procedure for identifying job applicants who were potentially dishonest was the polygraph. But extensive research showed that the polygraph was simply not very accurate in employment settings (Lykken, 1981), and in 1988, the United States Congress outlawed its use for pre-employment job screening.

Questionnaires to identify job applicants who pose an employment risk have always been available, but they have now become the primary tool for pre-employment screening. When the term *integrity test* first arose, it referred primarily to questionnaires for the detection of potential dishonesty. These tests typically asked direct questions about the applicant's degree of honesty in previous employment and other settings.

Over the years, the content of integrity tests has been expanded to include direct questions about additional areas, such as lack of dependability and substance abuse. The use of indirect or personality tests for pre-employment screening has also been attempted; that is, general personality questionnaires assessing a broad range of traits that are believed to underlie desirable and undesirable job behaviors. But this approach has had to be abandoned for two important reasons: (1) these general personality items have been found to be less valid than more direct items for detecting deviant behavior in the workplace (Camera & Merenda, 2000)

and (2) a number of states, including California, have outlawed the use of general personality test items in pre-employment screening because they are seen as invasive of applicants' privacy and lacking in validity, especially face validity.

Thus it is clear that the identification of job applicants who are likely to show disruptive or destructive behavior on the job is best accomplished by asking directly relevant statements about the applicant's prior behavior, particularly on-the-job behavior. These statements include obvious items such as "I have stolen money or merchandise from my employer" and "I am frequently absent from work without any good reason." The use of obvious statements seems counter-intuitive. Why in the world would an applicant for a job interview ever respond in the affirmative? The fact of the matter is that a significant number of applicants actually do admit to such misbehavior, some to an astounding degree. A number of explanations have been advanced to explain this surprising level of candor (Jones & Terris, 1991). The most typical reason is respondents' reported belief that everybody engages in such behavior; that is, "everybody steals," and denial is unnecessary and unreasonable. But regardless of why applicants admit their misdeeds, it is clear that they do and that those integrity tests containing mainly items of this nature are the most valid (Ones, Viswesaran, & Schmidt, 1993; 1995; Murphy, 1993; Goldberg, Grenier, Guion, Sechrest, & Wing, 1991).

The psychometric technology that forms the basis for constructing paper-and-pencil tests has developed considerable sophistication over the past 20 years, and a great deal of research has been conducted to evaluate the validity of tests used in pre-employment screening. This research, which was reviewed and summarized by Goodstein and Lanyon (1999), showed that tests that asked direct questions, were carefully constructed, and focused on pre-employment selection were the most satisfactory and, moreover, were more successful than the indirect tests that assessed general personality traits.

The research reviews cited above show agreement that **concerns about honesty** and **concerns about dependability** on the job should be a primary focus in pre-employment screening. There is increasing interest in assessing **substance abuse, including alcohol,** and **concerns about aggression** and violence in the workplace have also become issues. In addition, with the near-universal use of computers in the workplace, the potential now exists for serious disruption through **computer abuse.** And **sexual harassment** in the workplace is becoming an increasingly important concern. These six areas of workplace deviance or counterproductive behavior have thus emerged as primary concerns in pre-employment selection and, therefore, belong within the scope of integrity testing. Finally, there is always a concern about the extent to which respondents have distorted their answers in their own self-interest. Based on recent advances in the technology of test construction, it is now possible to make a satisfactory assessment of the degree to which respondents deliberately try to create a **good impression** and thus to interpret the test results of those respondents accordingly.

In summary, the state of the art in pre-employment testing suggests that a genuinely useful integrity test should tap each of these six important areas and include a measure of good impression. None of the currently available integrity tests appears to utilize this approach, nor do they provide adequate information about test development or their procedures for addressing the inherent methodological problems involved in all such psychometric instruments. The Counterproductive Behavior Index (CBI) represents our best efforts to provide a multi-phasic measure of integrity, transparent in its development and evolving continually over time.

Introduction to the
Counterproductive Behavior Index™ (CBI)

The CBI is a contemporary integrity test—a cost-effective screening procedure for identifying job applicants whose behavior, attitudes, and work-related values are likely to interfere with their success as employees. The CBI consists of an objective questionnaire with 140 true/false items that can be completed by the job applicant in about 15 minutes. There are two forms of the test. One form is administered, scored, and interpreted by computer. It yields an objectively generated report addressing degree of potential concern about the six major areas identified above, a measure of Overall or total concern, and an assessment of self-serving response bias. The other form is a paper-and-pencil version in which applicants answer the questions on an answer sheet that is then hand-scored and profiled by the test administrator, yielding the same information as the computer-based version. The content of the two forms is identical, and there is no reason to believe that the scores yielded by the two forms are not comparable.

The Eight CBI Scores

Either by using the scoring key (for the paper-and-pencil version) or automatically (with the computer-based version), the CBI yields eight scores. Sample items are given in Table 1. The basic meaning of the scores are as follows:

Dependability Concerns. Low scorers are dependable, conscientious, and reliable. High scorers can be undependable, careless, lazy, and disorganized.

Aggression Concerns. Low scorers handle their feelings well and are unlikely to be disruptive. High scorers can be aggressive, hostile, disruptive, and have poor control of their anger.

Substance Abuse Concerns. Low scorers have no problems with alcohol and/or illegal drugs. High scorers report substantial use of alcohol and/or illegal drugs and may be disruptive.

Honesty Concerns. Low scorers have no problem with workplace dishonesty. High scorers have the potential for dishonest behavior in the workplace.

Computer Abuse Concerns. Low scorers use their workplace computers only for work-related uses. High scorers use their computers in ways that are unrelated to their work activities or are disruptive to their work.

Sexual Harassment Concerns. Low scores are unlikely to engage in sexual harassment at work. High scorers have attitudes and behaviors regarding sexuality that are likely to be considered as harassment by the opposite sex.

Overall Concerns. Low scorers report few instances of workplace deviance. High scorers report a wide range of deviant behaviors in the workplace and are likely to be problematic employees. (The Overall Concerns score is included in order to help identify applicants whose individual scale scores might all fall below the cutting score for inclusion in the Concern category, but whose total score does identify them as worthy of special attention. It is important to note that high Overall scores still require a close examination of the six individual scale scores.)

Good Impression. Low scorers are open about acknowledging their normal faults and imperfections. High scorers deny normal shortcomings and exaggerate personal virtues, suggesting that their scores on the other scales may be artificially depressed by their efforts to make a good impression. Scores on this scale can be used to determine the degree of confidence that should be placed in the remainder of the profile.

<div align="center">

Table 1
Sample Items from the CBI

</div>

Dependability Concerns

My bosses know that they can count on me.

At work, I often daydream.

Aggression Concerns

It's hard to control your feelings when you're caught up in traffic.

When someone hurts me, I tend to get revenge.

Substance Abuse Concerns

I have used an illegal drug on the job in the past year.

Drinking on the job is a real safety hazard.

Honesty Concerns

At work, I have shown a fellow employee how to beat the system.

Most people lie a little at work to protect themselves.

Computer Abuse Concerns

I would not use my computer at work to send and receive e-mail if it was against company policy.

It is OK for employees at work to use their computers to play computer games.

Sexual Harassment Concerns

Making sexual remarks is just part of human nature.

I have put my arm around a member of the opposite sex at work.

Good Impression

I have never acted without thinking first.

I obey all the rules, all the time.

How to Use the
Counterproductive Behavior Index

Counterproductive Behavior Index Profile

A sample interpretive report on the CBI is shown on the next page. For easy reading, high scores indicate either a **serious concern** or a **concern** about that area, depending on the level of the score. Thus, an applicant who answered a number of questions about dependability in such a way as to indicate that he or she has had prior difficulties or problems in being dependable would have produced a high score on Dependability Concerns. The graphic report shows a profile of an applicant's scores on each of the six areas of concern, plus the Overall score, together with the score on the Good Impression scale (which indicates a less-than candid approach to answering the questions). The profile is constructed so that the higher the score on each scale, the more reason there is for concern.

The profile contains three bands, or levels, of concern. Scores that fall in the Serious Concern band are in the upper 5 percent of the standardization population. Scores that fall in the Concern band are between the upper 5 and 15 percent of the standardization population. Scores that fall below these levels (i.e., below the top 15 percent) are considered to be of No Concern. A statement made about each scale based on the norms indicates the extent to which an applicant's score is high enough to suggest a potential problem (a Concern or a Serious Concern) in each of the areas. Separately from the profile, a statement is made about the applicant's score on the Good Impression scale, indicating the degree of defensiveness/ distortion in responding to the questions.

It is imperative to note that hiring decisions must never be made solely on the basis of an applicant's profile on the CBI. Rather, the scores on the profile indicate areas that need to be followed up on in a subsequent employment interview, using behavioral interviewing techniques. It is beyond the scope of this manual to teach behavioral interviewing techniques. Simply put, in conducting a behavioral interview the interviewer asks an applicant in a neutral manner for specific behavioral examples of instances when the individual engaged in certain critical activities. For example, an interviewer could ask a candidate with a high score on Honesty Concerns, "Tell me about a time when you stole something from your employer." Depending on the applicant's specific responses, additional questions should be asked about the frequency of such behaviors, their consequences, and so on. The purpose of the behavioral questions is to help the interviewer understand the past behavior of the applicant, since past behavior is the single best predictor of future behavior.

Counterproductive Behavior Index™ Profile
Version 2.0

Name: John R. Smith   **Date:** 2/25/03   **Position:** Customer Service Representative

Test Validity Concerns Good Impression (GI) Score

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				X																

Scale Score	Dependability (Dp) Concerns	Aggression (Ag) Concerns	Substance Abuse (SA) Concerns	Honesty (Hn) Concerns	Computer Abuse (CA) Concerns	Sexual Harassment (SH) Concerns	Scale Score
20							20
19							19
18							18
17							17
16							16
15							15
14							14
13							13
12			X				12
11							11
10		X					10
9					X		9
8							8
7				X			7
6							6
5						X	5
4							4
3							3
2	X						2
1							1
0							0
Scale Score	Dependability (Dp) Concerns	Aggression (Ag) Concerns	Substance Abuse (SA) Concerns	Honesty (Hn) Concerns	Computer Abuse (CA) Concerns	Sexual Harassment (SH) Concerns	Scale Score

Overall Concerns Score

0 – 38	39 – 59	60 – 120
	X	

RECORDING SCORES

Transfer your scores from the Scoring Sheet to the corresponding boxes on this Profile for a visual representation of a candidate's scores.

COLOR KEY

Little/No Concerns
Scores in this shaded area indicate that the applicant **is not likely** to engage in counterproductive behavior.

Concerns
Scores in this shaded area indicate that the applicant **may** engage in counterproductive behavior.

Serious Concerns
Scores in this shaded area indicate that the applicant **is likely** to engage in counterproductive behavior.

WARNING: Information contained on this CBI graph is intended for confidential use only.

Score

2

Dependability Concerns: *Mr. Smith's score does not suggest a concern about dependability.*

   High Score: Undependable, careless, unmotivated, and disorganized
   Low Score: Dependable, conscientious, and reliable

Score

10

Aggression Concerns: *Mr. Smith may be likely to be disruptive because of angry feelings or behaviors.*

   High Score: Angry, hostile, poor control of anger, could be disruptive
   Low Score: Handles feelings well, unlikely to be disruptive

Score

12

Substance Abuse Concerns: *Mr. Smith is likely to abuse alcohol or illegal drugs in the workplace.*

   High Score: Alcohol and/or illegal drug usage may be disruptive
   Low Score: Is not likely to use alcohol and/or illegal drugs in the workplace

Score

7

Honesty Concerns: *Mr. Smith's score suggests no potential problem with dishonesty.*

   High Score: Potential for dishonest behavior in the workplace
   Low Score: Is likely to demonstrate honest behavior in the workplace

Score

9

Computer Abuse Concerns: *Mr. Smith may be likely to misuse computer equipment.*

   High Score: Potential for misuse of computer in a disruptive or inappropriate manner
   Low Score: Is likely to use computer equipment appropriately

Score

5

Sexual Harassment Concerns: *Mr. Smith is unlikely to have a problem with sexual harassment.*

   High Score: Potential for causing disruption in the workplace through sexual harassment
   Low Score: Is not likely to show behaviors that could be viewed as sexual harassment

Score

45

Overall Concerns: *Mr. Smith may show workplace deviance in one or more ways.*

   High Score: May show workplace deviance in one or more ways
   Low Score: Not likely to demonstrate workplace deviance

Score

4

Good Impression: *Mr. Smith is likely to have answered the questions truthfully.*

   High Score: Likely to be under-reporting, or not being truthful in answering the questions
   Low Score: Likely to have answered the questions in an open and truthful manner

Thus, once areas of concern are identified for a particular applicant, a series of questions that will allow an in-depth understanding of the area(s) of concern should be asked by the line manager, human resources professional, or whoever is conducting the screening. For each question in the CBI, a series of questions are provided for follow-up. If the profile reveals scores in the Serious Concern or Concern band, follow-up questions in relevant area(s) of concern are an essential part of the selection process and will enable the interviewer to better understand the basis for the applicant's answers. These questions will be displayed automatically for the interviewer in the computer version of the CBI, while the paper-and-pencil version requires the interviewer to select the appropriate questions from a complete set of follow-up questions found in Appendix E. The applicant's answers to the follow-up questions should be the basis for all final decisions about the suitability of the applicant for employment.

One very important caution remains in using the CBI: the results of the CBI should never be discussed with the applicant. You should not indicate to any applicant that he or she was disqualified by a single measure, particularly a psychological test. If applicants ask about the CBI results, they should be told that the results are simply a part of a package of information that needs to be analyzed and understood. If an applicant is not to be hired, there is no obligation on the interviewer's part to explain the reasons for that decision. Rejected applicants can simply be told that there are other applicants better qualified for the job. If the job remains open and this becomes known to applicants, unsuccessful applicants can be told that they did not seem to match the job requirements. Never, ever, suggest that an applicant was not selected because of answers to the CBI!

Appendices

Appendix A:
Developing the
Counterproductive Behavior Index

Our goal in developing the CBI was to produce a cost-effective questionnaire using a state-of-the-art psychological assessment technology to screen job applicants in the six basic areas affecting productivity: dependability concerns, aggression concerns, substance abuse concerns, honesty concerns, computer abuse concerns, and sexual harassment concerns. A good impression scale was also needed to assess the extent to which applicants slant their responses to produce a distorted, overly virtuous view of themselves.

In the context of a book-length review of the field of assessment in general, the authors have documented the state of the art in developing measures of this type (Lanyon & Goodstein, 1997). Those guidelines were followed in the present project with only minor variations.

Universe of Content

In any psychological assessment measure, the relevance of the item content is a necessary (though not sufficient) condition for validity (Jackson, 1971). Therefore, the first step in developing a test is to comprehensively define and describe the content of each of the areas that are to be assessed. Following this rule, a "universe of content" was prepared for each of the six areas of the CBI, based on a review of the relevant empirical and theoretical literature plus the authors' practical knowledge gained over many years of assessment experience.

Item Preparation

The next step, item preparation, was performed separately for each universe of content. First, the content of each area was organized or clustered into its various facets or elements. Next, simple statements were written in the first person that representatively and comprehensively covered each of the elements. Because it is generally considered that at least 20 items are needed in order to have adequate reliability for a true/false questionnaire scale, and because an accepted rule of thumb is to begin with at least twice as many items as will be ultimately used, we wrote 50 or more items to represent each of the original six universes of content. Specific rules and procedures for writing items are described in Lanyon and Goodstein (1997). In particular, we considered the question of a balance between those items that would indicate a concern about the area when answered true and those that would indicate a concern when answered false; and we attempted to write items that were clear and unambiguous, specific rather than general, and not offensive or potentially threatening in their language.

Through a preliminary editing process, we reduced the pool to 40 items for each area, with a balance whenever appropriate between items referring to specific, relevant behaviors ("When someone hurts me, I try to get revenge") and items referring to attitudes toward such behaviors ("It's OK for employees to play computer games at work"). Because items related to computer abuse are highly specific in content and are limited in scope, only 25 items were prepared in that area. Thus, the preliminary form of the CBI contained a total of 225 items and was labeled

Form A. This preliminary form did not include the 40 items prepared for sexual harassment concerns, which were developed separately, utilizing a separate group of employees (see below). However, the sequence of steps was the same as for other scales.

In preparing a preliminary pool of items, it is appropriate to consider potential issues such as skewness and social desirability. Skewness refers to items that are almost always answered in one particular direction. A sample item would be "I nearly always take a drink before I go to work," which is answered "false" by the overwhelming majority of job applicants. Such items are often viewed as not contributing significantly to the usefulness of a scale. But because the purpose of the CBI is to identify those few persons with extreme characteristics, a certain number of "extreme" items were considered appropriate for inclusion.

In regard to social desirability, it is usual to avoid including items that are extreme on this dimension (i.e., very high or very low in social desirability) because applicants would presumably avoid responding truthfully to them, even if the item actually applied to them. An example of an extremely low social desirability item is "I regularly steal from my employer." Once again, however, such items have a definite value in the present context because the goal is to screen out persons with extreme characteristics. Special statistical safeguards were employed (such as partial correlations; see discussion below) to ensure that such items contributed meaningfully to the assessment process despite their strong relationship to social desirability.

Final Selection of Items

The last step in scale construction is to select those items from each of the preliminary item pools that are most centrally related to the area to be assessed, while at the same time ensuring that the group of items selected for an area continues to be representative of the area.

For this purpose, the 225-item preliminary questionnaire (Form A) was administered to 191 existing employees (89 males, 102 females) drawn from several different companies and representative of employees for whom the test is intended. The questionnaire was completed anonymously and on a voluntary basis by individuals whose age, educational level, and employment level were similar overall to those of the adult work force.

To analyze the data, the six item-groups were considered to be six preliminary scales, each a separate preliminary measure of its own content area. Preliminary scores were generated for each of the 191 respondents in each of the six areas by summing the items that were endorsed in the scorable direction. For example, each respondent received a preliminary score on a 40-item scale assessing Dependability Concerns. We also computed the endorsement frequencies (percentage of respondents answering true or false to each item) for all items. We then computed the simple correlations of all 225 items with each of the six preliminary scale scores. As expected, the majority of the items written for a particular area showed highly significant correlations with the preliminary score for that area. In addition, most of the items were more highly correlated with their own area than with any of the other five areas.

The next step was to take account of socially desirable responding, since respondents' scores can be influenced by the degree of social desirability (also called defensiveness, good impression, or faking-good) with which they responded to the questions. To determine what the correlation of each item would have been with the preliminary score of its scale (and with the

other scales) if respondents had not been influenced by social desirability, we repeated the correlation analyses using partial correlations, partialing out the relationship with the Good Impression scale. This procedure enabled us to set aside the influence of social desirability in the relationship between each of the items and the preliminary scale scores. Partial correlations reflect the relationship of each item to the preliminary scores independent of social desirability.

Based on all the statistical data, we made the final selection of 20 items for each of the six scales as follows: For the five scales other than Good Impression, we selected those items that (a) were written especially for that scale, (b) were correlated highly and significantly with the preliminary score for that scale, and (c) showed partial correlations (that is, the relationship when free from the effects of social desirability) with the preliminary score that were also highly statistically significant. We also considered a few items for inclusion on a scale if they met the statistical requirements for that scale better than another scale for which they were originally written. As an additional criterion, because the CBI was designed primarily to screen out applicants with potential behavior problems on the job, we included at least 10 items out of 20 for each scale that reflected behaviors rather than attitudes. A final criterion was that the 20 items selected for each scale were as representative as possible of the original content clusters or facets for each area.

In selecting the 20 items for the Good Impression scale, the same criteria were employed as described above, except for the use of partial correlations. (Clearly it would not be possible to partial out the effects of good impression on the Good Impression scale.)

A summary of the item characteristics of each scale is given in Table 2 on the next page, which shows the median and range of correlations of the selected items (both simple correlations and partial correlations) with the preliminary score for each scale. All but two of the correlations, including partial correlations, were .30 or greater, and all exceeded the .001 level of statistical significance. The magnitude of the partial correlations for the items that were selected clearly demonstrates that when the influence of social desirability is statistically taken out of the correlations between individual items and total score, there is very little shrinkage in the size of the correlations. This finding indicates that there is substantial "true" variance remaining and allows the conclusion that the items of the CBI are robust and do measure something significantly more than just making a good impression.

Addition of the Sexual Harassment Scale

To develop the Sexual Harassment Concerns scale, we prepared a separate 60-item question- naire in which the 40 preliminary sexual harassment items were mixed randomly with the 20 final items of the Good Impression scale (see below). We administered this 60-item form to 178 existing employees drawn from several different companies. Of the 116 employees who stated their gender, 36 were male and 80 were female.

We continued to follow the original procedure in generating a preliminary score for each respondent on Sexual Harassment Concerns and correlating each of the 40 items with this score. We then took account of social desirability by computing Good Impression scores and repeating the analysis using partial correlations. The 20 items selected for the final version of the scale all showed partial correlations with the preliminary score that were highly significant.

Table 2
Summary of Correlations Between
Individual Items and Preliminary Scale Scores

	Simple correlation		Partial correlation	
	Median	Range	Median	Range
Dependability Concerns	.44	.30–.59	.45	.35–.63
Aggression Concerns	.44	.38–.53	.42	.33–.51
Substance Abuse Concerns	.55	.47–.69	.54	.44–.67
Honesty Concerns	.49	.37–.63	.43	.30–.66
Computer Abuse Concerns	.50	.31–.73	.47	.30–.71
Sexual Harassment Concerns	.42	.18–.55	.41	.26–.52
Overall Concerns	.50	.30–.73	.46	.30–.71
Good Impression	.54	.50–.69	—	—

Note: The signs of the correlations, whether positive or negative, were disregarded in preparing this table.

p < .001 for all correlations except one item on the Sexual Harassment Concerns Scale.

Norms and Demographic Data

We now turn our attention to the subject population. Means and standard deviations were computed for the scales based on the 191 subjects described above (and based on the separate group of 178 subjects for Sexual Harassment Concerns). These means and standard deviations are shown in Table 3 on the following page. For the group of 191 subjects, the mean age was 32 years, and the mean education level was 13 years. For the group of 178 subjects, the mean age was 39. Also shown are the means and standard deviations separately for males and females. As one would expect, males report themselves to be less dependable, more aggressive, heavier substance abusers, somewhat less honest, and more likely to engage in computer abuse and sexual harassment than females. These differences, of course, lead the males to produce higher Overall Concerns scores than the females. Females, on the other hand, are more concerned about making a good impression. All differences between males and females were statistically significant at the $p < .01$ level except for the Good Impression Scale ($p < .05$) and the Sexual Harassment Concerns scale ($p < .10$). The lack of a more significant difference for the latter scale is due in part to the small number of subjects who reported their gender, especially for males.

The differences on the six Concerns scales are partly due to the fact that, as indicated by Good Impression scores, women set out to make more of a good impression than men. This tendency, however, does not account for all of the discrepancies between the means of men and women on the six Concerns scales. These differences are also due to the fact that men do tend to engage in more disruptive workplace behaviors than women. Based on the Overall means (and not taking Good Impression into account), the overall difference between men and women is about four-tenths of a standard deviation.

Table 3
Means and Standard Deviations of
CBI Scores Overall and For Males and Females Separately

	All Subjects (*N* = 191)		Males (*N* = 89)		Females (*N* = 102)	
	M	**SD**	**M**	**SD**	**M**	**SD**
Dependability Concerns	2.59	3.17	3.15	3.62	2.10	2.65
Aggression Concerns	4.87	3.98	5.25	3.82	4.54	4.10
Substance Abuse Concerns	3.16	3.69	4.17	4.73	2.28	2.12
Honesty Concerns	4.64	4.07	5.37	4.15	4.00	3.91
Computer Abuse Concerns	3.50	3.54	4.04	3.83	3.03	3.21
Sexual Harassment Concerns*	5.01	3.08	6.00	3.51	4.72	2.76
Overall Concerns	18.76	14.40	21.98	16.01	15.95	12.24
Good Impression	8.30	5.42	7.69	5.10	8.84	5.66

Note: High scores represent **high concern** about an area; **low scores** represent **low concern.**

*N = 178 overall, 36 for males, and 80 for females. Gender was not reported by 62 subjects.

We note that the CBI focuses on behaviors and attitudes that are disruptive in the workplace. These behaviors are commonly referred to as externalizing ways of coping and are contrasted in the psychological literature with internalizing ways of coping, such as depression, debilitating anxiety, and psychosomatic problems. Examination of the norms for psychological tests that report separate norms for males and females (such as the Minnesota Multiphasic Personality Inventory—2 and others) clearly shows that males score normatively higher on externalizing behaviors than females, and females score normatively higher on internalizing problems than males. Thus, the differences found in the norms of the CBI simply reflect the characteristics of men and women in general. Because these gender differences appear to reflect true differences between males and females, we have not presented separate norms for men and women. The use of separate gender norms would distort the relative frequency of disruptive behavior in the workplace.

We next address the question of possible differences among ethnic groups in the mean scores for the scales of the CBI (except for the Sexual Harassment scale). Of the 182 subjects who specified their ethnicity, 57 were African American. Comparison of the means of the African American subjects with the total group showed small and non-meaningful differences on the six scales. (The number of Hispanic subjects was too small to permit a comparison.) These preliminary data suggest that the test is applicable to African American job applicants; however, more extensive normative data are needed in order to draw a more definitive conclusion. The collection of such data is an ongoing process. These preliminary results suggest that there will be no adverse impact from using this instrument.

Turning to the 178 subjects on which the norms for the Sexual Harassment Concerns scale are based, 155 subjects specified their ethnicity as either white (127) or nonwhite (28). The mean scores for these two groups were almost identical (5.1 and 5.0 respectively), suggesting that this scale too is applicable to nonwhite as well as white respondents.

Tables 4 and 5 show the means and standard deviations of the scores for three age groups (18–25, 26–40, and 41–59) and for the three levels of education (8–11 years, 12 years, and 13–18 years). The means by age in Table 4 on the following page show that self-reports about aggression, substance abuse, and low dependability all decrease with age. Self-reports of dishonesty and computer abuse are low in the youngest age group, increase in the middle-aged group, and are low in the oldest group. Self-reports of sexual harassment remain steady across all levels. Scores on the Good Impression scale steadily decline with age. We have no current explanation for these differences, but we expect to track them over time with the expectation that our understanding will increase with the availability of additional data. These differences in scores with age can be taken into account when interpreting individual and group profiles.

Table 4
Means and Standard Deviation of
CBI Scores for Three Age Groups

	Age 18–25 (N = 56)		Age 26–40 (N = 78)		Age 41–59 (N = 35)	
	M	SD	M	SD	M	SD
Dependability Concerns	3.02	3.94	2.56	3.09	2.14	2.33
Aggression Concerns	5.46	4.13	4.27	3.57	4.09	3.03
Substance Abuse Concerns	4.73	4.97	2.63	3.13	2.26	2.06
Honesty Concerns	3.34	4.59	4.36	5.66	3.49	3.75
Computer Abuse Concerns	3.68	3.75	3.95	3.93	2.91	2.80
Sexual Harassment Concerns	4.76	3.71	5.13	3.14	5.13	2.91
Overall Concerns	22.23	17.51	17.77	13.17	14.89	10.89
Good Impression	9.91	5.75	7.33	4.70	6.89	5.42

Note: Age was reported by 169 subjects used in the computation of all scores except Sexual Harassment Concerns, for which age was reported by 160 subjects (21, 69, and 70 respectively for the three age groups).

The mean responses broken down by educational level are presented in Table 5 below. Self-reports of lack of dependability and substance abuse are highest among the high school graduates with little difference between those with less than a high school education and those with more. Self-reports of dishonesty and aggression sharply decline with level of education, while computer abuse increases with education. The tendency to make a good impression is highest in the high school educated group, significantly lower in the group with the lowest level of education, and lower still in the best-educated group. There are no ready explanations for these differences, and users may need to attend to these differences in interpreting individual profiles.

To study the relationship between Sexual Harassment Concerns and educational level, subjects were divided into three groups on the basis of their stated occupation: those occupations requiring a high school diploma or less ($N = 50$), some college training ($N = 66$), and a college degree or higher ($N = 36$). Of the 178 subjects, 26 did not report their occupation. In these data, self-reports of sexual harassment were almost identical among the three groups (means = 5.0, 5.2, and 5.0 respectively). Thus, the likelihood of sexually harassing behavior is not related to occupational/education level. The scores were not meaningfully affected by Good Impression.

Table 5
Means and Standard Deviation of CBI Scores
for Three Levels of Education

	8–11 years (N = 24)		12 years (N = 80)		13–18 years (N = 78)	
	M	**SD**	**M**	**SD**	**M**	**SD**
Dependability Concerns	1.96	2.01	3.04	4.09	2.33	2.40
Aggression Concerns	6.54	4.08	5.04	3.88	3.63	3.25
Substance Abuse Concerns	2.83	3.06	3.91	4.75	2.45	2.39
Honesty Concerns	5.50	5.28	4.83	3.97	3.96	3.74
Computer Abuse Concerns	3.21	3.83	3.33	3.90	3.91	3.19
Sexual Harassment Concerns*	5.00	3.49**	5.20	2.87**	5.00	2.89**
Overall Concerns	20.04	15.76	20.14	17.27	16.28	10.17
Good Impression	8.33	4.89	10.54	5.42	6.10	4.74

Note: Education level was reported by 182 subjects.

* N = 152; high school diploma or less (N = 50), some college training (N = 66), and a college degree or higher (N = 36)

** SD = 12 years and less, 13–15 years, and 16 years and more

A Note on Skewness

In constructing most psychological scales, it is considered desirable for the scores on the finished scale to be normally distributed—that is, to be symmetrically represented in a bell-shaped curve, with a comparable number of high scores and low scores. This type of distribution is thought to reflect the way in which most personality traits and other human characteristics naturally occur in the general population—symmetrically distributed, with a comparable number of high scores and low scores.

The CBI has a different purpose and a different rationale. Its goal is to identify those relatively few job applicants who are deviant or extreme on one or more particular behaviors and attitudes that are Counterproductive in the workplace. On such dimensions (such as high potential for aggression, for example), we expect most persons to obtain a low score, with only a few persons getting a high score, which means that the scores on the dimensions are necessarily skewed. To achieve this goal, the items for the CBI were deliberately written so that most people would be expected to answer in the non-problematic direction, with only a few persons answering in the problematic direction. The result is scales that are skewed, with most persons achieving low scores, and long "tails" of the remaining few persons who achieve higher scores. (Thus, inspection of Table 4 on page 18 shows that the mean scores on four of the scales assessing Concerns are less than 5 out of a possible 20 and less than 6 on the remaining two.) Cutting points to indicate that a score is sufficiently high to represent a Concern are then placed along the tail of the skew.

Determination of Cutting Points

The selection of the level at which a score on a scale of Concerns should be considered to represent a real concern can be approached in several different ways. However, no matter what way is used, the test result is always advisory to the company representative who will make the final decision based on knowledge and experience with the particular company and other circumstances. Thus, the proper function of the test is to draw attention to scores that require follow-up by behavioral interviewing and are then considered within the overall decision-making process.

The CBI specifies two different levels of concern. The first cutting point is placed at the 85th percentile, thus identifying the **highest 15 percent** of scorers on each of the scales. The profile indicates that for these persons, there is **a concern** about that particular characteristic. Thus, for an applicant who scores at (or above) the 85th percentile on Honesty Concerns, the profile indicates a concern about honesty.

At a second, higher level of concern, the profile identifies applicants who score in the **highest 5 percent** on a particular scale. For these applicants, the profile indicates **a serious concern** about the particular characteristic. Thus, for an applicant who scores at (or above) the 95th percentile on Honesty Concerns, the profile would indicate a serious concern about honesty.

Appropriate cutting points could also be determined by surveying the human resources personnel of representative companies to determine the proportion of applicants for whom there has been a "concern" or "serious concern" in the past regarding a particular characteristic. For example, human resources personnel could be asked what proportion of their applicants

over the past two years were (or should have been) regarded with caution because of a potential problem with substance abuse, aggression, etc. These proportions, or base rates, could then be utilized in setting relevant cutting points.

Both this process and the one used in the development of the present scales are appropriate procedures. It is emphasized that the development and validation of appropriate cutting points is an ongoing process. We anticipate that these statistics will be progressively adjusted and refined as a more extensive database becomes available.

Appendix B:
Correlations Among the Scales of the Counterproductive Behavior Index

The correlations among the scales of the CBI are presented in Table 6. (Since the Sexual Harassment Concerns scale was developed later, it is not included in this matrix. We intend to produce an updated manual including the Sexual Harassment Concerns scale as soon as data become available.) The pattern of these correlations allows two important conclusions to be drawn about the CBI and the characteristics being assessed by the CBI.

Table 6
Correlations Among the Scales of the CBI

	Aggression Concerns	Substance Abuse Concerns	Honesty Concerns	Computer Abuse Concerns	Overall Concerns	Good Impression
Dependability Concerns	28	59	49	65	75	⁻25
Aggression Concerns		44	63	35	72	⁻35
Substance Abuse Concerns			55	57	81	⁻21
Honesty Concerns				54	84	⁻35
Computer Abuse Concerns					79	⁻31
Overall Concerns						⁻38

Note: Decimal points have been omitted from the correlations.

First, it is noted that the five original Concerns scales correlate only modestly with the Good Impression scale. The correlations range from .21 to .35, with a median of .31. These findings indicate that the use of partial correlations in the item selection process was successful in diminishing the impact of social desirability on the Concerns scale scores and support the conclusion that these scales represent the respondents' behavioral tendencies in each of the areas independent of (or in addition to) the influence of social desirability.

Second, all of the five original Concerns scales show relatively high correlations with the Overall Concerns score (range .72 to .84; median .79) and are also at least moderately correlated with each other. This pattern of relationships suggests the presence of a single concept that underlies the five Concerns scales. Thus, in addition to assessing concerns in each of the five areas, the CBI appears to represent an overall characteristic, perhaps appropriately termed "organizational deviance." Finally, the fact that the correlations of the Concerns scale scores with Good Impression are relatively low indicates that this overall characteristic is not simply a test-taking response set.

Appendix C:
Reliability of the
Counterproductive Behavior Index

Reliability refers to the repeatability or the dependability of a measurement. Two kinds of reliability are considered important: consistency and stability. Consistency refers to the degree of agreement that would be obtained if two or more parallel versions of the test were used at the same time. Stability refers to the repeatability of the test over time and is also referred to as test-retest reliability. Both of these properties are needed in order for a measuring instrument to be considered reliable.

Consistency is most commonly assessed with a statistic known as Cronbach's alpha, which determines the amount of similarity among different parts of a scale. The values of Cronbach's alpha were computed for each of the scales of the CBI, for the 191 subjects used in the test's initial construction process, and for 178 subjects used in constructing the Sexual Harassment Concerns scale. These values are shown in Table 7 below. For the six Concerns scales, they range from .78 to .87, with a median value of .84. For the Overall Concerns scale, the alpha is .94. For the Good Impression scale, the alpha is .90.

Table 7
Reliabilities of the Six Concerns Scales,
Overall Concerns, and Good Impression Scale of the CBI

Scale	Cronbach's Alpha	Test-Retest Reliability
Dependability Concerns	.83	.87
Aggression Concerns	.82	.91
Substance Abuse Concerns	.87	.94
Honesty Concerns	.84	.82
Computer Abuse Concerns	.84	.81
Sexual Harassment Concerns	.78	n/a
Good Impression	.90	.79
Overall Concerns	.94	.92

A consistency approximating .80 is considered satisfactory for scales of this nature. The consistencies of all the scales meet this criterion, indicating that all of the measures of the CBI are internally consistent.

Test-retest reliability was computed for all scales (except Sexual Harassment Concerns) by asking 41 of the initial participants to complete the CBI a second time, two to seven days later. Correlations between scores on the first and second administrations are shown in Table 7. For the content scales, they range from .81 to .94, with a median value of .87. For the Overall Concerns scale, the value is .92. For the Good Impression scale, the value is .79. These correlations show satisfactory test-retest reliability for the CBI.

Appendix D:
Validity of the
Counterproductive Behavior Index

The **validity** of a measuring instrument refers to the extent to which it measures what it is designed to measure. The concept of validity is closely related to the notion of usefulness or utility; a test is useful to the extent that it measures what it is said to measure. As indicated in the Standards for Educational and Psychological Testing (American Educational Research Association/American Psychological Association/National Council on Measurement in Education, 1999), evidence for validity may be accumulated in many different ways. Three main kinds of evidence for validity are generally recognized: (a) content-related evidence for validity, (b) criterion-related (predictive and concurrent) validity, and (c) construct validity. This three-fold division is somewhat artificial since the categories overlap somewhat, and it is generally desirable to demonstrate that a test possesses validity in more than one way.

Content-related evidence for validity involves showing that the content of the test is representative of the behaviors, attitudes, traits, etc., that are of interest. In regard to the assessment of personal traits and behaviors of the kind represented by the CBI, there is strong research to indicate that content validity is a necessary and basic condition for the validity of the test (although it is by no means the only necessary condition).

Criterion-related validity refers to prediction, the accuracy with which we can make inferences about one characteristic of an individual from another characteristic. The test or assessment measure is called the "predictor" and the characteristic we are inferring is known as the "criterion." Criterion-related validity does not always refer to prediction in the future. It is logical and often useful to consider prediction to a concurrent event. Concurrent validity would be demonstrated if a test is shown to be correlated with other measures of the same characteristic that are obtained at the same time.

Construct validity is important when there is no single definitive or tangible criterion for the quality or characteristic being evaluated. To establish construct validity, the relationship is typically examined between the measure of interest and other characteristics or concepts that are both related and unrelated. This gradual accumulation of supporting evidence garnered from a variety of research findings can be arranged to demonstrate a network of relationships among the measure in question and other relevant concepts. The nature and strength of these relationships should be predictable, both from the theory in which the concept is embedded and from the generally understood meaning of the concept.

The data related to the development of the CBI give substantial initial evidence for content validity. However, establishing validity for any psychological measuring instrument is an ongoing process. The following three studies provide further support for the intended meanings of the scales of the CBI. A more detailed account of this work is given in a research paper entitled "Validity and Reliability of a Pre-Employment Screening Test: The Counterproductive Behavior Index (CBI)." These research findings will be augmented on an ongoing basis. Validity data relating to the Sexual Harassment Concerns scale will be presented in a future publication.

Study I: Criterion-Related Concurrent Validity

The purpose of this study was to show that the scales of the CBI are significantly related to other measures of similar characteristics.

The CBI was administered to 83 undergraduates (43 males and 40 females) at a major university who had had significant work experience. Sexual Harassment items were not included. Participants were tested in small groups under conditions of anonymity. Also administered were scales that had proven validity for each of the areas assessed. These scales and instruments included the NEO Five Factor Inventory (Costa & McCrae, 1992), the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992), The Drug Abuse Screening Test (DAST; Skinner, 1982), the Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, & Grant, 1992), the Balanced Inventory of Desirable Responding (Paulhus, 1986, 1991), and two instruments developed especially for the present research: the Honesty Validity Index (HVI) and the Computer Abuse Validity Index (CAVI). In addition, a Total Validity Index was formed by combining the main validity measures for the five content scales; that is, either the first-listed measure or the only measure employed.

Correlations were also computed between the scales of the CBI and those of another pre-employment screening test, the Applicant Risk Profiler (ARP; Llobet, 2001). The scales of the ARP assess five of the areas covered by the CBI: Workplace Policy Compliance, Workplace Aggression, Illegal Drug Use, Integrity/Honesty, and Deception.

The correlations of CBI scales with these concurrent validity measures are described below, and are also shown in Tables 8 through 12 for Dependability Concerns, Aggression Concerns, Substance Abuse Concerns, Honesty Concerns, and Good Impression respectively. Due to incomplete data, the number of participants for each scale varied from 60 to 78. There were approximately equal numbers of males and females.

For **Dependability Concerns** (see Table 8), the correlation with an established similar but opposite measure, the Conscientiousness scale of the NEO-FFI, was ⁻.50, which is highly significant ($p < .001$). Correlations for males and females separately, and with another relevant measure (for females), the ARP Workplace Policy Compliance scale, are also significant.

For **Aggression Concerns** (see Table 9), the correlations with the each of the five facets and the total score of an established measure, the Buss-Perry Aggression scale, ranged from .33 to .72. All are all significant ($p < .001$). Correlations for males and females separately, and with two other relevant measures, the NEO-FFI Agreeableness scale (in reverse) and the ARP Workplace Aggression scale, are also significant.

For **Substance Abuse Concerns** (see Table 10), the correlations with an established measure of drug abuse (the DAST) and a college-related index based on an established alcohol abuse measure (the AUDIT) were .57 and .42 respectively, both of which are highly significant ($p < .001$). Correlations for males and females separately, and with another relevant measure, the ARP Illegal Drug Use scale, are also significant.

For **Honesty Concerns** (see Table 11), the correlation with the Honesty Validity Index was .37, and with the ARP Integrity scale was .40. Both are significant beyond the .01 level. Correlations for males and females separately are also significant.

For **Computer Abuse Concerns**, the correlation with the Computer Abuse Validity Index was .50, which is highly significant (*p* < .001). The correlation was much higher for males than for females (.61 and .31 respectively). This discrepancy presumably reflects the much narrower range of score for females, which is in line with the fact that computer abuse is not a common behavior for females.

For **Good Impression** (see Table 12), the correlation with an established measure (the BIDR) was .49, which is highly significant (p < .001). Correlations for males and females separately, and with another relevant measure, the ARP Deception scale, are also significant.

For **Overall Concerns**, the correlation with the Total Validity Index was .66. This is highly significant, well beyond the .001 level. Correlations for males and females separately are also highly significant (.70 and .58 respectively).

These correlations provide strong evidence for the concurrent validity of the CBI scales. Comparison of these data with published reports of other pre-employment assessment instruments (e.g., Barrick & Mount, 1991; Goodstein & Lanyon, 1999; Judge, Heller, & Mount, 2002; Lanyon & Goodstein, 1997) indicates that these obtained values are equal or superior to validity levels that have been demonstrated to date.

Study II: Criterion-Related Predictive Validity

The purpose of this study was to demonstrate the predictive validity of the CBI scales based on deliberate simulation of the characteristics assessed by the scales. The Sexual Harassment scale was not included.

Participants were 160 undergraduates (88 males and 62 females) at a major university who had had significant work experience. They were tested in small groups, under conditions of anonymity. First, descriptions of the basic definitions and meanings of each of the scales were developed, in the form of single-paragraph statements, to directly portray the original "universe of content" of each characteristic. The purpose of the study was explained in advance. Participants then completed the CBI either three or six times during one or two one-hour sessions, each time with specific written and oral instructions to simulate one of the characteristics represented by the scales. Participants were asked to complete the CBI as though they actually had engaged in such behavior or held such attitudes. They were told that although they wanted to do their "best" on the test in order to get the job, they recognized that the test might be able to determine whether they were lying. Therefore, they were to admit to some of the negative characteristics. To simulate Good Impression, they were told to make the very best impression that they could, in order to increase their chances of getting the job, but to give unbiased and straightforward responses to questions regarding all other characteristics. The number of participants completing each simulation ranged from 109 to 160.

For each scale, the mean score when simulating the characteristic was compared statistically with the corresponding mean score based on the 191 subjects of the normative group. The mean scores under simulation conditions were also separately compared with the means for the 56 subjects of the normative group who were similar in age to the simulation subjects (age range 18–25). These mean scores are shown in Table 13, in raw score form and also in standard score form (*t* scores) as compared to the normative data. Statistical comparisons of the mean scores under simulation conditions with the two sets of norms showed highly significant differences, with all comparisons well beyond the .001 level.

Hits and misses. A more practical way of understanding these results is in terms of predictive accuracy, or hits and misses. The accuracy of a scale in correctly identifying persons **who do not have** the characteristic is termed the **specificity** of the scale. Those persons who do not have the characteristic but are falsely identified as having it are called **false positives**. The accuracy of the scale in correctly identifying persons **who do have** the characteristic is termed the **sensitivity** of the scale. Those persons who do have the characteristics but are falsely identified as not having it are called **false negatives.**

The computations shown in the first specificity column of Table 14 are based on a specificity level of .90—that is, the use of a numerical cutting point on each scale such that 90 percent of persons who do not have the characteristic are correctly identified. This cutting point therefore gives 10 percent false positives—that is, 10 percent of persons in the full normative group would be labeled as having the characteristic. The numbers in the first column (under the heading of "specificity") represent the sensitivity of each scale at a specificity level of .90; that is, the percentage of persons simulating the characteristic who are correctly identified by each scale. These sensitivities range from .63 for Good Impression to .98 for Aggression Concerns and Substance Abuse Concerns.

The last column of Table 14 shows that if the specificity level is relaxed to 75 (that is, if 25 percent false positives are permitted), then virtually all of the persons with the (simulated) characteristics are correctly identified by the scales, ranging from 89 percent for Good Impression to 100 percent for three of the scales.

It is clear that college students responding anonymously when simulating a characteristic are more likely to achieve higher scores than persons possessing the characteristic who are tested in a real-life workplace setting. This factor would have contributed to a higher level of accuracy in the present study than exists in real life. On the other hand, it is likely that 10 percent (or perhaps more) of workers do indeed possess one or more of the characteristics. Thus, at least some of the persons from the normative group who scored above the cutting points and were therefore labeled as test "errors" (false positives) might not have been false positives at all. This factor would have biased the findings in a conservative direction. Overall, therefore, the findings can at least be viewed as giving an encouraging indication that the scales can make discriminations at a level that is practically useful.

Study III: Optimal Use of the Good Impression Scale

The Good Impression scale indicates whether (and the extent to which) respondents have been defensive, overstating their personal virtues and strengths rather than responding in a straightforward manner. A response bias of this kind can sometimes artificially lower respondents' scores on the other scales (and on Overall Concerns), resulting in a decreased likelihood that the CBI will identify a Concern if one exists.

This study investigated the relationship between scores on the Good Impression scale and the other scales. Specifically, it set out to determine the amount by which the other scores decrease due to Good Impression response bias. Again, the Sexual Harassment Concerns scale was not included.

Using the data from the 191 participants of the normative group, the mean scores for each scale were computed for seven different levels of the Good Impression scale score: 0–2, 3–5, 6–8, 9–11, 12–14, 15–17, and 18–20. These data enabled us to see the extent to which a Concerns score decreased as respondents became more defensive (that is, as their

Good Impression scores increased). They also showed the point at which this decrease was sufficient to invalidate each scale as having been unduly influenced by good-impression response set.

Results showed a similar pattern for all of the scales, including Overall Concerns. Specifically, the scores on the Concerns scales were not affected by a good-impression response set until the score on the Good Impression scale reached 15 or 16, corresponding to the 90th percentile on that scale. These results indicate that the test construction procedures were broadly successful in controlling the undesired effects of the good-impression response set, and they also indicate that this influence can be ignored if the Good Impression scale score is below 15. Of course, there is no reason to assume that all of the high scorers on Good Impression necessarily made a deliberate attempt to suppress their responses on the Concerns scales. Therefore, it is fair to conclude that probably fewer than 10 percent of the tests are invalidated by a good-impression response set.

Table 8
Correlations of the CBI Dependability Concerns Scale with the Conscientiousness Scale of the NEO Five-Factor Inventory and the Workplace Policy Compliance Scale of the Applicant Risk Profiler

Validation Scale	CBI Dependability Concerns		
	Overall (*N* = 66)	Males (*N* = 36)	Females (*N* = 30)
Conscientiousness	⁻.50***	⁻.60***	⁻.48**
ARP Workplace Policy Compliance	.18	⁻.09	.38*

* $p < .05$
** $p < .01$
*** $p < .001$

[†]*N* = 66 for overall group, 36 for males, and 30 for females

Table 9
Correlations of the CBI Aggression Concerns Scale with the Four Facets and Total Score of the Buss-Perry Aggression Questionnaire, the Agreeableness Scale of the NEO Five-Factor Inventory, and the Workplace Aggression Scale of the Applicant Risk Profiler

Validation Scale	CBI Aggression Concerns		
	Overall (N = 78)	Males (N = 40)	Females (N = 38)
Buss-Perry Aggression Questionnaire			
Physical Aggression	.64***	.62***	.59***
Verbal Aggression	.33***	.37*	.28
Anger	.67***	.67***	.67***
Hostility	.54***	.51***	.55***
Total Score	**.72***	**.72***	**.68***
NEO-FFI Aggreableness[†]	⁻.40**	⁻.30	⁻.50**
ARP Workplace Aggression[†]	.60***	.58***	.57**

* $p < .05$
** $p < .01$
*** $p < .001$

[†]N = 66 for overall group, 36 for males, and 30 for females

Table 10
Correlations of the CBI Substance Abuse Scale with the Drug Abuse Screening Test (DAST) and a College-Related Index (AUDIT Index) from the Alcohol Use Disorders Identification Test, and the Illegal Drug Use Scale of the Applicant Risk Profiler

Validation Scale	CBI Substance Abuse Concerns		
	Overall (N = 73)	Males (N = 37)	Females (N = 36)
DAST	.57***	.55***	.60***
AUDIT Index	.42***	.45**	.40*
ARP Illegal Drug Use[†]	.65***	.71***	.58***

* $p < .05$
** $p < .01$
*** $p < .001$

[†]N = 66 for overall group, 36 for males, and 30 for females

Table 11
Correlations of the CBI Honesty Concerns Scale with the Honesty Validity Index and with the Integrity Scale of the Applicant Risk Profiler

Validation Scale	CBI Honesty Concerns		
	Overall (*N* = 75)	Males (*N* = 38)	Females (*N* = 37)
Honesty Validity Index	.37***	.36*	.38*
ARP Integrity[†]	.40**	.42*	.35

* *p* < .05
** *p* < .01
*** *p* < .001

[†]*N* = 66 for overall group, 36 for males, and 30 for females

Table 12
Correlations of the CBI Good Impression Scale with the Overall Score on the Balanced Inventory of Desirable Responding (BIDR) and with the Deception Scale of the Applicant Risk Profiler

Validation Scale	CBI Good Impression		
	Overall (*N* = 73)	Males (*N* = 36)	Females (*N* = 37)
BIDR			
Self-Deceptive Enhancement	.38***	.33*	.42*
Impression Management	.41***	.38*	.44**
Total Score	**.49******	**.41****	**.55******
ARP Deception[†]	.26	.38*	.19

* *p* < .05
** *p* < .01
*** *p* < .001

[†]*N* = 66 for overall group, 36 for males, and 30 for females

Table 13
Standard Scores (in *t*-score form) of Means in Six Simulations
and Statistical Comparisons with Normative Means

Simulated Characteristic	Means for Simulation Groups	Statistical Comparisons with:			
		Normative Group (*N* = 191) Standard Score *t*		Age 18–25 Norms (*N* = 56) Standard Score *t*	
Dependability Concerns	13.03	83	5.3	75	14.30
Aggression Concerns	17.05	81	32.31	79	19.22
Substance Abuse Concerns	16.61	86	32.02	78	16.07
Honesty Concerns	14.15	72	20.28	74	15.12
Computer Abuse Concerns	15.34	83	26.43	81	18.78
Good Impression Concerns	16.67	65	17.73	62	8.34

Note: All *t*-test values are p < .001.

Table 14
Sensitivities at Two Levels of Specificity for
CBI Scales Based on a Comparison of the
Normative Group and Simulated Responding Groups

Simulated Characteristic	*N*	Specificity	
		.90	.75
Dependability Concerns	114	.89	.96
Aggression Concerns	126	.98	1.00
Substance Abuse Concerns	123	.98	1.00
Honesty Concerns	123	.78	.98
Computer Abuse Concerns	109	.89	1.00
Good Impression	160	.63	.89

Note: The cumulative percentage figure numerically closest to each specificity was utilized to determine the cutting points on which the sensitivities are based.

Appendix E:
Follow-Up Questions

(F= False; T = True. **A** = Attitudinal Question; **B** = Behavioral Question)

Dependability Concerns

1. I usually try to develop a plan for my work. F **B**

   I'm interested in learning more about how you go about your work. How necessary is it for you to have a plan for what you have to do on the job?

2. I work very carefully. F **B**

   To what extent do you try to be careful in your work? Does doing your job require you to try to be especially careful in what you do?

15. It's easy for me to keep my focus on my work. F **B**

    It's often difficult to keep your focus on what you're doing on the job. Can you tell me about when that happens to you? How often does that happen?

16. Doing my job right is more important than having a good time. F **A**

    Give me an example of when others were goofing off at work and you stuck to your job.

29. It is important to me to control my own work. F **B**

    Tell me about what happens when you feel that someone at work is supervising you too closely. What happens then?

30. Taking office supplies home from work is no big deal. T **A**

    How often have you taken some office supplies home for your own use? Do you think that this matters?

43. I tell sexual jokes at work. T **B**

    How often do you tell sexual jokes at work? How do people react? Are there some people who you know would be offended by these jokes? Do you avoid telling jokes to these people at work?

44. I often tell racial jokes at work. T **B**

    How often do you tell racial jokes at work? How do people react? Are there some people who you know would be offended by these jokes? Do you avoid telling jokes to these people at work?

57. Anything worth doing is worth doing well. F **A**

    Give me an example of when you had a job to do and when you really bother to do your best. What happened as a result? How often does this happen at work?

58. I'm pretty much all business at work. F **B**

It's often hard not to try to have a little fun on the job. Can you give me an example of when that happened to you recently?

71. At work, I often daydream. T **B**

How often do you daydream? To what extent does that interfere with doing your job?

72. I hate to keep people waiting for me. F **A**

How often are you late for appointments and meetings? Do others seem to mind? How hard do you try to be on time?

85. It's important to face up to your mistakes. F **A**

Give me an example of a time when you made a mistake and were able to get away with it? How often does that happen?

86. I always follow the rules that apply to my work. F **A**

Tell me about a time when you were able to figure out a way to do something your own way at work. How often does that happen?

99. My supervisors know that they can count on me. F **A**

Give me an example of when you were not able to accomplish something that your supervisor expected you to do. How often does this happen?

100. I set high standards, both for myself and for others. F **B**

It's often difficult to keep high standards for one's work. Tell me about a time when that happened to you. Do you see this in others? What do you do about this when it happens?

113. I have been disciplined for sexual harassment. T **B**

Tell me about the time that you were disciplined for sexual harassment. Has that ever happened again?

114. I set high goals for myself at work. F **B**

Setting high goals at work is sometimes hard to do. Are there times when this is true for you? When that happens, what do you try to do about it?

127. I care about the quality of my work. F **B**

Tell me about a time when it didn't matter to you whether or not you did a good job. How often does this happen?

128. I am rarely late in reporting to work. F **B**

How often are you late reporting to work? Do you think that this matters?

Aggression Concerns

3. When I'm in a bad mood, there's no telling what I might do. T **B**

    Tell me about a time when you were in a bad mood at work and what happened as a result of that. Have there been times when you really "lost it" at work because you were in a bad mood?

4. It's hard to control your feelings when you're caught up in traffic. T **A**

    How do you control your feelings when you're stuck in traffic? Are there times when you've "lost it"? What happens as a result?

17. Sometimes I have not realized the strength of my anger. T **B**

    All of us get angry at times. Can you tell me about a recent time when you got very angry at work? Were there times when you got even angrier than that? What happened then?

18. I don't blame a person for wanting to get revenge on others. T **A**

    Give me an example of when you wanted to get revenge on someone else. What happened?

31. At least once I have hit someone just for the fun of it. T **B**

    Tell me about a time when you might have just hit someone, just for the fun of it. What happened then?

32. I have to be careful that my angry feelings don't get away from me. T **B**

    All of us have angry feelings at times. Tell me about a time when you had such angry feelings and how you tried to control them.

45. I easily get "pissed off" at my co-workers. T **B**

    Tell me about a time when you really got "pissed off" at one of your co-workers. What led up to it and what happened then? How did it all end up?

46. When someone hurts me, I tend to get revenge. T **B**

    Tell me about a time when you tried to get revenge on a person who had hurt you. How did it end up?

59. I can imagine a situation in which I could hit or punch a co-worker. T **B**

    Give me an example of when you got really angry at a co-worker. Did you ever actually hit or punch a co-worker because you "lost it"?

60. I often have trouble controlling my temper. T **B**

    Tell me about a time when you lost your temper at work. What led up to this? How did it end up?

73. My anger sometimes frightens me. T **B**

    Give me an example of when you were frightened because you were so very angry. What happened as a result of that?

74. While driving, I sometimes become enraged at other drivers. T **B**

Tell me about a recent instance when you became enraged at another driver. How did it end up? How often does this happen?

87. I would be pleased if certain people got hurt. T **B**

It's common to be pleased if certain people got hurt. For you, what kind of people are they? Have you ever thought of doing anything about these feelings?

88. I sometimes get surprised by how angry I get. T **B**

Give me an example of when you've been surprised by how angry you've been at work. How have you handled that anger? How did it end up?

101. I have a reputation as a good fighter. T **B**

Tell me about your reputation as a fighter. Do you deserve that reputation?

102. I like to watch a good fight at work. T **B**

Tell me about the fights at work. How often do they occur? How often do you get directly involved? Does anyone ever try to prevent them?

115. I curse at my co-workers sometimes. T **B**

Tell me about a time when you cursed at a co-worker. What happened as a result?

116. There have been times when I could not control my temper. T **B**

Tell me about a time when you could not control your anger at work. How often does that occur? What happens as a result?

129. My co-workers know enough to steer clear of me when I'm in a bad mood. T **B**

Tell me about what happens when you're in a bad mood at work. How do others know about this? What happens as a result? How does it usually end up?

130. People are too sensitive about racial jokes. T **A**

How often do you tell racial jokes at work? Do you think that some people mind them? Does that tend to stop you from telling them those jokes?

Substance Abuse Concerns

5. At least once in my life, my use of alcohol has interfered with my doing
    my job at work. T **A**
    *Tell me about a time when alcohol has interfered with your doing your job at work. How
    often does this occur?*

6. I have used cocaine or amphetamines (meth, speed, crystal) recently. T **B**
    *How often do you use cocaine or amphetamines? How badly does it interfere with your
    work? How often have you been arrested for drug use?*

19. A person who brings an illegal drug to work should be fired. F **A**
    *How do you think a person who brings an illegal drug to work should be disciplined?
    Have you seen illegal drugs at work? Have you ever brought an illegal drug to work?*

20. I have used alcohol on the job during the past year. T **A**
    *How often do you drink on the job? How much does it interfere with your work? What
    have your supervisors done about this?*

33. The use of most illegal drugs should be legalized. T **A**
    *Why do you think that most drug use should be legalized? What problem might emerge if
    this were done? How is your own use of drugs involved in coming to this view?*

34. I have used marijuana at least once in the past year. T **B**
    Tell me about your use of marijuana over the past year.

47. I have used an illegal drug on the job during the past year. T **B**
    *How often have you used illegal drugs on the job during the past year? How does it affect
    your work on the job? Has anyone discussed this with you?*

48. In the past year I have used pills that I obtained illegally. T **B**
    *Tell me about the illegal pills that you have used during the past year. How does this
    affect your performance on the job?*

61. A person who uses an illegal drug on the job should be disciplined. F **A**
    *Do you believe that using illegal drugs on the job causes problems? How should people
    who use illegal drugs on the job be disciplined?*

62. In general, people who use illegal drugs tend to be less dependable than those who
    don't. F **A**
    *How well do you think that you can overcome the effects of an illegal drug when you
    come to work? Does taking illegal drugs have a negative impact on what people do?*

75. People who sell illegal drugs should go to jail. F **A**
    *What do you think should be done to people who sell illegal drugs? How many such
    people do you know? How should they be treated?*

76. Workplace rules about illegal drugs are sometimes a bit too strict. T **A**

How do you think people who use illegal drugs at work should be handled? How often do you see illegal drugs being used at work? How often have you used illegal drugs at work?

89. I can do a better job at work if I have used an illegal drug. T **B**

How often have you used illegal drugs at work? How does this impact your on-the-job performance? Have you ever been disciplined for using illegal drugs at work?

90. I don't feel safe at work when others drink on the job. F **A**

How much of a problem is drinking on the job? How much danger is involved? What do you tend to do about it? How often do you drink on the job?

103. Anyone who brings an illegal drug to work should be disciplined. F **A**

How do you think people who use illegal drugs at work should be handled? How often do you see illegal drugs being used at work? How often have you used illegal drugs at work?

104. I have never brought an illegal drug to my place of work. F **B**

Tell me about a time when you brought an illegal drug to work. What happened as a result? How often does this occur?

117. If I knew another employee was drinking at work, I would report it to a supervisor. F **B**

If you knew that another employee was drinking on the job, what would you do? Do you think that drinking on the job is a problem? Are there safety issues involved?

118. Getting a small amount of an illegal drug at work is OK, provided that it's not used at work. T **A**

Have you ever gotten small amounts of illegal drugs at your place of work? When did you use them? Is there any risk involved in doing this?

131. Over the past year, I have used marijuana at work or shortly before going to work. T **B**

Tell me about a time when you've used marijuana at work or just before you went to work. How often does this happen? How does this affect your on-the-job performance?

132. I could work just as safely on the job if I had recently used an illegal drug. T **B**

Tell me about a time when you used an illegal drug on the job. How did this affect your performance? Were there any safety issues involved?

Honesty Concerns

7. Most people have good reasons for getting back at their employers. T **A**

   Tell me about a time when you were able to get back at your employer. What happened before that? How did it end up?

8. Everyone uses sick leave for other purposes. T **A**

   Tell me about a time when you used your sick leave even though you were not really sick. How often does that occur?

21. On occasion, most people will under-ring the cost of a purchase for a friend or family member. T **A**

    How often do others under-ring a purchase for a friend or family member? Have you ever done that? How often?

22. Given the opportunity, most people would take a few bucks out of petty cash for their own use. T **A**

    How regularly do people take a few bucks out of petty cash for their own use? How often have you done that? Does it matter much?

35. I have borrowed from the company without being authorized but have always paid it back. T **B**

    Tell me about a time when you borrowed money from your company without authorization and paid it back. How did it work out?

36. I have shared confidential company information with unauthorized people. T **B**

    Tell me about a time when you gave confidential information to someone who was not authorized to receive it. Did your company find out about it? What would have happened if it did?

49. I have failed to report a co-worker who stole money or property at my job. T **A**

    Tell me about a time when you knew about a co-worker stealing money and property but you failed to report him or her. What prevented you from doing that? How did it work out?

50. At work, I have shown a fellow employee how to beat the system. T **B**

    Tell me about a time when you showed a fellow employee how to beat the system. How did it work out?

63. In a store, I have been tempted to take merchandise without paying for it. T **B**

    How often are you tempted to take things in a store without paying for them? How often do you actually do it? Have you ever gotten caught taking things from a store?

64. I have taken home tools or equipment belonging to my employer for my own use. T **B**

    Tell me about a time when you have taken home tools or equipment from your employer for your own use. Did you ever get caught? What were the penalties?

77. I have tricked someone out of money and gotten away with it. T **B**

Tell me about a time when you tricked someone out of money and got away with it. Did it matter?

78. At work, I have been forced to lie in order to stay out of worse trouble. T **B**

Give me an example of when you have had to lie at work in order to keep out of worse trouble. How did this situation end up? How often do things like this happen to you?

91. I have falsified a receipt to get more money than I deserved from my employer. T **B**

Give me an example of when you've falsified a receipt in order to get more than you deserved from your employer. How often has this occurred? Have you ever been found out? What happened as a result?

92. Everyone will steal a little bit from the company. T **A**

How often do people steal things from the company? How often have you stolen something from the company?

105. Most people think about stealing things from the company, even though they don't actually do it. T **A**

When people think about stealing from the company, what prevents them from actually doing that? How often have you been tempted to steal from the company? How often have you ever done that?

106. Given the opportunity, most people would sell "hot" or stolen merchandise. T **A**

Tell me about a time when you were offered "hot" or stolen merchandise at work. What did you do about it? How often does that happen?

119. I have knowingly overdrawn my bank account. T **A**

How often do you overdraw your bank account? What causes that to happen? Does this concern you?

120. Most people lie a little at work to protect themselves. T **A**

Tell me about a time when you saw someone lying at work in order to protect themselves. What did you do about that? Tell me about a time when you yourself did that? What happened as a result?

133. Most people have taken home tools or equipment belonging to the company for their own use. T **A**

Tell me about a time recently when someone took home some tools or other company equipment for their own use. What did you do about it? Tell me about a time when you've done that.

134. Most people look the other way when a co-worker steals something on the job. T **A**

Tell me about a time recently when you saw a co-worker steal something on the job. What did you do about it? Tell me about a time when you stole something on the job.

Computer Abuse Concerns

9. I would not use my computer at work to send and receive e-mail if it was against company policy. F **B**

   How often do you send or receive personal e-mail while at work? Do you think that this matters to your employer?

10. I regularly visit pornography websites at work. T **B**

    Tell me about the porn websites that you might have visited at work. How often do you do this? Has anyone ever objected?

23. I have hacked into someone's website without permission. T **B**

    How often have you hacked into someone's website? I'm interested in why you might have done that. Did you do any damage? What happened then?

24. I have gained access to co-workers' e-mail without their permission. T **B**

    Tell me about when you've been able to get into a co-worker's e-mail without their permission. Did this cause any problems? How often has this happened?

37. I have forwarded e-mail with dirty jokes to others at work. T **B**

    How often do you e-mail dirty jokes to others at work? Has anyone ever complained about them? Do you think it might bother others?

38. I have forwarded e-mail with racial jokes to others at work. T **B**

    How often do you e-mail racial jokes to others at work? Has anyone ever complained about them? Do you think it might bother others?

51. I have not used my company computer to play computer games. F **B**

    How often do you play computer games at work? What problem does this cause? Has anyone ever objected to this?

52. I have used my company computer to obtain confidential company information without permission. T **B**

    Tell me about a time when you got some confidential company information without permission? How often has this happened? Did anyone know about this?

65. I have routinely used my computer at work to keep in touch with family and friends. T **B**

    Tell me about how you use your company computer to keep in touch with your family and friends. Is this against company policy? What would happen if your supervisor found out about this?

66. If I saw a co-worker play computer games at work, I'd report it to my supervisor. F **B**

    How often do people play computer games at work? Have you done this? Do your supervisors care about this? What would happen if they found out?

79. It's OK to use your company computer to keep in touch with family and friends, even if it's against company policy. T **B**

Tell me about how you use your company computer to keep in touch with your family and friends. Is this against company policy? What would happen if your supervisor found out about this?

80. If I'm a hard worker, it's OK to use a company computer for personal reasons, even though it may be against company policy. T **A**

Tell me about how you use your company computer for personal reasons. Is this against company policy? What would happen if your supervisor found out about this?

93. Hacking into a website is OK, if you don't disrupt the site. T **A**

How much hacking into others' websites goes on at work? Does it cause problems? How often have you done this?

94. It is OK for employees at work to use their computers to play computer games. T **A**

How often do people play computer games at work? Have you done this? Do your supervisors care about this? What would happen if they found out?

107. Nobody should ever forward a racial joke on e-mail at work. F **A**

How often do you see racial jokes on your e-mail at work? What do you do about them? Has anyone ever complained about them? Do you think it might bother others?

108. There's nothing wrong with forwarding sexual jokes on e-mail at work. T **A**

How often do you see sexual jokes on your e-mail at work? What do you do about them? Has anyone ever complained about them? Do you think it might bother others?

121. Too much is made of visiting porn websites. T **A**

How often do people visit pornography websites at work? Have you done this? Do your supervisors care about this? What would happen if they found out?

122. If I need some company information, there's no harm in getting it even if I'm not authorized. T **A**

Tell me about a time when you were about to get some confidential company information without permission? How often has this happened? Did anyone know about this?

135. Playing computer games at work is disruptive to good business practices. F **A**

How often do people play computer games at work? Have you done this? Do your supervisors care about this? What would happen if they found out?

136. I have shared confidential information about my company with others. T **B**

Tell me about a time when you shared confidential company information with others, even when you knew you shouldn't. What were your reasons for this? What happened as a result?

Sexual Harassment Concerns

11. I have occasionally hugged a co-worker to whom I felt close. T **B**

Tell me about a time when you hugged a fellow worker to whom you felt close. How did that person react?

12. I often tell dirty jokes at work. T **B**

How often do you tell dirty jokes at work? How do your co-workers react? Do people ever object?

25. A dirty joke or two often relieves the tension at work. T **A**

Tell me about the most recent time when you told a dirty joke at work. How did people react? Do people ever object to your jokes?

26. There's nothing wrong with touching a co-worker of the opposite sex. T **A**

Under what circumstances might you actually touch a fellow worker of the opposite sex? When did you last do that? How did that person react?

39. Making sexual remarks is just part of human nature. T **A**

Tell me about the last time when you made a sexual remark at work. How did people react? Did anyone object?

40. It is expected that co-workers will do a little socializing after a hard day's work. T **A**

Give me an example of when you socialized after work with co-workers. How did it work out? Did everybody go? If someone did not go, was that OK with the rest?

53. I enjoy flirting at work. T **B**

When was the last time you flirted at work? Did the person react to this? How do you think they really felt? Were there any negative reactions? What would you have done if there had been?

54. People make too much of sexual harassment. T **A**

Can you tell me about a so-called sexual harassment situation at work? Who was involved? How did it work out? What did management do about it?

67. I often make sexual comments at work. T **B**

Give me an example of when you made a sexual comment at work. Who else was involved? How did the other person react? What did management do?

68. There's nothing wrong with pushing a co-worker for a date after work. T **A**

Tell me about a time when you pushed a co-worker for a date? What kind of a reaction did you get? How did it end up? How frequently has this happened?

81. When you take a man's job, you have to expect to be treated like a man. T **A**

Do you think that women need to be treated differently from men on the job? Do women respond to sexual matters at work differently from men? Do women sometimes object to sexual kidding around at work?

82. At work I have hugged a member of the opposite sex. T **B**

Give me an example of a time when you hugged a co-worker of the opposite sex. How did that person react? How often do such things happen? Is the reaction always the same?

95. If you can't take a little sexual kidding around on the job, you have no business taking the job. T **A**

How much sexual kidding around have you experienced? How does that make you feel? How do the others feel? Do the men and women react the same? How tolerant of this is management?

96. I have complimented a co-worker of the opposite sex on how attractive he or she appeared. T **B**

Tell me about a time when you complimented a co-worker of the opposite sex on his or her appearance. How did that person react? How do you think the person really felt? How often do you do this? Do you think that doing this is a good idea?

109. Most sexual harassment is caused by the way that the so-called "victim" behaves. T **A**

Tell me about your views on sexual harassment. Do you think that there are circumstances in which there really are women who are the targets of unwelcome advances? How do you think such matters should be handled? Have you yourself ever been involved in such a situation?

110. I have put my arm around a member of the opposite sex at work. T **B**

Give me an example of a time when you put your arms around a member of the opposite sex at work. How did that person react? What was the outcome of this situation? Are there circumstances in which doing this would clearly be inappropriate?

123. Most reports of sexual harassment are just attempts to get attention. T **A**

Are there ever circumstances of real sexual harassment? Have you ever been involved in one? What happened? Do you see most women as exaggerating what happens to them at work?

124. I have asked sexual questions of a co-worker of the opposite sex. T **B**

Give me an example of a time when you asked a sexual question of a co-worker of the opposite sex. How did that person react? What happened then? Were there any negative consequences? Are there circumstances when asking such questions would not be appropriate?

137. I have deliberately stared at a co-worker of the opposite sex. T **B**

Tell me about a time when you deliberately stared at a co-worker of the opposite sex. How did that person react? How did it work out? Did management get involved? Are there circumstances where such staring would not be appropriate?

138. Most reports of sexual harassment are simply attempts to get back at the person being accused. T **A**

Do you know directly about any sexual harassment cases? What do you know about them? What has motivated these complaints? How often do you think these things happen?

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Leonard D. Goodstein, a consulting psychologist based in Washington, D.C., specializes in providing consultation in strategic planning and strategic management, the implementation of the strategic plan. His recent business clients include the Federal Deposit Insurance Company, Wiremold, Kaiser Aluminum (Jamaica), AAI, Inc. (a subsidiary of United Industries), Handy & Harman Specialty Wire Group, Cathay Pacific Airways, British Airways, Hoechst Celanese, and Ontario Hydro as well as many less-well-known, smaller organizations. Included among several professional practice group clients is Gray, Carey, Ware, and Friedenrich, a California-based law firm. His public sector clients include the FDIC, USDA Graduate School, Columbia University, the National Institutes of Health, Internal Revenue Service, U.S. Forest Service, City of Cincinnati Health Department, and many others.

In October 1988, Dr. Goodstein completed a three-year term as Executive Vice President and Chief Executive Officer of the American Psychological Association, the national membership association of 97,000 psychologists located in Washington, D.C. At that time, the Association had an annual operating budget of $42 million and a staff of 400. Prior to coming to Washington, Dr. Goodstein had a distinguished academic career, including professorships at the universities of Iowa and Cincinnati, and Arizona State University where he served as Chair of the Department of Psychology. In addition, he has been a Fulbright Senior Lecturer (Professor) at the Vrije Universiteit in the Netherlands. After leaving academia and prior to joining APA, he was President and later Chairman of the Board of University Associates, Inc., a San Diego–based international consulting and publishing company.

After receiving his bachelor's degree with honors from the City College of New York, Dr. Goodstein went on to receive both an M.A. and Ph.D. from Columbia University, both in psychology. A holder of the Diploma in Clinical Psychology of the American Board of Professional Psychology, Dr. Goodstein is a Distinguished Practitioner of the National Academy of Practice. He is a licensed psychologist in both California and the District of Columbia. Dr. Goodstein is listed in *Who's Who in America* and *American Men and Women in Science.*

A frequent contributor to the professional literature, Dr. Goodstein has authored, co-authored, or co-edited fifteen books and over 200 articles. His latest books are *Applied Strategic Planning: How to Develop a Plan that Really Works* (with J. W. Pfeiffer and T. Nolan), published in 1993 by McGraw-Hill, and *Personality Assessment* (3rd ed.) with R. I. Lanyon, published in 1997 by John Wiley. He speaks often to executive and management groups and to meetings of human resource professionals.

Dr. Goodstein lives in Washington, D.C., with his wife, Jeanette, and Simba, a small apricot-colored poodle. His two grown sons and their wives have provided him with six grandchildren with whom he wishes he could spend more time.

Richard I. Lanyon, Ph.D.

Richard I. Lanyon holds a degree in engineering from the University of Adelaide (Australia) in 1959, plus M.A. and Ph.D. degrees in clinical psychology from the University of Iowa (1964). He is a Diplomate of the American Board of Professional Psychology in Clinical Psychology (1971) and also in Forensic Psychology (1988). He has been a research-and-development engineer for the South Australian Government and has held academic appointments at several universities, including Harvard Medical School where he was also Chief Psychologist at the Massachusetts General Hospital. Since 1975, he has been Professor of Psychology at Arizona State University and was Director of the Ph.D. program in clinical psychology from 1975 to 1982. He has taught graduate-level courses in the development and use of psychological tests for nearly 40 years, and he has also taught courses in statistics, neuropsychological assessment, personality, and forensic psychology.

Dr. Lanyon has published more than 100 articles in academic and professional journals. His books have included *A handbook of MMPI group profiles* (University of Minnesota Press, 1968); (with B. P. Lanyon) *Behavior therapy* (Addison-Wesley, 1978); and (with Leonard D. Goodstein) three editions of the textbook *Personality assessment* (Wiley, 1971, 1982, 1997), two editions of *Adjustment, behavior, and personality* (Addison-Wesley, 1975, 1979), and *Readings in personality assessment* (1971). He has developed tests that include the Psychological Screening Inventory (1973, 1978); (with B. P. Lanyon) the Incomplete Sentences Task (1980); and (with Ruehlman and Karoly) the Multidimensional Health Profile (1998).

Much of Dr. Lanyon's research activity has focused on the technology of constructing psychological tests, and in particular, on gaining a better understanding of the various ways in which test respondents tend to misrepresent themselves and on ways of identifying and measuring these distortions. He has given workshops on personality assessment and has consulted to organizations on the development and use of personnel-related psychological test instruments. In addition, he has conducted many individual psychological assessments in a wide variety of settings.