WorkKeys®

TALENT ASSESSMENT
User and Technical Guide

ACT®

Contents

Figures

Tables

1
Introduction

The WorkKeys® Talent Assessment measures a set of twelve personality characteristics that reflect a spectrum of behaviors and attitudes that are common in the workplace. These personality characteristics are important for two reasons. First, they are associated with a variety of work outcomes, such as job performance, organizational citizenship, counterproductive work behaviors, and teamwork. Second, they vary in importance depending on job demands and job complexity. Accordingly, when an organization seeks to hire and develop quality employees, it is important to consider personality.

The following sections present general information about personality tests as well as information specific to the WorkKeys Talent Assessment.

What Is Personality Testing?

Personality inventories are tests used to measure an individual's personality characteristics. These behavior or temperament characteristics can facilitate or impede a person's ability to successfully interact with others, achieve goals, solve problems, manage workers, etc.

Personality tests can provide substantial utility in predicting work performance, and a number of organizations have incorporated them into their employee selection and promotion process. A study by the American Management Association (1999) revealed that 39 percent of companies surveyed use personality testing as part of their hiring process and 31 percent administer personality tests to current employees for development purposes. In a coaching and development context, personality testing is used to enhance self-knowledge, identify strengths and weaknesses, and enhance team effectiveness (Cacioppe, 1998; McClure & Werther, 1993).

Brief History of Personality Testing

Personality psychology has been in existence for over 100 years, and its study can be traced through several distinct traditions. During the first part of the 20th century, well-known European psychologists such as Adler, Erikson, Freud, and Jung speculated on the causes of neuroses, often attributing them to childhood trauma. Around the same time, American psychologists such as Allport and Maslow began to focus on personality as a means for self-actualization. Psychologists such as Cattell, Thurstone, and Eysenck adopted a different approach by focusing their attention on how personality is structured through traits. Advances in the field during the 1980s and 1990s included the development of the "Five Factor Model" of personality (FFM) (Digman, 1990; McCrae & Costa, 1987, 1997). Research on the FFM has shown that personality tests consistently capture the same broad themes/constructs in which people think and describe one another (Conscientiousness, Extraversion, Agreeableness, Emotional Stability, and Openness to Experience). As such, it was not created to diagnose abnormal personality, mental illness, or psychiatric disease but rather to describe the personality characteristics of "normal" individuals.

How Can Personality Testing Benefit My Organization?

Managers and human resource professionals use personality assessments to make better informed selection, promotion, and employee development decisions.

For example, in *employee selection*, personality tests can be used to:

- Screen out less desirable job candidates (e.g., those who are more likely to engage in counterproductive work behaviors)
- Identify job applicants who have desirable characteristics (e.g., those who are more likely to be dependable, get along well with others)

In *employee coaching and development*, personality tests can be used to

- Identify an employee's personality-related behavioral competencies that may benefit from training and development activities (e.g., time management skills, communication skills)
- Enhance an employee's self-awareness
- Enhance team effectiveness

Detailed examples of how the WorkKeys Talent Assessment can be used for selection/promotion and for development can be found in Chapter 2.

Frequently Asked Questions about Personality Testing

 Are personality tests reliable?

The reliability of a test reflects the stability of test results over time and across diverse settings. Research has reported that personality tests display moderate to high internal consistency reliability (how well each item relates independently to the rest of the items on a scale and how they relate overall) (Viswesvaran & Ones, 2000). The internal consistency reliability of the Talent Assessment scales ranges from .81 to .89 (mean = .85), which puts all of them in the high reliability range. Further information on the reliability of the Talent Assessment can be found in Chapter 3.

 Are personality tests valid?

Validity refers to the ability of a test to measure what it is intended to measure. Studies have shown that properly designed and administered personality tests are valid predictors of many aspects of job performance, including quality and quantity of work, teamwork, leadership, turnover, absenteeism, counterproductive work behaviors, and organizational citizenship/helping behaviors. Validity estimates typically range from .15 to .50. (Barrick & Mount, 1991; Ones, Viswesvaran, & Dilchert, 2005; Salgado, 2003).

Specific to the Talent Assessment, research indicates that the test measures the same broad themes as those captured by other personality inventories. Further, validity estimates from the Talent field study suggest that the Talent Assessment is predictive of a range of work-related behaviors, such as task performance, productivity, prosocial/organizational citizenship behaviors, teamwork, counterproductive behaviors, and others. Detailed criterion and construct validity evidence is presented in Chapter 3.

☐ *Do the tests have incremental validity?*

Incremental validity is the extent to which a test adds to the predictive validity already provided by other selection measures. Research has found that personality tests provide incremental validity gains over general mental ability (on average, an 18% increase). For comparison purposes, other tools, when used for selection purposes, provide smaller gains: unstructured interviews (13%), reference checks (12%), and biodata (4%) (Schmidt & Hunter, 1998). ACT staff are in the process of completing research on the incremental validity of the Talent Assessment when used in combination with other measures, such as the WorkKeys Foundational Skills Assessments.

☐ *Can someone cheat on a personality test?*

In general, research has shown that social desirability (a.k.a. "fakeability") does not affect the validity of personality tests, whether in terms of relations with other measures or predictive validity (Ones & Viswesvaran, 1998). Although most people tend to respond honestly when completing personality inventories, the Talent Assessment has built-in features that flag scores of respondents whose response patterns are inconsistent or unusual. Thus, the Talent Assessment reports provide a note for employers to use caution when interpreting scores that have been   flagged.

☐ *How do job applicants react to personality tests?*

Research based on opinion surveys of job applicants shows that the majority of respondents perceived personality testing as an appropriate selection procedure. When asked to rank order their overall impression of various selection procedures from positive to negative, personality tests consistently ranked in the middle (i.e., neutral), below interviews and above ability testing (Coyne & Bartram, 2002; Rynes & Connerley,   1993).

☐ *What about adverse impact claims against personality tests?*

Adverse impact refers to the likelihood that a selection tool systematically selects members of one demographic group over another. In terms of adverse impact, research on personality testing has shown small to insignificant differences between demographic groups (Hough, 1998; Schmidt & Hunter, 1998). Personality tests are rarely implicated in adverse impact claims. Consistent with the research literature, analyses using WorkKeys Talent scale scores suggest that the Talent Assessment does not result in significant adverse impact. Additional information is provided in Chapter 3.

2
About the WorkKeys Talent Assessment

This chapter introduces the WorkKeys Talent Assessment and the personality characteristics it measures. Sample instructions and items are presented along with interpretations of high and low scores for each dimension. The chapter concludes with a discussion of how the Talent Assessment can be used for employee selection and development.

What Is the WorkKeys Talent Assessment?

The Talent Assessment is an Internet-delivered inventory of normal personality that contains 165 items. Consistent with other personality measures, the assessment is written at a fifth-grade reading level and can be completed by most individuals in approximately thirty minutes.

What Does the Talent Assessment Measure?

The Talent Assessment is designed to measure twelve work-relevant personality characteristics and four compound scales (also known as "Talent indices"). The assessment is based on facets of the Five Factor Model of personality, as well as concepts from the emotional intelligence literature. Both of these have been associated with work-related behavior.

Table 1
Personality Characteristics Measured by the Talent Assessment

Talent Scales	Corresponding FFM Personality Dimensions
Carefulness – the tendency to think and plan carefully before acting or speaking.	Conscientiousness
Discipline – the tendency to be responsible, dependable, and follow through with tasks without becoming distracted or bored.	
Order – the tendency to be neat and well-organized.	
Stability – the tendency to maintain composure and rationality in situations of actual or perceived stress.	Emotional Stability
Optimism – the tendency toward having a positive outlook and confidence in successful outcomes.	
Cooperation – the tendency to be likable and cordial in interpersonal situations.	Agreeableness
Goodwill – the tendency to be forgiving and to believe that others are well-intentioned.	
Sociability – the tendency to enjoy being in other people's company and to work with others.	Extraversion
Influence – the tendency to impact and dominate social situations by speaking without hesitation and often becoming a group leader.	
Striving – the tendency to have high aspiration levels and to work hard to achieve goals.	
Creativity – the tendency to be imaginative and to think "outside the box".	Openness
Savvy – the tendency to read other people's motives, understand office politics, and anticipate the needs and intentions of others.	Multiple Traits + Emotional Intelligence

Detailed scale definitions, descriptions of high and low scorers, and sample items are presented below:

Talent Scales

Carefulness refers to the tendency to think and plan carefully before acting or speaking.

- *High* scorers are likely to be cautious, deliberate and able to control their impulses, usually considering the consequences of their words and actions.
- *Low* scorers may be hasty, impulsive and often speak and act without considering consequences.
- *Sample Item:* I prefer to plan ahead.

Cooperation refers to the tendency to be likable and cordial in interpersonal situations.

- *High* scorers are likely to be agreeable, friendly, and easy to work with.
- *Low* scorers may be somewhat contrary, irritable, and less cooperative.
- *Sample Item:* I usually get along well with others.

Creativity refers to the tendency to be imaginative and to think "outside the box."

- *High* scorers are likely to be intellectually curious, open-minded, and imaginative. They enjoy brain teasers and philosophical arguments.
- *Low* scorers tend to be less open-minded, less reflective, and less flexible.
- *Sample Item:* I enjoy finding creative solutions to problems.

Discipline refers to the tendency to be responsible, dependable, and follow through with tasks without becoming distracted or bored.

- *High* scorers are likely to be responsible and reliable when it comes to getting the job done.
- *Low* scorers tend to be more easily discouraged and are less reliable and less dependable.
- *Sample Item:* Once I start a task, I see it through to the end.

Goodwill refers to the tendency to be forgiving and believe that others are well-intentioned.

- *High* scorers are likely to be trusting, kindhearted, and altruistic.
- *Low* scorers may be selfish, suspicious, and skeptical of others.
- *Sample Item:* I think most of the people I deal with are selfish. (reverse keyed)

Influence refers to the tendency to impact and dominate social situations by speaking without hesitation, often becoming a group leader.

- *High* scorers are likely to be assertive, persuasive, and socially ascendant.
- *Low* scorers prefer to keep in the background and rarely offer opinions to others in social situations.
- *Sample Item:* I am often the leader of groups I belong to.

Optimism refers to the tendency toward having a positive outlook and confidence in successful outcomes.

- *High* scorers are likely to feel satisfied and upbeat and generally have a brighter outlook on life.
- *Low* scorers may be more inclined to feel pessimistic, view others in a negative light, or be dissatisfied with life.
- *Sample Item:* I tend to believe that things will work out for the best.

Order refers to the tendency to be neat and well organized.

- *High* scorers are likely to be neat, tidy, and keep things in their proper places.
- *Low* scorers may be less methodical, untidy, and may keep their things cluttered.
- *Sample Item:* My workspace is usually cluttered. (reverse keyed)

Savvy refers to the tendency to read other people's motives, understand office politics, and anticipate the needs and intentions of others.

- *High* scorers are likely to be able to predict the motives of others, and may adapt more easily to differing social and political situations.
- *Low* scorers may be more oblivious to the motives of others and adapt less easily to changes in social and political situations.
- *Sample Item:* It is easy for me to pick up on the politics at work.

Sociability refers to the tendency to enjoy being in other people's company and to work with others.

- *High* scorers are likely to be outgoing, gregarious, and participative.
- *Low* scorers may be shy or reserved; they may prefer to work alone and usually do not seek (or even avoid) social situations.
- *Sample Item:* I frequently attend social gatherings.

Stability refers to the tendency to maintain composure and rationality in situations of actual or perceived stress.

- *High* scorers are generally calm, even tempered, and feel capable in stressful situations.
- *Low* scorers may feel more nervous and experience more self-doubt when in stressful situations.
- *Sample Item:* I get stressed easily. (reverse keyed)

Striving refers to the tendency to have high aspiration levels and to work hard to achieve goals.

- *High* scorers are likely to strive for competence in their work, have a sense of direction in life, and be ambitious.
- *Low* scorers are not as likely to be attached to their work, are less motivated, and place a lower priority on hard work.
- *Sample Item:* I know what my goals are and I constantly work toward them.

As noted earlier in this section, the Talent Assessment also includes four compound scales or indices. A compound scale incorporates elements or facets of different personality constructs that are all related to a set of job-related criteria, such as teamwork or managerial performance. Scale definitions and detailed descriptions of high and low scorers for the four Talent indices are presented below. No sample items are provided because the indices are composed of subsets of the items from existing Talent scales.

Teamwork refers to the extent to which an individual will demonstrate compromise, cooperation, and interpersonal understanding when working in teams.

- *High* scorers are likely to work particularly well with others and as part of a team. Such individuals are likely to be very pleasant, helpful,

respectful of other perspectives, willing to compromise, and empathic. They are likely to have excellent communication skills (e.g., professional tone, clarity) and project a positive attitude about the work, coworkers, and the organization.

- *Low* scorers may have difficulty when working with others or as part of a team. Such individuals may lack the necessary interpersonal skills (e.g., being pleasant, helpful, respectful of other perspectives, willing to compromise, empathic), communication skills (e.g., professional tone, clarity), or a positive attitude about the work, coworkers, and the organization.

Work discipline refers to the extent to which an individual will demonstrate dependability, as well as a disciplined and positive attitude toward the job, rules and regulations, and the work environment.

- *High* scorers are likely to show a high level of dependability, productivity, and a disciplined attitude toward the job (e.g., consistently meeting deadlines, completing work accurately, complying with rules and regulations). Such individuals are likely to be highly reliable, willing to put forth extra effort, and inclined to project a positive attitude about the work and the organization on a regular basis.

- *Low* scorers may not be as dependable, productive, or disciplined in their work as most other people. Such individuals are likely to miss deadlines, produce work that has inaccuracies, and/or occasionally disregard rules and regulations. They may have difficulty putting forth the extra effort required to overcome obstacles, or maintaining a positive attitude about the work and the organization on a regular basis.

Managerial potential refers to the potential that an individual will demonstrate a high level of work performance in supervisory/managerial roles.

- *High* scorers are likely to demonstrate a high level of work performance in supervisory/managerial roles. Such individuals are likely to be charismatic and persuasive leaders with strong communication skills and enthusiasm about the work and the organization. Such individuals are likely to be excellent problem solvers and put forth the extra effort it takes to be very successful.

- *Low* scorers are likely to have difficulty meeting the performance demands in supervisory/managerial roles. Individuals at this score level may lack the necessary communication skills (e.g., professional tone, clarity, positive attitude), interpersonal skills (e.g., assertiveness, persuasiveness), or perseverance (e.g., willingness to put forth extra effort) to succeed in the management of people and resources.

Customer service orientation refers to the potential that an individual will demonstrate a high level of attentiveness, courtesy, and helpfulness in serving customers.

- *High* scorers are likely to demonstrate a high level of work performance in customer service roles. Such individuals are likely to provide excellent service to customers and clients by building helpful relationships characterized by attentiveness, courtesy, empathy, and a positive attitude. They are likely to engage in flexible thinking to resolve customer concerns and to follow through with customers' needs until issues are resolved.

- *Low* scorers may have difficulty meeting performance demands in customer service roles. Such individuals may have difficulty building helpful relationships with customers and clients. They may lack the necessary interpersonal skills (e.g., courtesy, empathy, positive attitude), problem solving skills (e.g., accurately identifying issues, coming up with creative solutions), or perseverance (e.g., following through with customers' needs until issues are resolved) to provide good service to customers.

Refer to Chapter 4 for more details on the development and validation of the Talent indices.

Sample Instructions and Items

Individuals who take the Talent Assessment will see instructions and test items (Table 2) which are similar to the following:

Instructions: Listed below are statements you might use to describe your behaviors, feelings, and other characteristics. Read each statement and indicate how well it describes you by filling in the appropriate oval preceding each statement.

Read each statement carefully, but do not spend too much time deciding on any one answer. Although some statements may seem similar, answer each without considering your other answers.

Table 2
Sample Test Items

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree	
O	O	O	O	O	O	I like coming up with imaginative solutions.
O	O	O	O	O	O	I am not very creative.
O	O	O	O	O	O	It's hard for me to read social cues.
O	O	O	O	O	O	I am punctual.
O	O	O	O	O	O	Too much work tends to really stress me out.
O	O	O	O	O	O	I usually stay calm, even in stressful situations.
O	O	O	O	O	O	I like to take initiative.
O	O	O	O	O	O	I am skeptical of other people's motives.

Where Does the Talent Assessment Fit in a Typical Applicant Process Flow?

It is not difficult to integrate the Talent Assessment into most applicant flow processes.

Although specific details will vary from organization to organization, the following steps, along with Figure 1, illustrate how many organizations typically incorporate personality testing into their existing selection process.

Step One   Applicants submit a job application or resume.

Step Two   Human resource professional or hiring manager reviews applications or resumes and decides whether or not the applicant meets the minimum job requirements. Unqualified applicants are rejected or considered for another position for which they are better qualified.

Step Three   Applicants complete Internet-delivered pre-employment testing (including personality testing) on-site at the hiring organization or another suitable location.

Step Four   After testing is complete, score reports are immediately available (as PDF files) to the hiring organization. Scores are reviewed by the human resource department or hiring manager.

■ Organizations using a "multiple-hurdle" hiring approach may choose to eliminate applicants from consideration who fail to meet pre-established minimum score levels on each test or test scale.

Step Five   Applicants with acceptable test performance are interviewed.

■ Some organizations may choose to interview all applicants who have tested, regardless of scores.

Step Six   Organization determines which applicants to potentially hire and then conducts a background check on each finalist candidate.

Step Seven   Applicants are hired and begin working.

Note: Depending on employer needs and existing processes, steps two and three may be reversed so that an individual completes the Talent Assessment previous to an HR professional conducting a full review of the individual's application materials.

Figure 1
Applicant Process Flow

```
┌─────────────┐      ◇─────────────◇      ⬣───────────⬣
│  Applicant  │      │Initial Review│      │    Not    │
│   Submits   │ ───▶ │ of Applicant │ ───▶ │ Qualified │
│Job Application/│    │Qualifications│      │   STOP    │
│   Resume    │      ◇─────────────◇      ⬣───────────⬣
└─────────────┘             │
                            ▼
              ┌─────────────┐      ◇─────────────◇      ⬣───────────⬣
              │  Applicant  │      │   Review    │      │    Not    │
              │  Completes  │ ───▶ │ Test Scores │ ───▶ │ Qualified │
              │Talent & Other│     │             │      │   STOP    │
              │ Assessments │      ◇─────────────◇      ⬣───────────⬣
              └─────────────┘             │
                                          ▼
                            ◇─────────────◇      ⬣───────────⬣
                            │ Employment  │      │    Not    │
                            │  Interview  │ ───▶ │ Qualified │
                            │             │      │   STOP    │
                            ◇─────────────◇      ⬣───────────⬣
                                   │
                                   ▼
                            ◇─────────────◇      ⬣───────────⬣
                            │ Background  │      │    Not    │
                            │ & Reference │ ───▶ │ Qualified │
                            │   Checks    │      │   STOP    │
                            ◇─────────────◇      ⬣───────────⬣
                                   │
                                   ▼
                            ┌─────────────┐
                            │  Employee   │
                            │   Hired     │
                            └─────────────┘
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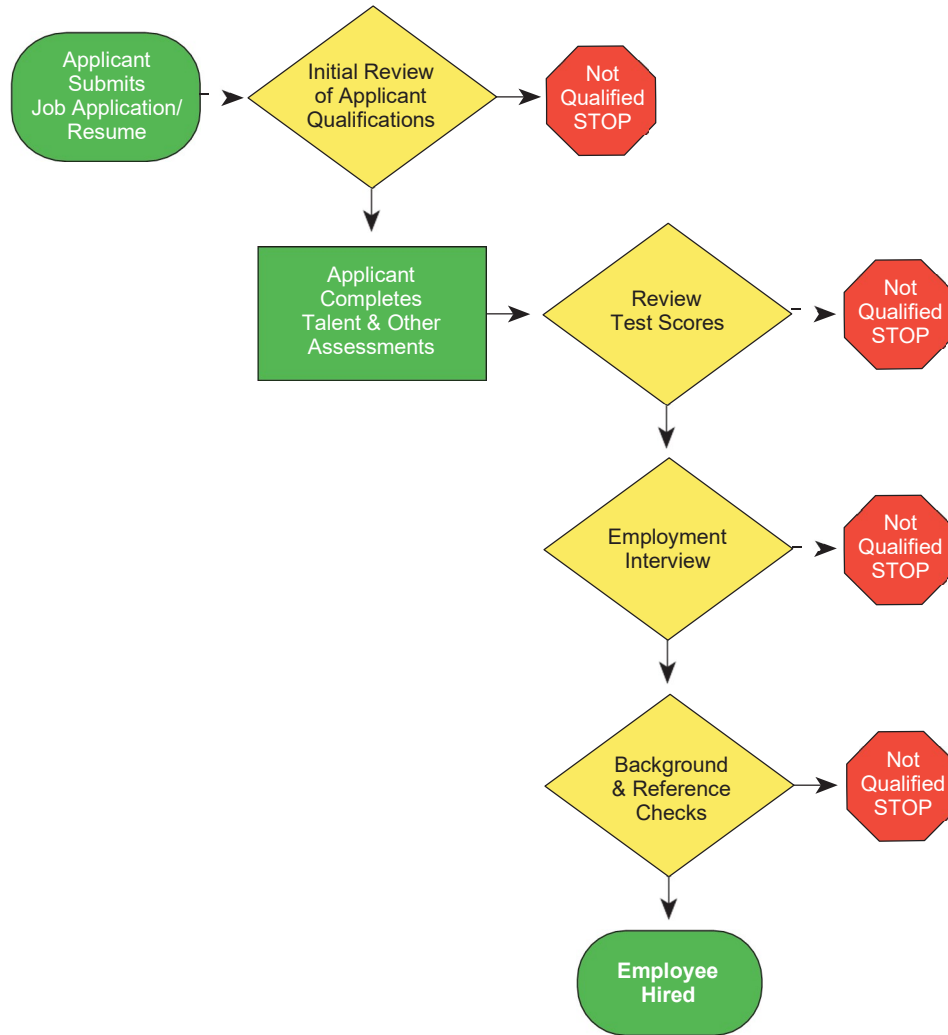
How Can My Organization Use the Talent Assessment Indices as Part of Our Employee Selection Process?

ACT recommends the use of job profiling for positions in which employers wish to apply the teamwork, managerial potential, and customer service orientation indices within a selection context. This recommendation is designed to ensure that the aforementioned indices provide a good match to the qualifications of the position in question. It is not necessary to conduct a job profile to use the work discipline index, which is designed to be applicable to a broad range of occupations.

Talent indices provide employers with powerful tools to help identify the right candidates for broadly-defined jobs that require the characteristics they measure (e.g., teamwork, managerial potential). Businesses have some flexibility in determining how to best use the Talent indices taking into account factors such as job requirements, employer needs, and market forces. For example, employers can use the indices as prescreening devices for job applicants or in combination with other components of a selection system. These two examples are described in more detail below.

11

Case 1: Prescreening

Prescreening job applicants is one use for the Talent indices. In this context, employers can use the results from the Talent indices to establish a pool of desirable applicants. Here is an example of how this works:

Step One   Applicants complete the Talent Assessment.

Step Two   High-scoring applicants on the Talent index of interest continue the selection process. A cutoff score ensures that only those applicants who are at or above the cutoff point proceed to subsequent steps.

Step Three   The applicants proceed through the remaining steps of the selection system, which might include an application review, a knowledge test, and an interview.

Step Four   Applicants with the highest scores across the employer's selection system are hired.

Case 2: Assessment Set with Specific Cut Scores

In this example, multiple tests are used and job candidates are required to meet or exceed the cutoff score on each test. This approach is most appropriate when the job requires a minimal amount of a certain set of key characteristics. For example, if an employer is selecting candidates for a managerial job, strong interpersonal skills cannot compensate for inadequate foundational skills or lack of experience. Here is an example of how the Talent indices may be used with other WorkKeys tests:

Step One   The employer reviews job candidate applications to confirm such requirements as minimum experience or educational credentials.

Step Two   Applicants who pass the application review take the required tests, such as WorkKeys Talent, Applied Mathematics, and Reading for Information.

Step Three   Only those applicants who meet or exceed the required scores on all tests and other requirements are scheduled for the last step of the selection system, such as an interview.

Step Four   Applicants with the highest scores in this last step are hired.

As suggested in both of the cases detailed above, ACT recommends that the Talent indices be used as part of a multiple hurdle approach. Such an approach includes multiple stages—called hurdles—in which information from a variety of different sources (e.g., tests scores, interview results, work samples) is used to make a hiring decision once applicants pass all hurdles in the process.

Recommendations concerning Cutoff Scores

For selection applications, organizations sometimes use cutoff scores to identify pools of more and less qualified applicants. For these cases, ACT has identified a set of score ranges to help organizations group applicants into high and low potential groups. Essentially, those scoring in the top quartile have good potential for success, and those in the bottom quartile have a much lower potential. The three groups are described below.

High Index Score (76 to 99)

A high Talent index score suggests a candidate may be highly desirable. Individuals with the highest scores on the index of interest will likely perform at higher levels than candidates whose scores are considerably lower. For example, a score in the 88th percentile indicates that the expected performance for this individual is the same as or higher than 88% of other individuals who took the test.

Moderate Index Score (26 to 75)

A moderate Talent index score suggests a candidate may be moderately desirable. Individuals with these scores are likely to perform at reasonable levels when compared to others. Selection of candidates in this score range should be done with the recognition that they are good candidates who may have a few limitations. For example, a score in the 55th percentile indicates that the expected performance for this individual is the same as or higher than 55% of other individuals who completed the assessment.

Low Index Score (1 to 25)

A low Talent index score suggests a candidate may be less desirable. Individuals with these scores are likely to perform at a lower level than candidates whose scores are considerably higher. Selection of an applicant in this score range should be done with considerable caution. For example, a score in the 15th percentile indicates that the expected performance for this individual is the same as or higher than only 15% of other individuals who took the test.

How Can My Organization Use the Talent Assessment Scales as Part of Our Employee Selection Process for Specific Jobs?

While it is not difficult for an organization to begin using the Talent Assessment for specific jobs that may not match the Talent indices, it is important to ensure several steps have been completed prior to the test being administered to job applicants. In using the Talent Assessment for selection for specific jobs, ACT strongly recommends the use of benchmarking, which is described below and illustrated in Figure 2.

Step One Organization decides which jobs will use the Talent Assessment as part of the selection process.

Step Two Jobs are grouped into occupational categories. The essential components of each job and occupational category are identified from job descriptions, job analyses, and interviews with incumbents and managers.

Example. Several similar call center jobs at a major financial services organization are grouped into the occupational category *Customer Service Representative*. After reviewing job descriptions and interviewing managers and incumbents, it is determined that essential job components for Customer Service Representatives include:

- Clear and effective communication with clients, supervisors, and fellow employees
- Cross-selling of products and services
- Maintenance of detailed records (e.g., call records)
- Management of multiple tasks under pressure

Step Three   Benchmarking. Talent Assessment is administered to a sample of job incumbents from each occupational category. Additionally, incumbents' supervisors complete a standard set of job performance ratings for participating incumbents. Talent scores along with supervisor ratings are used to construct a profile of successful employees in each occupational category. Talent scores from job applicants can be compared to this profile.

Step Four   Benchmark findings (i.e., incumbent scores and supervisor ratings) are reviewed in light of the essential job components identified in Step 2.

Step Five   Applicant testing begins.

Step Six   Custom reports comparing job applicants to the established benchmark(s) are generated by ACT (see Chapter 5 for sample reports).

Figure 2
Talent Assessment Benchmarking Process for Selection
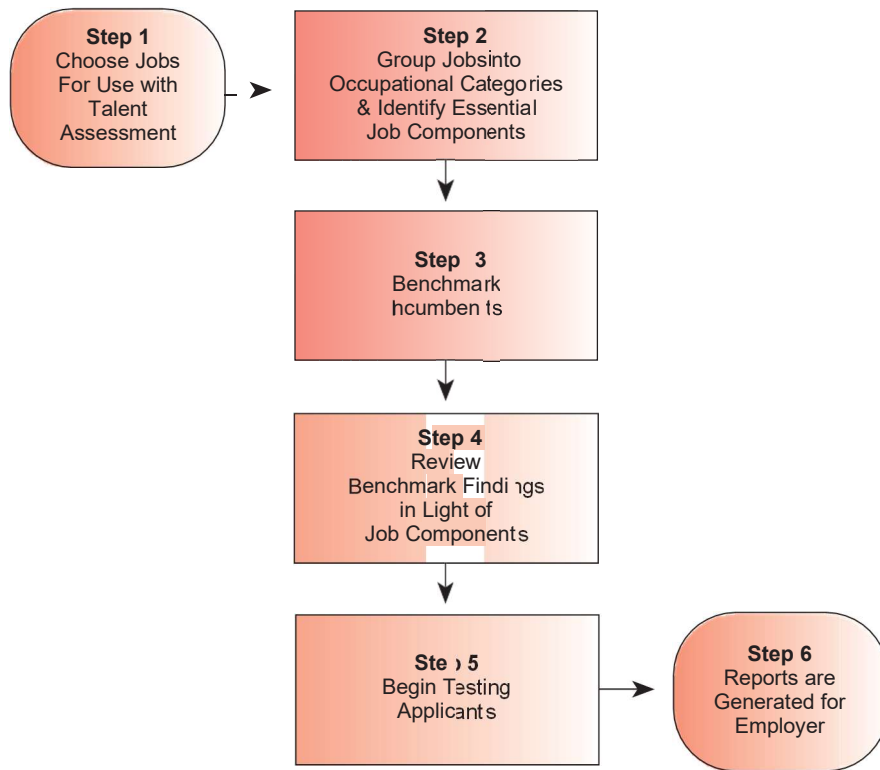
Interpreting Scores for Different Occupations

The skills and abilities that are necessary for successful job performance can vary considerably between occupations. Not surprisingly, average scores on some Talent scales vary by occupation. As seen in Figure 3, sales representatives and sales managers show notably higher scores than computer programmers on the Talent Influence, Savvy, and Sociability scales. Such differences between occupations highlight the importance of grouping similar jobs together into occupational categories for test interpretation purposes.

On the other hand, some Talent scales predict job performance in a wide variety of different occupations. Examples of such scales include Carefulness and Discipline, as these scales measure people's tendency to be conscientious, responsible, pay attention to detail, and so on. As evident in Figure 3, the score differences between computer programmers and sales representatives are much smaller for the Carefulness and Discipline scales.

Figure 3
A Comparison of Talent Scale Scores for Computer Programmers vs. Sales Representatives & Sales Managers

Using the Talent Assessment for Employee Development

The WorkKeys Talent Assessment can also be used to facilitate coaching and development. As noted in Chapter 1, personality tests can be used to:

- Identify an employee's personality-related behavioral competencies that may benefit from training and development activities (e.g., time management skills, communication skills)
- Enhance an employee's self-awareness
- Enhance team effectiveness

The following steps outline one way in which an organization, whether a company or a one-stop service center, may choose to use the Talent Assessment for coaching and development.

Step One   Organization identifies specific jobs, job families, or individuals that would benefit from personality-related coaching and development. Alternately, an organization may choose to offer this opportunity to all individuals in a particular department or program.

Step Two   Examinees take the Internet-delivered WorkKeys Talent Assessment.

Step Three   Personnel trained to interpret the Talent Assessment score reports (such as a supervisor, manager, HR professional, or one-stop service center counselor) review the Talent scores with the examinee and devise a customized training or development plan that addresses any areas that warrant improvement. The organization can then direct the individual toward resources which facilitate the needed improvements.

Step Four   An individual's job performance is monitored for improvement.

Underlying personality traits are difficult to alter regardless of training. Therefore, the goal of a personality-based development program is not to alter an employee's personality per se, but rather to enhance self-awareness and provide access to tools that may change how specific personality characteristics are expressed in certain work situations. For example, it is unlikely that a highly introverted individual (someone that scores low on the Talent Sociability scale) will become highly social and outgoing no matter what amount or quality of training is provided. However, targeted training may allow such an individual to develop the presentation and interpersonal communication skills necessary for successful job performance. Even small skill improvements may be extremely valuable if they enable an employee to reach or exceed certain performance standards.

Additional details regarding the use of the Talent Assessment for development purposes are provided in Chapter 5.

3
Development and Evaluation of the WorkKeys Talent Assessment

Consumers of assessments consider several issues prior to selecting an assessment or test. They consider how the assessment was developed. Some common questions are: Is the test consistent with up-to-date theory and empirical evidence? Is the test constructed using the latest technology in the field? Who comprised the norming sample for the test? Additionally, consumers of assessments need to consider the psychometric properties of the test. Specifically, consumers should evaluate the evidence that supports the *validity* of a test—whether the test measures what it claims to measure, and whether the test results can be influenced by answers that are not necessarily true. Employers must also be informed about the *reliability* of the test, which reflects evidence about the consistency of test scores. Further, employers are frequently concerned about the examinees' *reaction* to personality assessments. Finally, employers must consider the *fairness* of their overall hiring practices to understand the impact of a personality test.

Thus, the process used to develop the Talent Assessment, as well as the properties of the resulting test, are explained in more detail below. Although a careful review of this section is not necessary to understand the Talent Assessment, it is useful for those who would like a clearer understanding of the technical details of the instrument.

Development of the Talent Assessment

A three-part process was used to develop the Talent Assessment:

(1) preparation of the initial item pool based on a review of the literature;

(2) empirical item selection procedures, including supervisor ratings of examinee work performance and structural analyses; and

(3) establishment of the psychometric properties of the test, including reliability, and criterion and construct validity, as well as examination of adverse impact and other issues.

Preparation of the Initial Item Pool

Preparation of the initial item pool was based on the industrial/organizational and personality psychology literatures where the validity of personality tests for predicting various aspects of workplace behavior and job performance is well-documented (e.g., Barrick & Mount, 1991; Hogan, Rybicki, Motowidlo, & Borman, 1998; Motowidlo, Borman, & Schmit, 1997; Ones, Viswesvaran, & Dilchert, 2005). Additional reviews of the literature on personality and job performance led to the identification of several key constructs. ACT researchers wrote comprehensive construct definitions and obtained feedback from experts in the fields of industrial/organizational and personality psychology.

Following revisions and confirmation of face validity, definitions were finalized and shared with item writers. A research team, comprised of six applied psychologists, wrote items representing the constructs. Writers generated items independently and then met to discuss the breadth of coverage and revisions. This procedure yielded an initial item pool of 597 items.

Readability Test

To ensure that the items would be comprehensible to a wide range of examinees, items were administered to a sample of employees. The workers were asked to rate the extent to which they understood the meaning of the items using a 5-point, Likert-type scale ranging from *very easy to understand* to *very difficult to understand*. Based on the mean ratings of item clarity, items were deleted or revised. Subsequently, the revised items were presented to a second group of experts in workforce and communication who were asked to comment on item clarity. The items were again revised based on this feedback.

The resulting item pool consisted of 316 items, which were randomly ordered and set to a 6-point, Likert-type response scale ranging from *strongly disagree* to *strongly agree*. Administration instructions were developed, along with procedures to maintain the confidentiality of field test participants.

Empirical Item Selection

To select items for the Talent Assessment, ACT research staff used a multi-step procedure that included the following: (1) development of supervisor rating scales as performance criteria; (2) structural analyses, including exploratory and confirmatory factor analyses; and (3) item selection that emphasized both criterion and construct validity.

Development of Supervisor Rating Scales. The next step toward selecting items for the Talent Assessment consisted of developing supervisor rating scales to use as performance criteria. These scales enabled supervisors of incumbents participating in field studies to complete a set of performance ratings about their employees. To develop the supervisor ratings of employee performance, ACT researchers examined the relevant literature on performance criteria, such as task performance, prosocial/organizational citizenship behaviors, and counterproductive behaviors, as well as normative rating and general performance (Barrick & Mount, 1991; Borman, Penner, Allen, & Motowildo, 2001; Rotundo & Sackett, 2002; Salgado, 2002). A total of 41 supervisor ratings were developed. A sample item from the prosocial/organizational citizenship behavior scale is featured below:

Compliance toward organization/supervisor

- Shows respect for people in positions of authority
- Is responsive to supervisory requests
- Has a good working relationship with supervisor
- Consistently follows policies and procedures
- Speaks to supervisor with respect

○ Never   ○ Not Very Often   ○ Sometimes   ○ Often   ○ Very Often   ○ Always

---

Ratings from 1,690 supervisors who participated in this and other field tests were used to derive the final performance criteria scales. ACT researchers conducted both exploratory and confirmatory factor analyses. The supervisor sample was randomly split into two groups, with 70 percent of the sample in the "exploratory" group ($n = 1,183$) and the remaining 30 percent in the "confirmatory" group ($n = 507$). A factor analysis on the exploratory group resulted in seven factors. Subsequently, a confirmatory factor analysis specifying seven latent factors was run on the data from the "confirmatory" group using the maximum likelihood estimation method.

The extent to which the model fit the data was examined by using the combination of several fit indexes (i.e., Comparative Fit Index, Normed Fit Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residuals). After completing the aforementioned factor analyses, 31 items were selected to comprise the four performance factors (scales). Table 3 features scale intercorrelations of supervisor rating scales. (Note: subsequent tables featuring supervisor criteria include the seven supervisor scales, as well as combinations of these scales.) The associations illustrated in Table 3 are consistent with research on the structure of job performance ratings and work behaviors (Rotundo & Sackett, 2002; Sackett, 2002), in which task and general job performance ratings are more strongly associated with prosocial/organizational citizenship behaviors than with counterproductive or safety/risk-taking behaviors.

Table 3

Intercorrelations of the Supervisor Talent Rating Scales

Scale (# of items)	1	2	3	4	5	6	7
1. Productivity and Effort (7)	.94						
2. High Performance (3)	.78	.87					
3. Safety/Risk-taking Behaviors (3)	.24	.19	.68				
4. Counterproductive Behaviors (7)	.53	.38	.47	.78			
5. Communication (4)	.79	.78	.23	.42	.87		
6. Teamwork Behaviors (3)	.68	.59	.31	.53	.66	.91	
7. Prosocial/Organizational Citizenship (4)	.76	.67	.29	.56	.69	.82	.87

Note. $N = 1,690$. Coefficient alphas are featured in the diagonal.

Characteristics of the Norming Sample. Participants represented 51 organizations spanning different industries and educational institutions (high school and two-year vocational/technical programs), including manufacturing, healthcare, education, food preparation and serving, construction, information services, as well as testing and publishing. The size of participating organizations ranged from small businesses to branches of multinational companies and one-stop service center programs (both high school and community college). Organizations were located throughout the United States. The average participating supervisor had been in his/her position for over two years and had been supervising an incumbent for an average of one to two years. The most common O*NET major occupation areas in the incumbent sample included: Production, Office and Administrative Support; Healthcare Practitioners and Healthcare Support; Education, Training, and Library; and Management. Other common major occupation areas included: Food Preparation and Serving; Installation, Maintenance and Repair; Sales; Construction and Extraction; and Computer and Mathematical. The modal amount of time that a participating incumbent had occupied the same position was at least two years.

The means and norms presented in this chapter (and Appendix A) are based on the norming sample ($N = 2,196$).[1] Typical incumbents in this

[1] The norming sample contains a larger and more diverse group of individuals than the development sample ($N = 891$). Structural analyses presented here are based on the development sample.

sample were approximately 37.8 years of age (SD = 13.4 years; range 16 to 79 years), and a majority were female, Caucasian, and had completed a high school diploma. The 650 incumbents who were matched to supervisor ratings have similar demographic characteristics as those of the overall norming sample. A more detailed breakdown of participants' demographic characteristics is featured in Table 4.

Table 4
Demographic Characteristics of the Normative Sample

Characteristic	% for the Normative Sample[1]	% for the Matched Sample[2]
Age		
16–30	34.7	33.8
31–45	35.1	33.3
46–60	25.6	28.7
61+	4.6	4.2
Gender		
Female	54.7	56.6
Male	45.3	43.4
Race/Ethnicity		
African American/Black	20.7	7.5
Native American/Alaskan Native	0.6	0.3
Caucasian American/White	71.3	81.2
Hispanic/Latino	2.5	3.4
Asian American/Pacific Islander	0.9	1.4
Multiracial	0.7	0.8
Other	1.1	1.5
No Response	2.3	3.9
Education		
No formal education	0.4	0.6
Elementary/Middle School	3.3	0.9
High School Diploma	37.1	38.5
GED	5.7	4.8
Trade School Certification	14.6	11.1
Associate's Degree	12.4	13.4
Bachelor's Degree	16.3	18.9
Master's Degree	8.3	10.2
Doctorate Degree	1.9	1.7

Note. [1]N = 2,196; [2]N = 650.

Structural Analyses

First, the items written for each scale were submitted to exploratory factor analyses (EFA) to assess the initial correlation structure of each scale. Items that did not contribute to a particular scale were identified for deletion from that scale and were considered as candidates for related scales. This process was carried out for several iterations. Table 5 features the intercorrelations of the Talent scales after the process was completed.

Table 5
Intercorrelations of the Talent Assessment Scales

Scale (# of items)	1	2	3	4	5	6	7	8	9	10	11	12
1. Carefulness (14)	.81											
2. Cooperation (12)	.42	.83										
3. Creativity (13)	.21	.37	.85									
4. Discipline (13)	.48	.41	.35	.87								
5. Goodwill (13)	.39	.54	.29	.38	.82							
6. Influence (13)	.13	.22	.52	.27	.15	.86						
7. Optimism (13)	.30	.47	.33	.38	.50	.28	.83					
8. Order (13)	.38	.29	.18	.54	.24	.13	.24	.85				
9. Savvy (14)	.29	.46	.48	.36	.32	.39	.37	.24	.83			
10. Sociability (14)	.06	.32	.32	.25	.27	.47	.37	.15	.42	.89		
11. Stability (13)	.25	.37	.31	.30	.34	.28	.49	.07	.22	.23	.86	
12. Striving (13)	.26	.32	.49	.45	.26	.53	.41	.36	.38	.41	.32	.84

Note. N = 891. Correlations $\geq$ .07 are significant ($p \leq$ .05). Alphas are featured in the diagonal.

Subsequently, the resulting scales were submitted to two sets of confirmatory factor analyses (CFA): one to examine the scale-level (i.e., first-order) structure of the instrument and the second to examine the construct-level (i.e., second-order) structure. For the first CFA, sets of three parcel scales were randomly formed from each of the Talent scales (average parcel contained four to five items). These parcels were used as indicators. Two alternative models were tested using LISREL (version 8.53; Joreskog & Sorbom, 2005) maximum likelihood estimation method: (1) a 12-factor model and a one-factor model. Based on several fit indexes (i.e., Comparative Fit Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residuals), the 12-factor model   provided a much better fit to the data than the one-factor model and all parcels had factor loadings greater than or equal to .60 on their respective scales. The results illustrated by Figure 4 provide confirmation of the scale-level structure of the Talent Assessment.

Figure 4
Scale-level Structure of the Talent Assessment
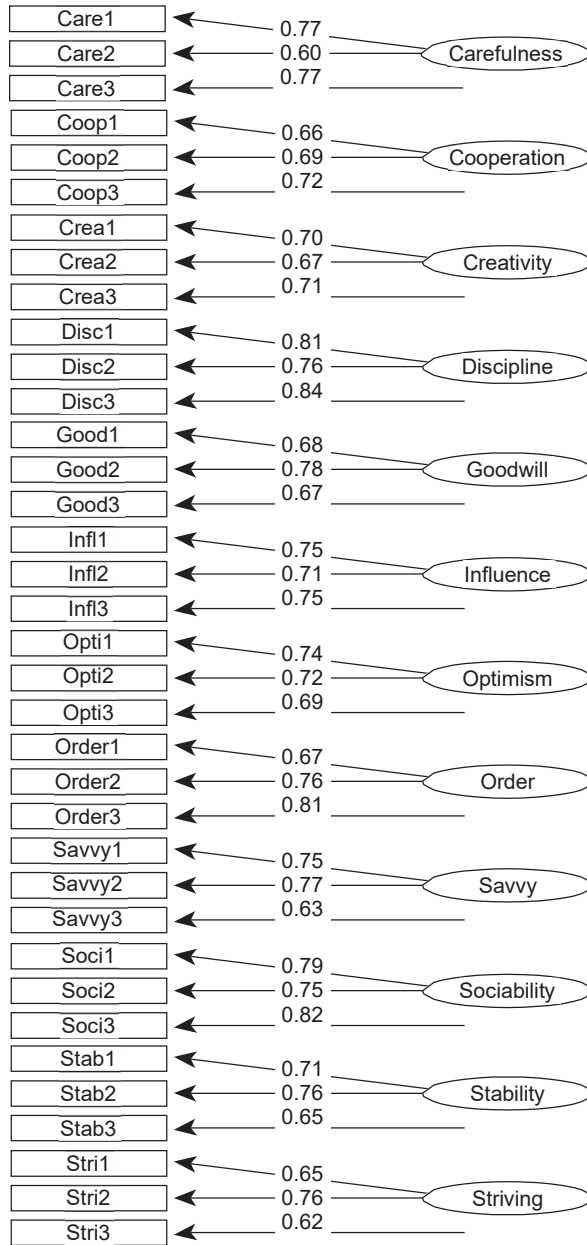
For the second CFA, the scores from each Talent scale were used as indicators to test two alternative construct-level models: (1) a 5-factor model consistent with the factors of the FFM, and (2) a two-factor model consistent with the alpha and beta factors proposed by Digman (1997). Based on several fit indexes (i.e., Comparative Fit Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residuals), the 5-factor model provided a better fit to the data than the two-factor model (see Figure 5) with the factor loading for each Talent scale reaching approximately .60 or greater on its corresponding Big Five construct. The results illustrated by Figure 5 provide confirmation of the construct-level structure of the Talent Assessment.

Figure 5
Construct-level Structure of the Talent Assessment
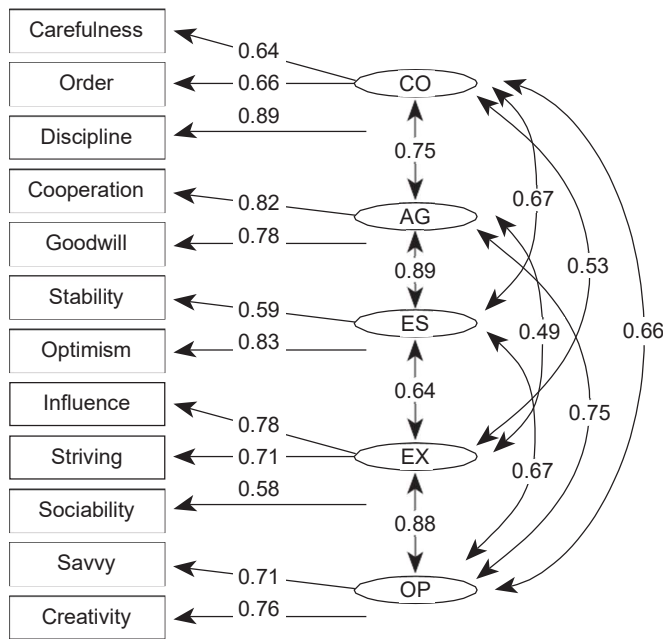
Note. CO = Conscientiousness, AG = Agreeableness, ES = Emotional Stability, EX = Extraversion, OP = Openness.

23

Relations with Supervisor Ratings

ACT research staff split the sample of matched responses ($N = 650$) into two subsamples. The first consisted of 70 percent of participants ($n = 455$), which was used as the development sample, and the second consisting of the remaining 30 percent of participants ($n = 195$), which was used as the cross-validation sample. This process is commonly used in test construction to assess the effects of sampling error and provide replication of the findings.

Incumbents' responses were correlated with the supervisor rating scales detailed in the previous section. Those items that correlated above a specified threshold with relevant performance criteria (or combinations of criteria) were maintained as candidates for inclusion into each Talent scale. The following were examined: (a) the observed validities with performance criteria, (b) the internal consistency reliabilities of the scales, and (c) the correlation between the scales. During this process, our objectives were to: (a) maximize observed validities with performance criteria, (b) maintain construct validity, (c) maximize internal consistency reliability, and (d) maintain each scale as relatively unique—that is, keep the scales from being too highly correlated with each other, and therefore less likely to provide redundant information and more likely to maximize their predictive power.

Once ACT research staff were satisfied with the results of the item selection process using the development sample, staff examined the properties of the twelve scales using the cross-validation sample to verify that the scales were working as expected. (Note: the results presented in this document feature data from the entire sample—i.e., the combination of the development and cross-validation samples. Results based on the separate samples are available upon request.)

Psychometric Properties of the Talent Assessment

This section features the properties of the Talent Assessment scales based on the normative sample, including descriptive statistics, reliability, and criterion and construct validity. Details about the development of a response inconsistency index to identify examinees with inconsistent responding, examination of adverse impact issues, and compliance with professional and government guidelines and standards also are provided.

Descriptive Statistics

Descriptive statistics (i.e., mean, standard deviation, and range) for the Talent scales based on the full normative sample ($N = 891$) are presented in Tables 6 and 7. Table 6 features descriptive statistics averaged across items for each of the Talent scales, all of which have a range from 1 to 6. Table 7 features descriptive statistics based on scale totals for all scales. Analyses of scale totals were conducted to assess the distributions of each scale. All scales approximate a normal distribution, with a few scales showing a slight skew toward higher scale scores. This pattern is common across personality measures, particularly for data based on incumbent employees. (Note: copies of the scale distributions are available upon request.)

Table 6

Descriptive Statistics at the Item Level

Variable	M	SD	Min	Max
Carefulness	4.50	.66	1.75	6.00
Cooperation	5.10	.59	2.50	6.00
Creativity	4.77	.67	1.91	6.00
Discipline	5.08	.64	2.38	6.00
Goodwill	4.73	.62	2.44	6.00
Influence	4.17	.84	1.44	6.00
Optimism	4.71	.65	1.85	6.00
Order	4.79	.72	1.67	6.00
Savvy	4.57	.61	2.11	6.00
Sociability	4.27	.85	1.10	6.00
Stability	4.20	.86	1.38	6.00
Striving	4.90	.71	1.78	6.00

Note. $N = 2{,}196$. The potential range for each scale is from 1 to 6.

Table 7

Descriptive Statistics at the Scale Level

Scale	M	SD	Min	Max
Carefulness	63.0	9.2	25.0	84.0
Cooperation	61.2	7.1	30.0	72.0
Creativity	62.1	8.7	25.0	78.0
Discipline	66.0	8.7	31.0	78.0
Goodwill	61.6	8.0	32.0	78.0
Influence	54.3	10.9	19.0	78.0
Optimism	61.2	8.5	24.0	78.0
Order	62.3	9.4	22.0	78.0
Savvy	64.0	8.6	30.0	84.0
Sociability	59.8	11.9	15.0	84.0
Stability	54.8	11.1	18.0	78.0
Striving	63.7	9.2	23.0	78.0

Note. $N = 2{,}196$. M = Mean, SD = Standard deviation.

Reliability

The reliability of a test reflects the stability of test results over time and across diverse settings. Thus, employers should select a test that yields consistent results for each individual, indicating the test is dependable. Essentially, reliability refers to the consistency of test results. Reliability is measured in two ways:

- Internal Consistency is the most popular measure of reliability and refers to how well items measuring the same concept relate with each other.

- Temporal Stability, also known as *test-retest* reliability, assesses whether results and responses on items from a test are consistent over time.

Research across assessments of the Five Factor Model (FFM) has reported moderate to high internal consistency (mean coefficient alphas = .73 to .75, SD = .09 to .12) and stability (mean test-retest = .69 to .76, SD = .10 to .14; mean time interval 332 to 785 days) (Viswesvaran & Ones, 2000).

In a field study conducted by ACT, the WorkKeys Talent Assessment scales demonstrated good to excellent internal consistency reliabilities (coefficient alpha range = .81 to .89, median = 85) (refer back to Table 5 for alphas corresponding to each scale).

Validity

Validity refers to the ability of a test to measure what it is intended to measure. Meta-analyses of the industrial/organizational psychology literature have repeatedly documented the validity of personality assessments for predicting job performance (Barrick & Mount, 1991). A recent meta-analysis (Salgado, 2003) on the Five Factor Model of personality reports correlations between each of the five factors and overall job performance ranging from .04 to .17; with operational validity estimates (after correcting for measurement error and range restriction) ranging from .07 to .28. Furthermore, the capability of personality tests to predict workplace and counterproductive behaviors has been demonstrated across a variety of occupations, work settings, and employee statuses.

Criterion Validity. In a recent field study, the WorkKeys Talent Assessment was administered to approximately 1,000 incumbent employees and students in diverse organizations. For incumbents, scores on individual Talent scales were found to be predictive of supervisor ratings of overall job performance and other work-related behaviors.

Table 8 features observed and corrected criterion validities between the Talent scales and the supervisor rating scales. The table is divided into two sets of criteria: general performance ratings (similar to those used in the WorkKeys Performance Assessment; see www.act.org/workkeys/assess/performance for more information), as well as a broader range of more specific performance ratings. Several convergent/discriminant patterns are worth noting both in the general and specific criteria.

Regarding the general criteria, several Talent scales are correlated with overall performance (Carefulness, Cooperation, Discipline, Savvy). When overall performance is divided into components such as task, prosocial/organizational citizenship, counterproductive, and safety behaviors, the Talent scales are useful correlates of such workplace behaviors. For example, task performance is correlated with Creativity,

Discipline, Influence, and Savvy. Prosocial/organizational citizenship is correlated with Carefulness, Cooperation, Goodwill, Optimism, and Savvy. Counterproductive behaviors are correlated with Carefulness, Cooperation, and Sociability. Safety behaviors are correlated with Carefulness, Cooperation, and Influence.

Regarding more specific criteria, such as communication and teamwork, several Talent scales also are useful correlates. For example, Carefulness, Cooperation, Creativity, Discipline, Goodwill, Influence, Savvy, and Striving are correlated with supervisor ratings of communication skills. Similarly, Carefulness, Cooperation, Discipline, Goodwill, Optimism, Savvy, and Striving are correlates of teamwork behaviors. Additionally, several Talent scales were correlated with supervisor ratings of productivity and high performance: Creativity, Discipline, Influence, Savvy, and Striving.

Validity Corrections. Researchers generally do not rely on observed validity as a final estimate of the criterion-validity of a test. This is because observed validity estimates tend to be attenuated or reduced by a variety of biasing effects, such as measurement error (i.e., unreliability in supervisor ratings) and range restriction. For instance, although one is mainly interested in the ability of a test to predict the performance of applicant samples, most test validation research is performed on incumbent samples since it is more feasible to conduct such research with incumbents. Further, incumbent performance cannot be measured without measurement error, as supervisors tend to be idiosyncratic in their ratings. To obtain the "true" (a.k.a. operational) validity of a test, one must use psychometric techniques to correct for such biasing effects (Callender & Osburn, 1980; Raju & Burke, 1983; Sackett & Yang; 2000).

To account for these biases, ACT research staff corrected the observed validities of the Talent Assessment scales shown in Table 8. First, staff corrected for measurement error (i.e., supervisor unreliability) using meta-analytically derived inter-rater reliability (ranging from .52 to .60, depending on the content of performance measure) as reported by Viswesvaran, Ones, and Schmidt (1996).

However, this validity estimate is still not accurate for the desired application of the Talent Assessment, as the correction is limited to the incumbent sample—the basis for supervisors' ratings—and thus influenced by range restriction. Direct range restriction (DRR) applies when individuals are selected only on the basis of one predictor (i.e., the test of interest). However, in reality, a single predictor is rarely used as the final selection criterion; instead, a variety of sources of information are commonly used (e.g., test scores, structured interviews, letters of recommendation, performance reviews). Thus, indirect range restriction (IRR) applies to cases where a variety of information is used to make selection or other decisions, which is typical in almost all assessment applications. Validity corrected for IRR is seen as more accurate and more appropriate for use in utility analyses (Le & Schmidt, 2006; Schmidt, Oh, & Le, 2006). ACT research staff further corrected the validity estimates of the Talent scales for both DRR and IRR using meta-analytically derived mean range restriction ratio (u_x) of .82 as reported in Salgado (2003) and the local reliability estimates (range of .81 to .89). For a detailed explanation of DRR and IRR, see Hunter & Schmidt, 2004; and Hunter, Schmidt, & Le, 2006.

Table 8
Talent Assessment Validity Correlations for the Normative Sample Based on Supervisor Ratings

Job Performance Criteria	Carefulness					Cooperation					Creativity			
		Operational Validity					Operational Validity					Operational Validity		
	Obs *r*	cME	DRR	IRR		Obs *r*	cME	DRR	IRR		Obs *r*	cME	DRR	IRR
General Performance														
Overall Supervisor Ratings*	.14	.20	.24	.27		.12	.16	.19	.21		.09	.12	.15	.17
Task	.09	.12	.14	.16		.04	.05	.07	.07		.11	.15	.18	.20
Prosocial	.17	.24	.29	.32		.19	.26	.31	.34		.06	.08	.10	.11
Counterproductive	.14	.19	.23	.25		.12	.17	.20	.22		.02	.02	.03	.03
Safety	.13	.17	.21	.23		.14	.19	.23	.25		-.04	-.05	-.06	-.07
Specific Performance Ratings														
Productivity	.10	.14	.17	.18		.06	.08	.10	.11		.07	.09	.11	.12
High Performance	.06	.08	.10	.11		.03	.05	.06	.06		.17	.24	.29	.32
Safety (narrow)	.13	.17	.21	.23		.15	.20	.24	.26		-.02	-.02	-.03	-.03
Counterprod (narrow)	.14	.19	.23	.25		.12	.17	.20	.22		.00	.00	.00	.00
Communication	.13	.20	.24	.26		.10	.15	.18	.20		.16	.24	.29	.32
Teamwork	.18	.26	.31	.34		.20	.29	.34	.37		.06	.08	.10	.11
Org Citizenship	.14	.20	.24	.26		.16	.22	.27	.29		.09	.12	.15	.16

*Overall Supervisor Ratings includes all items from Task, Prosocial, Counterproductive, and Safety dimensions.

Note. $N = 650$, Obs *r* = observed correlation, cME = corrected for measurement error in the criterion, DRR = direct range restriction corrections, IRR = indirect range restriction corrections. Correlations ε .10 are significant (*p* δ .05).

Table 8 (continued)

Job Performance Criteria	Discipline				Goodwill				Influence			
		Operational Validity				Operational Validity				Operational Validity		
	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR
General Performance												
Overall Supervisor Ratings*	.13	.19	.23	.24	.09	.12	.15	.16	.05	.07	.09	.10
Task	.14	.18	.22	.23	.04	.05	.07	.07	.13	.16	.20	.21
Prosocial	.10	.14	.17	.18	.14	.19	.23	.25	-.02	-.03	-.03	-.03
Counterproductive	.05	.07	.08	.09	.05	.07	.08	.09	-.08	-.11	-.14	-.15
Safety	.07	.10	.12	.13	.10	.13	.16	.18	-.12	-.15	-.19	-.20
Specific Performance Ratings												
Productivity	.16	.21	.25	.27	.06	.08	.09	.10	.07	.09	.11	.12
High Performance	.10	.15	.18	.19	.03	.04	.05	.06	.19	.28	.33	.36
Safety (narrow)	.02	.03	.04	.04	.12	.16	.20	.22	-.12	-.16	-.19	-.21
Counterprod (narrow)	.07	.09	.11	.12	.05	.07	.08	.09	-.09	-.12	-.14	-.16
Communication	.15	.22	.26	.28	.10	.15	.18	.20	.17	.25	.30	.32
Teamwork	.11	.16	.19	.20	.15	.22	.27	.29	-.01	-.02	-.02	-.02
Org Citizenship	.12	.16	.19	.20	.11	.15	.18	.20	.02	.02	.03	.03

*Overall Supervisor Ratings includes all items from Task, Prosocial, Counterproductive, and Safety dimensions.

Note. N = 650, Obs r = observed correlation, cME = corrected for measurement error in the criterion, DRR = direct range restriction corrections, IRR = indirect range restriction corrections. Correlations ε .10 are significant (p δ .05).

Table 8 (continued)

Job Performance Criteria	Optimism				Order				Savvy			
		Operational Validity				Operational Validity				Operational Validity		
	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR
General Performance												
Overall Supervisor Ratings*	.08	.12	.14	.16	.04	.06	.07	.08	.15	.21	.25	.27
Task	.06	.07	.09	.10	.04	.05	.06	.07	.13	.17	.21	.23
Prosocial	.14	.19	.23	.25	.04	.05	.07	.07	.17	.23	.28	.30
Counterproductive	.02	.03	.04	.04	.01	.02	.02	.02	.04	.06	.07	.08
Safety	.01	.01	.01	.01	.05	.07	.08	.09	.06	.08	.10	.11
Specific Performance Ratings												
Productivity	.06	.08	.10	.11	.07	.10	.12	.13	.12	.15	.19	.21
High Performance	.08	.11	.14	.15	-.01	-.02	-.02	-.03	.16	.23	.27	.30
Safety (narrow)	.02	.03	.04	.04	.03	.04	.05	.06	.06	.08	.10	.11
Counterprod (narrow)	.01	.02	.02	.03	.02	.03	.04	.04	.04	.06	.07	.08
Communication	.08	.12	.15	.16	.05	.08	.10	.11	.20	.29	.35	.38
Teamwork	.13	.19	.23	.25	.05	.08	.09	.10	.17	.25	.30	.33
Org Citizenship	.13	.18	.22	.24	.03	.04	.05	.06	.16	.22	.26	.29

*Overall Supervisor Ratings includes all items from Task, Prosocial, Counterproductive, and Safety dimensions.

Note. $N = 650$, Obs r = observed correlation, cME = corrected for measurement error in the criterion, DRR = direct range restriction corrections, IRR = indirect range restriction corrections. Correlations ε .10 are significant (p δ .05).

Table 8 *(continued)*

| Job Performance Criteria | Sociability | | | | Stability | | | | Striving | | | |
| | | Operational Validity | | | | Operational Validity | | | | Operational Validity | | |
	Obs *r*	cME	DRR	IRR	Obs *r*	cME	DRR	IRR	Obs *r*	cME	DRR	IRR
General Performance												
Overall Supervisor Ratings*	-.01	-.01	-.02	-.02	.02	.03	.04	.04	.09	.12	.15	.17
Task	.02	.02	.02	.03	.00	.00	.00	.00	.10	.13	.16	.18
Prosocial	.00	-.01	-.01	-.01	.06	.09	.11	.12	.08	.11	.14	.15
Counterproductive	-.11	-.15	-.18	-.19	.00	.00	.00	.00	.00	.00	.00	.00
Safety	-.06	-.08	-.10	-.10	-.01	-.02	-.02	-.03	-.02	-.03	-.03	-.03
Specific Performance Ratings												
Productivity	-.01	-.01	-.02	-.02	-.01	-.01	-.02	-.02	.07	.09	.11	.12
High Performance	.08	.11	.14	.15	.01	.02	.02	.03	.13	.19	.23	.26
Safety (narrow)	-.07	-.09	-.11	-.12	-.01	-.01	-.01	-.01	-.03	-.04	-.05	-.06
Counterprod (narrow)	-.10	-.13	-.16	-.17	.00	-.01	-.01	-.01	.00	.00	.00	.00
Communication	.07	.10	.12	.13	.05	.08	.10	.11	.15	.23	.27	.31
Teamwork	.01	.02	.03	.03	.05	.07	.09	.10	.08	.12	.14	.16
Org Citizenship	.01	.01	.01	.01	.05	.08	.09	.10	.09	.13	.16	.18

*Overall Supervisor Ratings includes all items from Task, Prosocial, Counterproductive, and Safety dimensions.

Note. N = 650, Obs *r* = observed correlation, cME = corrected for measurement error in the criterion, DRR = direct range restriction corrections, IRR = indirect range restriction corrections. Correlations ε .10 are significant (*p* δ .05).

Convergent and Discriminant Validity. The Talent Assessment was constructed based upon a combination of the Five Factor Model of personality (McCrae & Costa, 1987; 1997) and other relevant constructs such as Emotional Intelligence (Goleman, 1995). Accordingly, the Talent Assessment measures the same broad constructs as those tapped by other personality measures. A subsample of participants from the Talent field study were administered both the Talent Assessment and the Big Five Inventory (BFI; John & Srivastava, 1999), a commonly-used measure of the FFM.

Table 9 features a pattern of convergent/discriminant correlations between these two measures. Some examples of convergent relations include: Talent Cooperation correlating highly with BFI Agreeableness (.67), Talent Creativity correlating highly with BFI Openness (.63), Talent Discipline correlating highly with BFI Conscientiousness (.77), Talent Sociability correlating highly with BFI Extraversion (.75), and Talent Stability correlating highly with BFI Neuroticism/Emotional Stability (-.75). (Note that this correlation is negative due to the fact that BFI Neuroticism is keyed in the negative emotionality direction.) Some examples of discriminant relations include the smaller correlations between Talent Discipline and BFI Extraversion and Openness, Talent Influence with BFI Agreeableness and Neuroticism/Emotional Stability, and Talent Sociability with all BFI scales with the exception of Extraversion.

Table 9
Correlations between Talent Scales and the Big Five Inventory

Scales	E	A	O	N/ES	C
Carefulness	-.19	.44	.04	-.27	<u>.49</u>
Cooperation	.23	<u>.67</u>	.27	-.48	.46
Creativity	.27	.37	<u>.63</u>	-.25	.28
Discipline	.22	.44	.18	-.37	<u>.77</u>
Goodwill	.20	<u>.63</u>	.11	-.36	.39
Influence	<u>.59</u>	.15	.41	-.26	.34
Optimism	.29	.55	.18	-.46	.53
Order	.10	.40	-.03	-.21	<u>.67</u>
Savvy	.35	.39	.38	-.28	.33
Sociability	<u>.75</u>	.32	.24	-.30	.30
Stability	.17	.31	.16	<u>-.75</u>	.38
Striving	.35	.30	.28	-.27	.52

Note. N = 326. E = Extraversion, A = Agreeableness, O = Openness, N/ES = Neuroticism/Emotional Stability, C = Conscientiousness.
Correlations ≥ .12 are significant ($p \leq .01$).
Convergent correlations are underlined.

Incremental Validity. Adding personality tests to a selection system that already includes cognitive assessments, such as WorkKeys Foundational Skills tests, can significantly improve the ability to predict job success. This is because personality tests appear to measure aspects of job behavior that are different from those measured by cognitive ability. Accordingly, research suggests that tests provide incremental validity gains over cognitive ability (18% in the case of conscientiousness). In contrast, other selection tools provide smaller gains: job knowledge tests (14%), reference checks (12%), and biodata (4%) (Schmidt & Hunter, 1998). Using both kinds of measures—WorkKeys Foundational Skills and the WorkKeys Talent Assessment—provides a better indication of whether a candidate is likely to be successful on the job.

Fakeability

Examinees may realize that the Talent Assessment is an assessment of their personality. Consequently, there may be individuals who want to present themselves in the best possible light. Some individuals might feel pressured to respond in ways they deem more socially desirable than their true inclinations. Research has shown that, in general, individuals who respond in more socially desirable ways—which may or may not reflect their true attitudes—do not affect the validity of personality tests. The ability of the test to explain or predict individual behavior in work settings is unaffected by such answers (Hogan, Barret, and Hogan, 2007; Ones & Viswesvaran, 1998; Ones, Viswesvaran, and Reiss, 1996). Similarly, socially desirable answers do not impact the predictive power of the Talent scales. In addition, the Talent Assessment was constructed to allow the identification of people who might try to manipulate the test results by responding randomly, inconsistently or by answering many items with the same response (as detailed below).

Development of a Response Patterns Indicator

When the Talent Assessment is scored, individuals with inconsistent and/or nonvaried response patterns are flagged. Response inconsistency is detected when individuals respond to items randomly and without regard to the item's content. Nonvaried responding is detected when individuals tend to use the same response option (e.g., strongly agree) for many of the items. Scores for individuals who are flagged for inconsistent and/or nonvaried response patterns should be interpreted with considerable caution. The field study conducted by ACT showed that approximately 7.3 percent of examinees were flagged for such types of responding.

Applicant Reactions

Employers are frequently concerned about applicant and employee perceptions of selection decisions and, by extension, the processes that contribute to those decisions. Research from opinion surveys of job applicants has shown that the most respondents perceive personality testing as an appropriate selection procedure. When asked to rank order their overall impression of various selection procedures from positive to negative, applicants typically respond neutrally to personality tests, ranking them in the middle, below interviews and above ability or cognitive testing (Coyne & Bartram, 2002; Rynes & Connerley, 1993).

Adverse Impact

Adverse impact results when there is unfair discrimination against members of protected classes regardless of an employer's intent. One source of evidence for adverse impact is when members of a protected class are selected at rates that are less than four-fifths (80%) of the group with the highest selection rate. For example, if ten out of ten applicants of the majority group were hired and fewer than eight out of ten applicants of a protected group were hired, there would be evidence of adverse impact. Research on personality tests has shown that these tests do not result in adverse   impact. Evidence shows only small to insignificant differences in the results between demographic groups (Hough, 1998; Schmidt & Hunter,   1998).

ACT researchers conducted analyses of the Talent Assessment scales to ensure that there are no indications of adverse impact on the basis of race/ethnicity, gender, or other demographic characteristics. Table 10 features correlations between Talent Assessment scales and several demographic characteristics using the normative sample. Although some of the correlations reached statistical significance, the majority of them were small in terms of magnitude (range = .00 to |.23|, median = |.08|). Indeed, those correlations that exceeded a magnitude of .20, such as Carefulness being correlated with age, are consistent with the literature (McCrae et al., 2000). These findings suggest that the minor differences found in Talent Assessment scale scores among members of a particular group are unlikely to result in adverse impact when used in applied settings. This is consistent with the research literature, which has found that low magnitude correlations with demographic variables do not result in adverse impact (Sackett & Wanek, 1996; Schmidt, Thoresen, Le, Ilies, & Holland, 2001).

Table 10
Talent Scale Correlations with Demographics

	Ethnicity (Cauc = 0, Min = 1)	Gender (M = 0, F =1)	Education (continuous)	Age (continuous)
Carefulness	.13	.07	.15	.23
Cooperation	.06	.19	.05	.15
Creativity	.06	-.07	.14	-.01
Discipline	.02	.15	-.04	.15
Goodwill	.00	.18	.14	.21
Influence	.11	-.17	.16	-.03
Optimism	.08	.08	.03	.12
Order	-.01	.20	-.22	-.06
Savvy	-.02	.09	.09	.07
Sociability	.02	.08	-.04	-.04
Stability	.13	-.14	.06	.06
Striving	.11	-.05	.00	-.17

Note. $N = 891$. Correlations $\geq .07$ are significant ($p \leq$ .05).

Compliance with Guidelines and Standards

The Talent Assessment is in compliance with the test development guidelines recommended by the International Testing Commission (2006), the Association of Test Publishers (2002), Society for Industrial and Organizational Psychology (2003), and the Joint Committee on Standards for Educational and Psychological Testing (consisting of the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education) (1999). These standards address "criteria for the evaluation of tests, testing practices, and the effects of test use" (p. 2) including delivery formats, administration and hardware/software requirements, and the documentation of test validity and reliability (Joint Committee on Standards for Education and Psychological Testing, 1999). The Equal Employment Opportunity Commission (EEOC) provides detailed guidelines for employment testing (EEOC, 1978). Along with many other recommendations, the EEOC advises that tests showing adverse impact should generally be avoided. However, the business necessity of a test should be demonstrated if a test does show adverse impact against any demographic groups. The Talent Assessment has been designed to meet EEOC standards. As discussed above, in field tests, the Talent Assessment was not found to have adverse impact on any racial/ethnic, gender, or age group. As with any selection procedure, employers who seek the highest level of compliance with all applicable laws should consult their legal counsel prior to adopting any assessment instrument that will be used for this purpose.

Summary

This chapter presented a brief background on the development process and psychometric properties of the Talent Assessment. As described, the Talent Assessment was developed using a multi-step, rigorous scientific process that yielded robust results. As a result, the test produces reliable findings, is predictive of a variety of workplace criteria (e.g., task and job performance, prosocial/organizational citizenship behaviors, teamwork, communication, counterproductive behaviors), and has evidenced validity estimates consistent with those in the meta-analytic literature. Also consistent with the literature, the research findings of the Talent Assessment show that the assessment does not result in adverse impact on the basis of demographic characteristics such as race/ethnicity, gender, education, or age.

4
Development and Evaluation of the Talent Assessment Indices

The Talent indices are compound personality scales that tap elements of a variety of personality traits that are predictive of particular job performance criteria. At present, the indices assess Teamwork, Work Discipline, Managerial Potential, and Customer Service Orientation. This chapter provides an overview of the general process used to develop the Talent indices, as well as a full description of the development of each index and its psychometric properties. Although a careful review of this section is not necessary to understand and use the Talent indices, it is provided for those who would like a clearer understanding of this feature of the Talent Assessment.

Introduction to Compound Scales

Due to the heterogeneous nature of their content, the indices are referred to as "compound scales." A compound scale is a combination of elements or facets of different personality traits that are all related to a single outcome.

Several examples of compound scales developed to predict various job criteria are found in the literature. For example, Hogan and Hogan (1992) formed specific occupational scales by empirically identifying and combining those facets of the Hogan Personality Inventory dimensions that were significantly related to the relevant job criteria. Mount and Barrick (1995) created "occupational scores" and "success scales" based on a weighted combination of the primary scales of the Wonderlic Personal Characteristics Inventory that were theoretically and empirically related to specific occupational and job criteria. Hough (1992) suggested using a different set of personality constructs depending on the criterion to be predicted. Similarly, Marcus, Goffin, Johnston, and Rothstein (2007) and Ones, Viswesvaran, and Dilchert (2005) argued for the predictive power of empirically derived compound scales in relation to target job criteria.

General Development Process of the Talent Indices

This section provides information on the overall development process for the Talent indices. Information specific to each index, including item content, descriptive statistics, and psychometric properties is presented in the following sections. Development of the Talent indices was based on a three-stage process:

Step One　Development of the relevant performance criteria

- Identified a theoretical model for the job performance criterion based on the literature.

- Identified supervisor rating composites based on theoretical model and rating item intercorrelations.

Step Two　Rational-empirical item selection for each Talent index

- Identified personality-performance relations based on the literature.

- Examined correlations between Talent item-level scores and supervisor rating composites.

Step Three   Examination of the psychometric properties of resulting scales based on reliability, criterion-related validity, and convergent and discriminant relations with other criteria and constructs

Development of Performance Criteria

A framework for the job criterion domain was adopted based on the literature that defines the theoretical domain of each criterion. Supervisor ratings used to assess job performance were selected based on their correspondence to the performance dimensions of the criterion framework. Selected items were correlated with one another and items that showed a low correlation or redundancy with the remaining items were dropped. A composite criterion score was derived by summing the items assigned to the criterion.

Development of Talent Indices

A rational-empirical approach was taken to select items for each of the Talent indices. The literature was reviewed in terms of the personality constructs that have been found to be highly predictive of each particular job outcome. This was followed by empirical examination in which incumbent employee responses on the 165-item Talent Assessment were correlated with the relevant performance criteria based on supervisor ratings. Items that correlated above a specified threshold with the specific criterion were retained for further examination and inclusion in the index.

Subsequent decisions to retain an item were made rationally by referring to the literature. Items were retained that measured personality constructs identified based on the literature as predictive of the specific job outcome. Items that did not have conceptual correspondence to the constructs in the literature were dropped. Finally, we examined internal consistency reliability and item-total correlations and dropped items that did not correlate well with the scale. Subsets of the norming and development groups from the Talent Assessment were used to develop the Talent indices.

Evaluation of the Talent Indices

The psychometric properties of each index were evaluated in terms of their internal consistency reliability, criterion-related validity, and construct validity. The construct validity was established by examining convergent and discriminant relations with other job criteria and with the personality constructs of the Five-Factor Model of personality (FFM; Costa & McCrae, 1992).

Reliability

The internal consistency reliabilities of the indices were evaluated using Cronbach's coefficient alpha. Alphas for the Talent indices range from .85 to .89 (median = .88), suggesting that they have good to excellent internal consistency reliability (see descriptions of each index for additional details).

Criterion-related Validity

Criterion-related validity of each index was established concurrently by correlating incumbents' index scores with supervisor ratings of their performance on the relevant criterion scales. Observed correlations between each Talent index and its targeted job criterion were then corrected for

measurement error and range restriction. Observed validities for the indices with their respective job performance criteria ranged from .24 to .37 (median = .28) and corrected validities ranged from .43 to .61 (median = .50). These validities generally are consistent with those found in the literature (see Table 15, as well as the descriptions of individual indices).

Convergent and Discriminant Validity

We examined correlations between scores on Talent indices and a range of job performance criteria (e.g., task performance, organizational citizenship behavior, counterproductive work performance, safety) and evaluated them in terms of the theoretically expected relations. Further construct validation of the Talent indices was conducted by examining relationships with the personality constructs of the FFM (see Table 16).

The Teamwork Index

The Criterion Domain of Teamwork. The literature on the domain of teamwork suggests that this performance domain is comprised of two broad categories: *task work behaviors* and *teamwork behaviors* (e.g., McIntyre & Salas, 1995; Morgan, Glickman, Woodward, Blaiwes, & Salas, 1986). Task work behaviors are those required for the accomplishment of the technical aspects of the work specific to each team. Teamwork behaviors are those that are required for effective team performance based on successful collective action. The latter are personal and interpersonal in nature and are inherent to the existence of all work teams (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Morgan, Salas, & Glickman, 1993; Taggar & Brown, 2001). As the purpose for developing a Teamwork Index was to predict *teamwork* behaviors (rather than *task work* behaviors), the literature review focused on this aspect of team performance.

Although a number of models of teamwork have been developed throughout the years (e.g., Campion, Medsker, & Higgs, 1993; Druskat & Kayes, 1999; Kozlowski & Bell, 2003; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Stevens & Campion, 1994; Van Vianen & De Dreu, 2001), a review of the literature on frameworks for teamwork behavior by Rousseau, Aube, and Savoie (2006) revealed a set of common dimensions across all of these previous frameworks. These common dimensions were Communication and Cooperation, Social Support, Helping Behavior, Back-up Behavior, Interpersonal Understanding, and Conflict Management. This conceptualization was used to develop the Talent Teamwork index (see Figure 6).

Figure 6

Conceptualization of the Teamwork Criterion
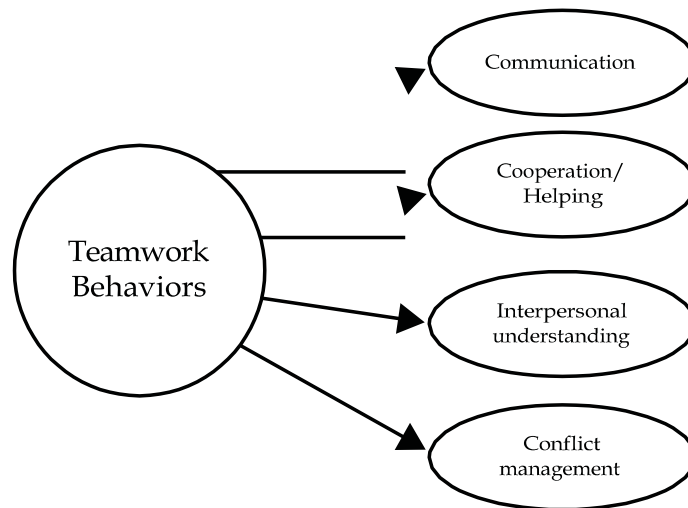
Defining the Talent Teamwork Criterion

To build the Talent teamwork index, we defined teamwork performance as the extent to which an individual will show compromise, cooperation, and interpersonal understanding when working in teams. Specifically, an employee who demonstrates high teamwork performance shows positive interactions with coworkers, is able to communicate clearly and efficiently, demonstrates compromise, cooperation, and interpersonal understanding in teams, and displays positive attitudes about work and the organization. To build the teamwork performance criterion, we selected supervisor criterion scale items to reflect these types of behaviors. This teamwork criterion scale has excellent internal consistency reliability (coefficient alpha = .92). The interrelations among supervisor items comprising the teamwork criterion scale are presented in Table 11.

Table 11

Intercorrelations of Items Comprising the Teamwork Criterion Scale

Item	1	2	3	4
1. Working in groups	-			
2. Interacting with coworkers	.82	-		
3. Empathy	.77	.76	-	
4. Positive attitudes	.73	.72	.73	-
5. Verbal communication	.65	.60	.59	.58

Note. Sample sizes range from 1,980 to 2,095.

39

Development of the Talent Teamwork Index

The Teamwork index was developed by identifying personality constructs predictive of effective teamwork performance. Next, items were selected based on their correlations with the teamwork criterion (based on a sample of 1,008 incumbent employees matched to supervisor ratings) and their relevance to the constructs identified from the literature.

Personality Predictors of Teamwork. A literature search was conducted to identify the personality characteristics that are predictive of teamwork performance. Based on the personality constructs of the FFM, a series of meta-analytic studies (Hough, 1992; Mount, Barrick, & Stewart, 1998; Peeters, Van Tuijl, Rutte, & Reymen, 2006) suggest that Agreeableness is substantially associated with team performance (p = .17 to .27), followed by Conscientiousness (p = .14 to .20), and Emotional Stability (p = .13 to .19). The literature on contextual performance with a focus on the interpersonal facilitation domain (Van Scotter & Motowidlo, 1996) also suggests that Agreeableness and Conscientiousness are associated with the interpersonal and prosocial aspects of work, which are integral to teamwork. Based on this literature, the Teamwork Talent index was expected to be substantially related to the aforementioned factors of the FFM.

Rational-Empirical Approach to Item Selection. The 165 items of the Talent Assessment were correlated with the teamwork criterion based on supervisor ratings. Items correlating higher than a specified threshold with the criterion were retained for further analyses. Then we used a rational approach to examine the content of these items in relation to the personality constructs found to be related to Teamwork in the literature. Based on this review, the following Talent scales were expected to be related to Teamwork: Carefulness, Cooperation, Goodwill, Optimism, and Stability. Thus, among the items that correlated with the criterion, those that were indicators of the aforementioned Talent scales were retained.

Psychometric Properties of the Teamwork Index

The psychometric properties of the Teamwork index were evaluated in terms of its internal consistency reliability, criterion-related validity, and convergent/discriminant validity.

Reliability. The coefficient alpha for the Teamwork index is .88, suggesting a good to excellent level of internal consistency reliability.

Criterion-related Validity. Criterion-related validity of the index was assessed by correlating the incumbents' index scores with their performance on the teamwork performance criterion scale based on supervisor ratings. The observed correlation between the Teamwork index and the teamwork performance criterion was .26. After correcting for range restriction and measurement error, the criterion-related validity was .47 (see Table 15). This is consistent with other compound scales in the literature (see Ones et al., 2005, for a review).

Convergent and Discriminant Validity. The Teamwork index was correlated with other job performance criteria and broader personality constructs to be evaluated in terms of their theoretically expected relations.

With Performance Criteria. The magnitude of observed correlations between the Teamwork index and different performance criteria based on supervisor ratings conform to expected convergent/discriminant patterns. The Teamwork index was more highly correlated with prosocial/organizational citizenship behavior (observed $r = .25$, corrected $r = .45$), than with less similar criteria, such as task performance (observed $r = .16$, corrected $r = .27$), or counterproductive work behavior (observed $r = .13$, corrected $r = .24$) (see Table 15).

With the FFM. Further validation of the Teamwork index was established by examining its relation to an independent measure of the FFM personality constructs (The Big Five Inventory; John & Srivastava, 1999). Consistent with the literature, the Teamwork index is highly associated with Agreeableness ($r = .71$), followed by Emotional Stability ($r = .57$) and Conscientiousness ($r = .52$), suggesting convergent validity of the index. Associations with Extraversion ($r = .21$) and Openness to Experience ($r = .30$) were much lower, suggesting that the index can be discriminated from these constructs (see Table 16).

The Work Discipline Index

The Criterion of Work Discipline. At the broadest level, the work performance criterion domain has been conceptualized as comprised of two distinguishable dimensions: task performance and contextual performance (Borman & Motowidlo, 1993; Motowidlo & Van Scotter, 1994). Task performance refers to executing, maintaining, or supporting the technical process specific to a job. Contextual performance refers to creating and maintaining a psychological, social, and organizational environment that promotes task and organizational performance. The components of contextual performance include showing persistence, enthusiasm, and extra effort, volunteering, following organizational rules and procedures, and defending organizational objectives.

Some other job performance constructs that have been proposed in the literature overlap with the contextual performance dimension, such as prosocial/organizational citizenship behavior (OCB). Organ (1988) originally defined OCB as discretionary behavior that was not directly recognized by the formal reward system. More recently, Organ (1997) acknowledged its resemblance to the contextual performance construct in terms of serving to promote the effective functioning of the organization.

Another facet of the job performance criterion domain is counterproductive work behavior (CWB). At its broadest, CWB can be defined as intentional behavior of an employee that goes against the legitimate interests of an organization. Bennett and Robinson (2000) define CWB as encompassing behaviors related to organizational deviance, such as theft, tardiness, or absence and interpersonal deviance, such as sexual harassment or verbal abuse. Research indicates that when performance is assessed based on supervisor ratings, CWB is highly associated with OCB, with the magnitude of correlations ranging between .57 and .59, (e.g., Campbell, 1990; Hunt, 1996).

Sackett (2002) suggested conceptualizing overall performance as a combination of three primary domains: task performance, contextual

performance, and counterproductive behavior. We followed this conceptualization in the development of a Work Discipline index (see Figure 7).

Conceptualization of the Work Discipline Criterion
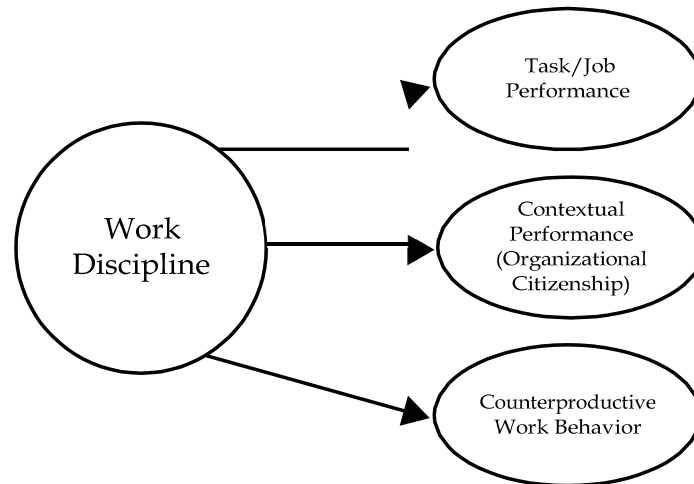
Defining the Talent Work Discipline Criterion

To build the Talent Work Discipline index, we define work discipline as the extent to which an individual will show dependability, as well as a disciplined and positive attitude toward the job, rules and regulations, and the work environment. Based on the literature, this definition relates to all three domains of task performance, contextual performance, and CWB. We created a work discipline performance criterion composite reflecting these domains to measure work discipline. This composite included 13 supervisor rating items and had an excellent internal consistency reliability (coefficient alpha = .90). The interrelations between the component ratings are presented in Table 12.

Table 12

Intercorrelations of the Work Discipline Criterion Composite Items

Item	1	2	3	4	5	6	7	8	9	10	11	12
1. Job Knowledge	-											
2. Meets Deadlines	.59	-										
3. Productivity	.63	.76	-									
4. Quality	.65	.77	.77	-								
5. Positive Attitude	.46	.54	.55	.55	-							
6. Compliance	.43	.56	.51	.55	.69	-						
7. Time Theft	.27	.43	.42	.40	.44	.40	-					
8. Organizational Theft	.14	.20	.17	.19	.17	.22	.35	-				
9. Aggression	.12	.23	.19	.20	.38	.40	.33	.26	-			
10. Dishonesty	.21	.36	.31	.35	.37	.41	.50	.33	.46	-		
11. Discriminatory Behavior	.08	.16	.11	.13	.26	.27	.31	.26	.44	.40	-	
12. Overall Performance	.64	.64	.70	.70	.54	.52	.37	.16	.20	.33	.10	-
13. Overall Employee Rating	.64	.64	.70	.69	.61	.58	.42	.17	.28	.39	.19	.81

Note. Sample sizes range from 1,980 to 2,095.

Development of the Talent Work Discipline Index

The personality constructs that would be predictive of high levels of work discipline were first identified through a review of the literature. Empirical data analyses using a sample of 1,008 incumbent employees matched to supervisor ratings followed, and the index was developed by comparing empirical findings to the literature.

Personality Predictors of Work Discipline. The correlates of Work Discipline can be understood by looking at the personality correlates of each of the performance domains that are subsumed under the construct of work discipline.

Task Performance. The predictive power of personality for technical aspects of a task is less than its predictive power for non-technical aspects; nevertheless, Conscientiousness has been found to be a consistent predictor of task performance across a wide variety of jobs. Meta-analytic findings suggest that Conscientiousness predicts task performance and job proficiency across a wide variety of occupations, with estimated correlations ranging between .16 and .23 (e.g., Barrick & Mount, 1991; Van Scotter & Motowidlo, 1996). Motowidlo, Borman, and Schmit (1997) suggested that, although Conscientiousness is associated more strongly with contextual performance, it is also important for task performance through its effects on task habits and goal setting.

Contextual Performance/Organizational Citizenship Behavior. Personality has been found to be more strongly associated with contextual performance. Studies typically suggest that Conscientiousness, Agreeableness, and Emotional Stability are positively associated with all aspects of OCB (range r = .09 to .31; Organ & Ryan, 1995; LePine & Van Dyne, 2001; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996).

Counterproductive Work Behavior. A meta-analytic review of the personality correlates of interpersonal and organizational deviance suggests that Conscientiousness, Agreeableness, and Emotional Stability are the best predictors of counterproductive work behavior (range p = .21 to .46; Berry, Ones, & Sackett, 2007). In military settings, facets of Conscientiousness showed significant associations with maintaining personal discipline, with correlations ranging between .18 and .30 (McHenry, Hough, Toquam, Hanson, & Ashworth, 1990).

Thus, based on the aforementioned literature, the Work Discipline index was expected to relate to Conscientiousness, Agreeableness, and, to a lesser extent, Emotional Stability.

Rational-Empirical Approach to Item Selection. The 165 items of the Talent Assessment were correlated with supervisor ratings on the Work Discipline criterion composite. All items that correlated above a specified threshold with this criterion were retained for further consideration. Then we used a rational approach to examine the content of the items in relation to the personality constructs found to be related to Work Discipline in the literature. Based on this review, the following Talent scales were most strongly related: Carefulness, Discipline, Order, and Stability. Among the items that correlated with the criterion, those that were indicators of these Talent scales were retained.

Psychometric Properties of the Work Discipline Index

The psychometric properties of the Work Discipline index were evaluated in terms of its internal consistency reliability, criterion-related validity, and convergent/discriminant validity.

Reliability. The coefficient alpha for the Work Discipline index is .89, suggesting good to excellent internal consistency reliability.

Criterion-related Validity. Criterion-related validity of the index was assessed concurrently by correlating the incumbents' index scores with their performance on the criterion scale based on supervisor ratings. The observed correlation between the Work Discipline index and the work discipline criterion was .24. After correcting for range restriction and measurement error, the criterion-related validity was .43. The index was also correlated with a composite of supervisor ratings on a broader criterion set that included safety behavior (see "overall supervisor" row in Table 15). This yielded an observed validity of .23 and a corrected validity of .41 (see Table 15).

Convergent and Discriminant Validity. The Work Discipline index was correlated with other job performance criteria and broader personality constructs to be evaluated in terms of their theoretically expected relations.

With Performance Criteria. The Work Discipline index was correlated with each of the job performance criteria that formed the criterion scale (i.e., task performance, prosocial/organizational citizenship behavior, and counterproductive work behavior) and also with safety performance and overall performance. As expected, the index shows associations of about equal magnitude across task performance, prosocial, and overall performance, with observed validities ranging between .20 and .23, and corrected validities ranging between .35 and .41. The magnitude of association with counterproductive work behavior and safety was somewhat lower (observed validities = .13 to .14; corrected validities = .24 to .26; see Table 15).

With the FFM. Further construct validation of the Work Discipline index was established by examining its relation to an independent measure of the FFM personality constructs (the BFI; John & Srivastava, 1999). As expected, the Work Discipline index is most strongly associated with Conscientiousness ($r = .75$), followed by Agreeableness ($r = .56$) and Emotional Stability ($r = .43$). Associations with Extraversion ($r = .25$) and Openness to Experience ($r = .22$) were lower (see Table 16).

The Managerial Potential Index

The Criterion Domain of Managerial Potential. Scullen and his colleagues (Scullen, Mount, & Judge, 2003) provided construct validity evidence for a taxonomy of managerial performance. They found evidence for two higher order factors (Task Performance and Contextual Performance) and four lower order factors (Technical Skills, Administrative Skills, Human Skills, and Citizenship Behaviors). The two higher order factors follow Borman and Motowidlo's (1993, 1997) conceptualization of job performance. Task Performance is defined as the manager's level of effectiveness when performing the organization's core technical activities. Contextual Performance is defined as organizational, social, and psychological environments that impact the organization's effectiveness.

Each higher order factor can be broken down into lower order factors. For example, Technical Skills and Administrative Skills are related to Task Performance. These factors encompass managerial proficiencies related to the methods and processes of a job's specific function as well as a broader understanding of the organizational system in which the manager works. Human Skills and Citizenship Behaviors comprise Contextual Performance. These factors focus on the manager's ability to work with people to accomplish organizational goals. Some examples of citizenship behaviors include assisting and supporting colleagues, demonstrating organizational commitment and loyalty, and having persistence and dedication to one's job. See Figure 8 for the conceptual model of higher and lower order factors of managerial performance (adapted from Scullen et al., 2003).

Figure 8
Conceptualization of the Managerial Potential Criterion
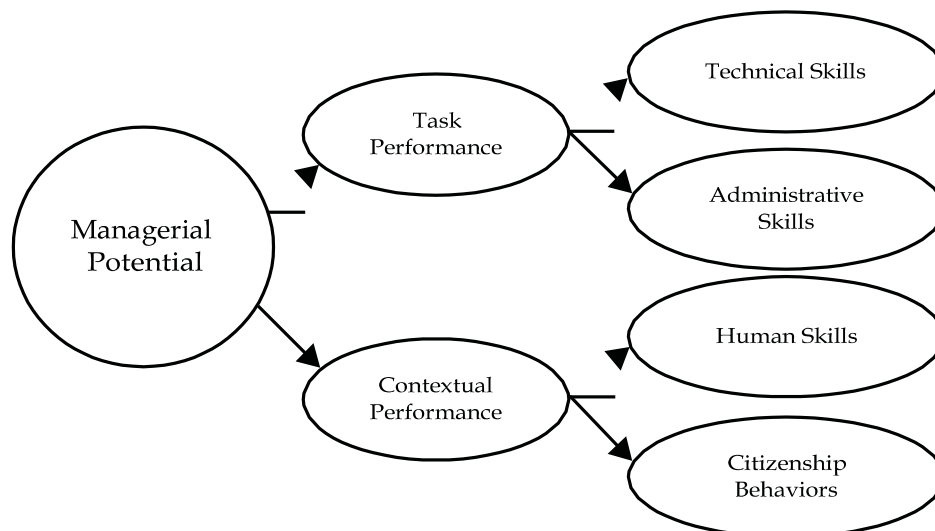
Defining the Talent Managerial Performance Criterion

To build the Talent Managerial performance criterion, we defined managerial performance as showing a high level of work performance in supervisory/managerial roles. Specifically, an employee who demonstrates high Managerial performance has a high level of the knowledge, skills, and abilities required by the job, displays a high level of performance, shows excellent communication skills and positive interactions with coworkers and clients, has leadership abilities, is a good team player, and tends to take initiative.

The criterion composite that assesses Managerial performance is a composite of a range of supervisor rating scale questions that tap into technical, administrative, human skills, and citizenship behaviors, such as job knowledge, problem solving/creativity, verbal and written communication, leadership, interaction with coworkers and clients, and so on. Supervisor items representing the construct of managerial performance were aggregated into a criterion scale that resulted in excellent internal consistency reliability (coefficient alpha = .92). The interrelations between supervisor items comprising this criterion are shown in Table 13.

Table 13

Intercorrelations of the Managerial Potential Criterion Scale Items

Item	1	2	3	4	5	6	7
1. Job Knowledge	-						
2. Quality	.65	-					
3. Extra Effort	.51	.55	-				
4. Problem Solving	.73	.65	.58	-			
5. Verbal Communication	.56	.58	.52	.61	-		
6. Written Communication	.55	.59	.47	.59	.76	-	
7. Leadership	.64	.57	.61	.70	.62	.57	-
8. Overall Performance	.64	.70	.56	.65	.57	.54	.61

Note. Sample sizes range from 1,980 to 2,095.

Development of the Talent Managerial Potential Index

The Managerial Potential index was developed by identifying the personality constructs that would be predictive of managerial success from the literature. Then, we identified a pool of managers representing 107 occupations with managerial responsibilities (including management of time, material resources, or personnel resources) based on the skills documented by O*NET (U.S. Department of Labor). Sample occupations include executives, financial managers and treasurers, construction managers, education administrators, food service managers, captains and pilots, producers and directors, and first-line managers. Next, items were selected based on their correlations with the managerial performance criterion (based on a sample of 166 incumbent managers matched to supervisor ratings) and their relevance to the constructs identified from the literature.

Personality Predictors of Managerial Success. A literature search was conducted to identify the personality characteristics that have been shown to be predictive of managerial success. Meta-analytic studies (e.g., Barrick & Mount, 1991; Hough, 1992) suggest that of the FFM, Extraversion, Conscientiousness, and Emotional Stability show the largest associations with effective managerial performance (average true-score correlations = .11 to .21). Further, Conn and Rieke (1994) used the 16 PF to profile managers. The profile showed the following characteristics were associated with successful managers: warmth, social boldness, being outgoing, participative, emotionally stable, flexible, and high on reasoning. These findings suggest Extraversion, Openness to Experience, and Emotional Stability as more typical of managers.

Although Agreeableness has not been found to be a consistent predictor of managerial effectiveness, Borman and Motowidlo (1993) point out that, together with Extraversion and Conscientiousness, it is a significant predictor of contextual performance in managerial roles, as it fosters positive work relations, interactions with subordinates, and public relations. Thus, it appears that all personality factors of the FFM have moderate to substantial associations with managerial success.

Rational-Empirical Approach to Item Selection. The 165 items of the Talent Assessment were correlated with supervisor ratings on the Managerial performance composite using a pool of incumbent managers from occupations with managerial responsibilities (as defined above). All items that correlated above a specified threshold with this criterion were retained for further consideration. Then we used a rational approach to examine the content of the items in relation to the personality constructs found to be related to Managerial Success in the literature. Based on this review, the following Talent scales were related: Cooperation, Discipline, Influence, Optimism, and Savvy. Among the items that correlated with the criterion, those that were indicators of the aforementioned Talent scales were retained.

Psychometric Properties of the Managerial Potential Index

The psychometric properties of the Managerial Potential index were evaluated in terms of its internal consistency reliability, criterion-related validity, and convergent/discriminant validity.

Reliability. The coefficient alpha of the Managerial Potential index was .85, suggesting a good level of internal consistency reliability.

Criterion-related Validity. Criterion-related validity of the index was assessed concurrently by correlating the incumbents' index scores with their performance on the criterion scale based on supervisor ratings. The observed correlation between the Managerial Potential index and the managerial performance criterion was .37. After correcting for range restriction and measurement error, the criterion-related validity was estimated to be .61 (see Table 15).

Convergent and Discriminant Validity. The Managerial Potential index was correlated with other job performance criteria and broader personality constructs from the FFM and evaluated in terms of the theoretically expected relations.

With Performance Criteria. The Managerial Potential index significantly correlated with supervisor performance ratings across many different criteria. Consistent with the literature, it correlated both with Task Performance (observed $r = .32$, corrected $r = .52$) and Prosocial/Organizational Citizenship (i.e., contextual performance) (observed $r = .33$, corrected $r = .56$). The index also correlated with an overall job performance criterion (observed $r = .32$, corrected $r = .55$) (see Table 15).

With the FFM. Further construct validation of the Managerial Potential index was established by examining its relation to an independent measure of the FFM personality constructs (the BFI; John & Srivastava, 1999). Consistent with the literature, the Managerial Potential index has moderate to strong relations with all Big Five factors. The strongest associations were observed with Conscientiousness ($r = .64$) and Agreeableness ($r = .57$), followed by Emotional Stability ($r = .55$), Openness to Experience ($r = .34$), and Extraversion $r = .28$) (see Table 16).

The Customer Service Orientation Index

The Criterion Domain of Customer Service. Based on the job performance domain literature, customer service is typically considered part of contextual performance (Borman & Motowidlo, 1993, 1997). Specifically, it is seen as a form of prosocial organizational behavior directed toward affecting service quality that is independent of cognitive abilities (Frei & McDaniel, 1998; Ones & Viswesvaran, 2001; Ryan & Ployhart, 2003). Over the past 20 years, theoretical and empirical studies have identified several factors of customer service behavior (CSB). Below we present a brief list of some of the models advanced.

Parasuraman and colleagues (1985, 1988) reported ten determinants of service quality important to CSB (tangibles, reliability, responsiveness, competence, access, courtesy, communication, credibility, security, and understand/knowing) that were later synthesized to five fundamental elements: tangibles, reliability, responsiveness, assurance, and empathy. In a separate articulation of customer service, Hogan and colleagues (1984) noted that essential elements of customer service include treating customers with courtesy, consideration, and tact, being aware of customers needs, as well as having good communication skills. Another model advanced by Frei and McDaniel (1998), noted friendliness, reliability, responsiveness, and courteousness as the four basic elements for customer service. Other models have emphasized initiative, organizational commitment, and participative leadership (Rank et al., 2007).

After careful examination and integration of the literature described above, the criterion for customer service performance was conceptualized as composed of four important elements: Courtesy, Communication, Reliability, and Responsiveness (see Figure 9). Courtesy includes being respectful, polite, friendly, and patient while interacting with customers. Communication is defined as conveying information clearly, effectively, and appropriately to customers. Reliability involves having a trusting and dependable relationship between customers and customer service professionals. And responsiveness is defined as being willing to understand what customers may be feeling or thinking and helping customers in a timely manner with problems that may arise.

Figure 9

Conceptualization of the Customer Service Orientation Criterion
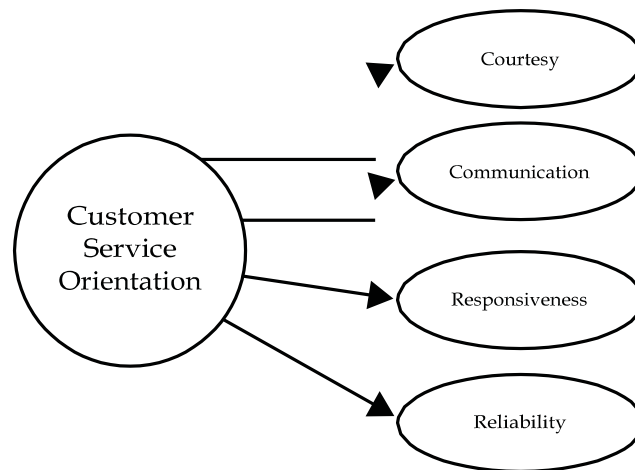
Defining the Talent Customer Service Performance Criterion

To build the Talent Customer Service performance criterion, we defined customer service as showing a high level of attentiveness, courtesy, and helpfulness in providing service to customers. Specifically, an employee who demonstrates high customer service performance has positive interactions with customers, is able to communicate clearly and efficiently, builds a positive relationship with customers, resolves customer issues, and displays positive attitudes during interactions with customers. We selected supervisor criterion items that reflect these types of behaviors and formed a composite, which had excellent internal consistency reliability (coefficient alpha = .91). The interrelations among supervisor items comprising the customer service performance criterion scale are presented in Table 14.

Table 14
Intercorrelations of Items Comprising the Customer Service Criterion Scale

Item	1	2	3	4	5
1. Verbal Communication	-				
2. Empathy	.59	-			
3. Positive Attitude	.58	.73	-		
4. Customer Relationship	.64	.69	.66	-	
5. Customer Issues	.63	.58	.53	.71	-

Note. Sample sizes range from 397 to 2,095.

Development of the Talent Customer Service Orientation Index

The Customer Service Orientation index was developed by identifying personality constructs predictive of effective customer service performance from the literature. Then we identified a pool of customer service employees representing 189 occupations with customer service responsibilities (including active listening, speaking, social perceptiveness, and service orientation) based on the skills documented by O*NET (U.S. Dept. of Labor). Sample occupations include customer service representatives, personal financial advisors, mental health counselors and social workers, secondary and postsecondary teachers, food servers, and funeral attendants. Items were selected based on their correlations with the customer service orientation criterion (based on a sample of 286 incumbent customer service employees matched to supervisor ratings) and their relevance to the constructs identified from the literature.

Personality Predictors of Customer Service. A literature search was conducted to identify the personality characteristics found to be predictive of customer service performance. Based on the personality constructs of the FFM, meta-analytic studies along with other single studies (e.g., Brown, Mowen, Donavan, & Licata, 2002; Frei & McDaniel, 1998; Hurtz & Donovan, 2000; Mount, Barrick, & Stewart, 1998; Ones & Viswesvaran, 2001; Timmerman, 2004) have consistently found that Agreeableness, Conscientiousness, and Emotional Stability are substantially associated with customer service performance. Due to the variety and complexity of customer service occupations, some studies (e.g., Hurley, 1998; Hurtz & Donovan, 2000; Liao & Chuang, 2004; Periatt, Chakrabarty, & Lemay, 2007) suggest that Extraversion and Openness to Experience may also be correlates of customer service performance. Additionally, customer service and teamwork tend to overlap when it comes to personality (Ryan & Ployhart, 2003; Mount et al., 1998). Based on this literature, the Talent Customer Service Orientation index was expected to be substantially related to several factors of the FFM, particularly Agreeableness, Conscientiousness, and Emotional Stability.

Rational-Empirical Approach to Item Selection. The 165 items of the Talent Assessment were correlated with supervisor ratings on the Customer Service performance criterion composite using a pool of incumbent employees from occupations with customer service responsibilities (as defined above). Items correlating higher than a specified threshold with the criterion were retained for further analyses. Then we used a rational approach to examine the content of the items in relation to the personality constructs found to be related to customer service in the literature. Based on the review, the following Talent scales were related customer service: Cooperation, Creativity, Optimism, Stability, and Striving. Thus, among the items that correlated with the criterion, those that were indicators of the aforementioned Talent scales were retained.

Psychometric Properties of the Customer Service Orientation Index

The psychometric properties of the Customer Service Orientation index are evaluated in terms of its internal consistency reliability, criterion-related validity, and convergent and discriminant validity.

Reliability. The coefficient alpha for the Customer Service Orientation index is .87, suggesting a good level of internal consistency reliability.

Criterion-related Validity. Criterion-related validity of the index was established by correlating the incumbents' index scores with their performance on the criterion scale based on supervisor ratings. The observed correlation between the Customer Service Orientation index and the Customer Service performance criterion was .30. After correcting for range restriction and measurement error, the criterion-related validity was .53 (see Table 15). This is consistent with most of the validities found in the literature (Frei & McDaniel, 1998; Ones & Viswesvaran, 2001; Ryan & Ployhart, 2003).

Convergent and Discriminant Validity. The Customer Service Orientation index was correlated with other job performance criteria and broader personality constructs to be evaluated in terms of its theoretically expected relations.

With Performance Criteria. The magnitude of observed correlations between the Customer Service Orientation index and different performance criteria based on supervisor ratings conform to expected convergent/discriminant patterns. The Customer Service Orientation index was more highly correlated with prosocial/organizational citizenship behavior (observed $r = .29$, corrected $r = .50$) and task performance (observed $r = .27$, corrected $r = .45$), than with less similar criteria, such as safety performance (observed $r = .16$, corrected $r = .28$), or counterproductive work behavior (observed $r = .09$, corrected $r = .17$) (see Table 15)

With the FFM. Further construct validation of the Customer Service Orientation index was established by examining its relation to an independent measure of the FFM personality constructs (the BFI; John & Srivastava, 1999). Consistent with the literature (e.g., Hurtz & Donovan, 2000), the Customer Service Orientation index is highly associated with Agreeableness ($r = .64$) and Conscientiousness ($r = .62$), followed by Emotional Stability ($r = .47$), Openness to Experience ($r = .43$), and Extraversion ($r = .33$) (see Table 16).

Summary

This chapter presented background on the development process and psychometric properties for the Talent indices. The indices were developed using a multistep, rigorous process. The resulting indices show high internal consistency reliability, appropriate convergent/discriminant patterns with other personality constructs (e.g., FFM), and have high predictive validities consistent with those in the meta-analytic literature. Taken together, the findings above provide evidence supporting the construct validity of the Talent indices.

Table 15
Validity Correlations for Talent Indices

Job Performance Criteria	Teamwork				Work Discipline				Managerial Potential				Customer Service Orientation			
		Operational Validity				Operational Validity				Operational Validity				Operational Validity		
	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR	Obs r	cME	DRR	IRR
Task	.16	.21	.25	.27	.21	.28	.33	.36	.32	.41	.48	.52	.27	.35	.41	.45
Prosocial	.25	.35	.41	.45	.20	.27	.32	.35	.33	.45	.53	.56	.29	.40	.47	.50
Counterproductive	.13	.18	.22	.24	.14	.20	.24	.26	.18	.26	.31	.34	.09	.12	.15	.17
Safety	.13	.17	.21	.23	.13	.18	.22	.24	.10	.14	.17	.19	.16	.21	.26	.28
Overall Supervisor Ratings	.22	.31	.36	.40	.23	.32	.38	.41	.32	.44	.52	.55	.28	.39	.46	.50
Teamwork	.26	.37	.43	_.47_	.20	.28	.34	.37	.36	.51	.59	.62	.29	.41	.48	.52
Work Discipline	.20	.28	.33	.36	.24	.33	.40	_.43_	.31	.43	.50	.54	.28	.39	.46	.49
Managerial	.18	.24	.29	.32	.20	.27	.32	.35	.37	.49	.57	_.61_	.31	.41	.49	.52
Customer service	.26	.37	.43	.47	.23	.33	.39	.42	.38	.54	.61	.65	.30	.42	.50	_.53_

Note. $N = 1,008$. Obs r = observed correlation, cME = correlation corrected for measurement error in the criterion, DRR = direct range restriction corrections, IRR = indirect range restriction corrections. Correlations ≥ .06 are significant (p ≤ .05). Key validity correlations are highlighted in bold and underlined.

Table 16

Associations between the Talent Indices and the Five Factor Model of Personality

| BFI scales | Talent Indices | | | |
	Teamwork	Work Discipline	Managerial Potential	Customer Service
Conscientiousness	.52	.75	.64	.62
Agreeableness	.71	.56	.57	.64
Emotional Stability	.57	.43	.55	.47
Extraversion	.21	.25	.28	.33
Openness	.30	.22	.34	.43

Note. $N = 316$. Correlations $\geq .10$ are significant ($p \leq .05$).

5
Interpreting Employer, Examinee, and List Reports

The WorkKeys Talent Assessment is a selection and employee development tool that measures a range of personality characteristics relevant to workplace behaviors and attitudes. Three reports are available: an Employer Report, an Examinee Report, and a List Report. The features of each of the reports are described below.

- *Employer Report.* The Employer Report provides detailed information on an examinee. For each individual who completes the Talent Assessment, the employer is provided with a report which includes scores on each of the twelve Talent scales. Score reports include a graphical representation of the respondent's scores on each Talent scale, as well as interpretive information about what each scale score means.

- *Examinee Report.* The Examinee Report provides similar information to that found in the Employer Report. Minor wording differences in this report reflect the fact that it is intended for an examinee.

- *List Report.* The List Report catalogs all applicants who have been assessed during a given time period. This report includes the examinee name, partial identification number associated with each person tested, the primary occupation for the examinee, and the date each person was tested. Further, as part of the customized benchmarking option, organizations can obtain a List Report that provides information about examinees' benchmark scores.

Employer Reports

The Employer Reports should reflect the appropriate test name (upper left-hand corner). As seen in Figure 10, the following identifiers appear at the top of the page:

- *Report for:* Your company name
- *Site:* Your company location or division (if company has multiple sites)
- *Test Date:* Date the particular test was completed
- *Examinee:* The name of the test taker
- *Examinee ID:* Last 4 digits of the unique identifier for each examinee

Figure 10
Employer Report: WorkKeys Talent Assessment Profile
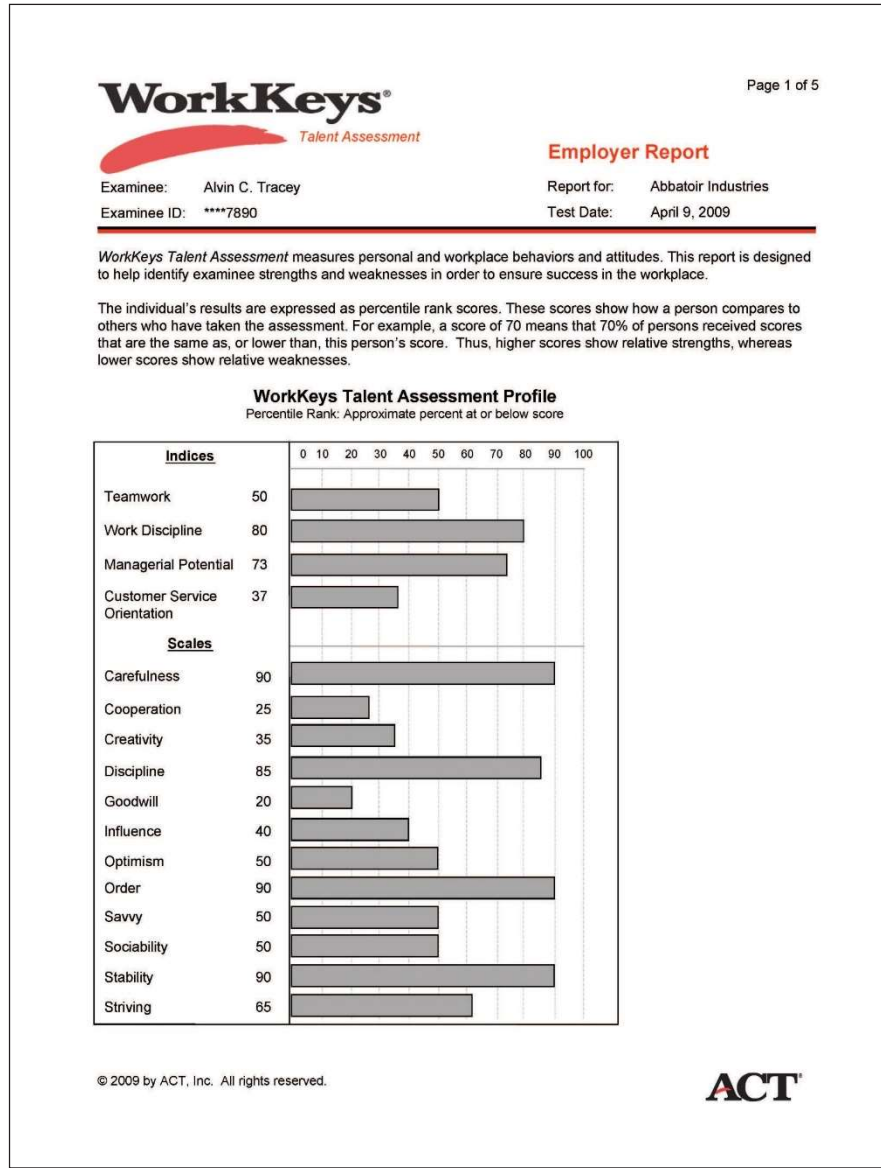
Below the identifier information is the WorkKeys Talent Assessment profile, which shows the percentile rank scores (percentiles) of the examinee. A percentile is a score that indicates the rank of the examinee compared to others, using a hypothetical group of 100 examinees. A percentile of 25, for example, indicates that the examinee's test performance equals or exceeds 25 out of 100 examinees on the same measure; a percentile of 87 indicates that the examinee equals or surpasses 87 out of 100 (or 87% of) examinees. Note that this is not the same as a "percent," that is to say a percentile of 87 does not mean that the examinee answered 87% of the questions "right." Percentiles are derived from raw scores using the norms obtained from the field study sample when the test was developed.

There are 4 indices (Teamwork, Work Discipline, Managerial Potential, and Customer Service Orientation) and 12 scales (Carefulness, Cooperation, Creativity, Discipline, Goodwill, Influence, Optimism, Order, Savvy, Sociability, Stability, and Striving). The profile features percentile rank

57

scores for each of the scales, ranging from 1 to 99. Higher scores reflect greater levels of the characteristics being measured. For instance, in Figure 10, the candidate score on the Carefulness scale was at or above that of 90% of the norm group (as discussed in Chapter 3).

Based on the examinee's scale scores, the Talent Assessment profile also provides interpretive statements for both the Talent indices and the Talent scales. (See Figures 11 and 12 for example interpretive statements such as the ones found under "Capitalize on Individual Strengths.") These interpretive statements may assist with an examinee's development plan and/or job placement. (See "Using Talent Assessment for Training and Development Purposes" later in this chapter for more   information.)

Figure 11
Employer Report: Interpretive Statements

WorkKeys®

Talent Assessment

Page 2 of 5

Employer Report

Examinee: Alvin C. Tracey
Examinee ID: ****7890

Report for: Abbatoir Industries
Test Date: April 9, 2009

Talent Indices

The Talent indices are compound personality scales that combine elements of several personality characteristics predictive of success across broad job outcomes, such as managerial potential or teamwork.

Percentile	Talent Indices Definitions
80	**Work Discipline: The extent to which an individual will show dependability, as well as a disciplined and positive attitude toward the job, rules and regulations, and the work environment.** This examinee's responses suggest that he or she is likely to show a high level of dependability, productivity, and a disciplined attitude toward the job (e.g., nearly always meeting deadlines, completing work accurately, complying with rules and regulations). Individuals at this score level are likely to be highly reliable, consistently put forth extra effort, and project a positive attitude about the work and the organization on a regular basis.
73	**Managerial Potential: The potential that an individual will show a high level of work performance in supervisory/managerial roles.** This examinee's responses suggest that he or she has the potential to perform adequately in supervisory/managerial roles. Individuals at this score level are likely to have adequate communication skills and a positive attitude about the work and the organization. They are likely to be somewhat assertive and persuasive in their interactions, solve straightforward problems, and put forth a reasonable amount of effort.
50	**Teamwork: The extent that an individual will show compromise, cooperation, and interpersonal understanding when working in teams.** This examinee's responses suggest that he or she is likely to work fairly well with others and/or as part of a team. Individuals at this score level are likely to be reasonably pleasant, helpful, respectful, and willing to compromise; have adequate communication skills (e.g., professional tone, clarity); and usually maintain a positive attitude about the work, coworkers, and the organization.
37	**Customer Service Orientation: The potential that an individual will show a high level of attentiveness, courtesy, and helpful service to customers.** This examinee's responses suggest that he or she has the potential to perform adequately in customer service roles. Individuals who respond at this score level are likely to provide acceptable service to customers and clients by communicating in a professional and appropriate manner, and by generally helping customers with their problems and concerns.

ACT

Figure 12
Employer Report: Interpretive Statements (continued)

WorkKeys®
Talent Assessment

Page 3 of 5

Employer Report

Examinee:	Alvin C. Tracey
Examinee ID:	****7890

Report for:	Abbatoir Industries
Test Date:	April 9, 2009

Capitalize on Individual Strengths

Percentile Scale Definitions

90

Carefulness: Tendency to think and plan carefully before acting.

This individual's responses suggest that he or she is cautious, deliberate, and pays close attention to detail in the workplace. Responders at this score level tend to think carefully before acting or speaking. They always consider the consequences of their actions, and their decisions are usually well thought-out.

90

Order: Tendency to be neat and well organized.

The examinee's responses suggest that he or she is well-organized, and consistently keeps physical surroundings neat and tidy. Individuals who respond at this score level are always methodical in their manner and maintain a structured professional environment.

90

Stability: Tendency to maintain composure and rationality in situations of actual or perceived stress.

This individual's responses suggest that he or she maintains his or her composure even when faced with highly stressful situations. Individuals who respond at this score level tend to remain calm and even-tempered in their conduct, and they feel confident in their ability to handle the pressure and stress of working under deadlines.

85

Discipline: Tendency to be responsible, dependable, and follow through with tasks without becoming distracted or bored.

The examinee's responses suggest that he or she commits to work duties until they are complete. Individuals who respond at this score level take responsibility and can always be relied upon to get their work done on time. They are not easily distracted, and always persist through challenges until the task is done.

Continue to Cultivate Individual Skills

Percentile Scale Definitions

65

Striving: Tendency to have high aspiration levels and work hard to achieve goals.

This examinee's responses suggest that he or she is generally driven and ambitious. Others who respond at this score level tend to strive for competence in their work, although they may not consistently work hard to achieve their desired results. They have a good sense of direction in life and at work, and are usually motivated to achieve their goals.

ACT

Following the interpretive statements are the occupations specified by the examinee (see Figure 13). The examinee can specify up to five occupations. The first occupation selected by the examinee, shown in bold on the report, is referred to as the *primary occupation*. (If the examinee is a job applicant, the primary occupation will typically represent the job for which the examinee has applied.) Any non-primary occupations are listed in ascending O*NET code order. Each occupation title is listed with its unique O*NET occupation code.

Figure 13
Employer Report: Occupations Specified by the Examinee

Exceptions

Some individuals may respond to the items without careful consideration of the content, without reading them, or in a deliberate attempt to manipulate the outcome of the test. As a result, the responses may be inconsistent. For instance, because some of the items are evaluated in such a way that low scores reflect positive answers (i.e., reverse keyed), an individual who responds by selecting the same response (e.g., "strongly disagree") to a large portion of items will trigger a warning. In the event that an individual responds to the items regardless of content, the system will flag the Employer Report with an exclamation mark (see Figure 14). The report will also include a message warning that the responses require caution during interpretation by the employer. If an examinee is flagged, it is up to the employer to decide how to proceed. Depending on the situation, an employer may wish to re-administer the Talent Assessment after talking with the examinee. In such a case, it may be useful to emphasize to examinees the importance of paying attention to the questions and being forthcoming and honest in their responses.

Figure 14
Employer Report: Exception Condition
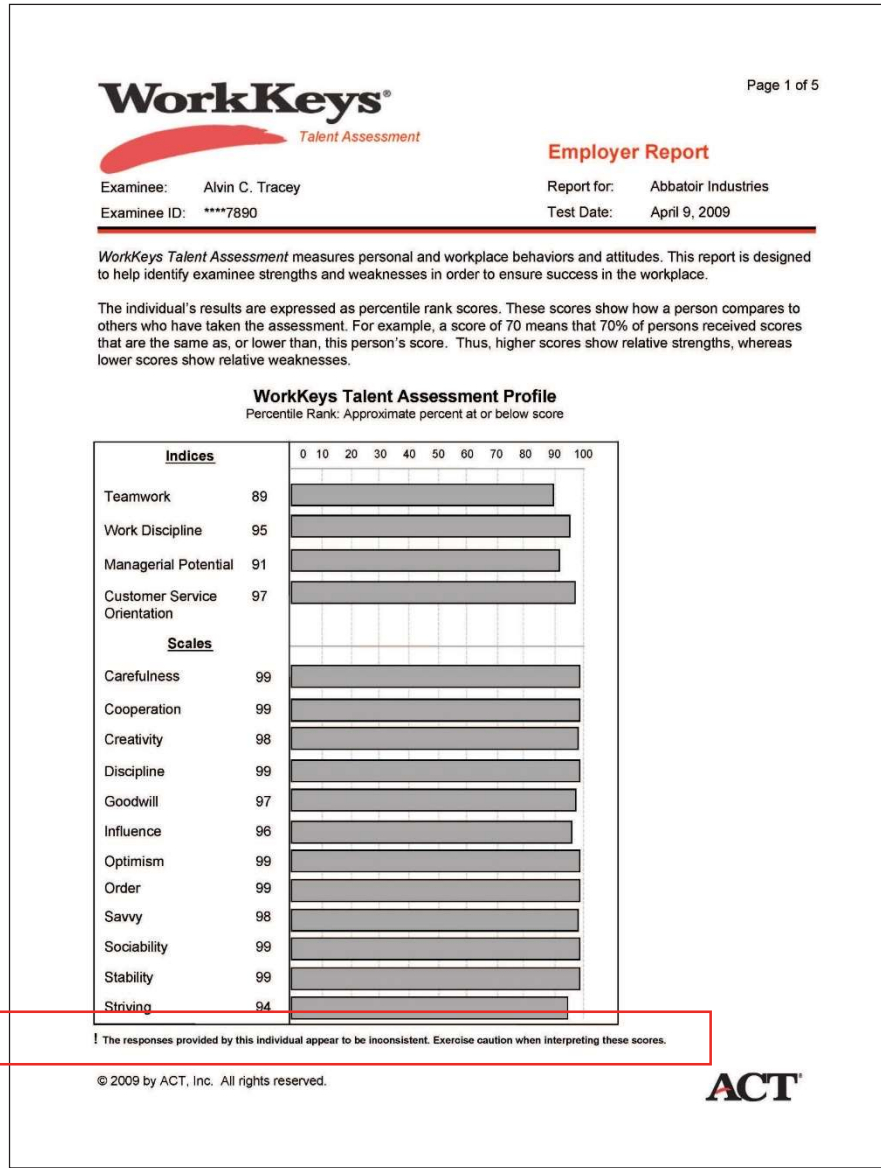
Examinee Reports

The Examinee Report is very similar to the Employer Report. Minor differences in wording are used throughout the report to tailor the results to the examinee. For example, the interpretive sections of the Examinee Report feature statements that help the examinee to place his or her scores in context. Specifically, the higher scores section is introduced by the following language: These are your areas of strength as measured by this assessment. The moderate scores section is introduced as: These are areas in which your skills could benefit from additional development. And the lower scores section is introduced as: These are areas that you will definitely need to develop further in order to improve your skills.

As with the Employer Report, some individuals may respond to the items without careful consideration of the content, without reading them, or in a deliberate attempt to manipulate the outcome of the test. The responses generated may be inconsistent as a result. If this is the case, the examinee will see his or her results "flagged" with an exclamation point and the explanation: "The responses provided by this individual appear to be inconsistent. Exercise caution when interpreting these scores."

List Reports

The Validus™ system (see Chapter 6) produces a List Report for all persons who have taken the WorkKeys Talent Assessment for the company during a specified period of time. The List Report includes identifier details for the company including:

- *Report for:* Name of the company
- *Site:* Location or division of the company (if company has multiple sites)
- *Report Date:* When the report was generated

The List Report also includes information on filters applied to the results, as well as the sort order of results:

- *Date Range:* Results filtered by date range of assessment administration
- *Occupation Code:* Results filtered by occupation code within the company, if applicable
- *Sort by:* Results sorted in a specified order

The List Report details the examinee's name, the last four digits of a unique identification number, the primary occupation code (the O*NET number for the first occupation that the examinee selected), and the date the assessment was completed.

List Reports can be generated through sorting functions built into the system. For example, the list may be sorted by last name (see Figure 15).

Figure 15
List Report: Sorted Alphabetically

List Reports can also be generated through filtering functions in the system. Filters may be used to narrow down the larger pool of examinees based on specific criteria. For instance, the employer can choose to filter by a specific occupation code or by the range of dates that individuals completed the Talent Assessment (see Figure 16).

When occupation code is selected as the filter criteria, all of the occupation codes selected by the examinee are scanned for any appearance of that code, and individuals with the specified code are featured in the List Report. Although the report still lists the primary occupation code in its own column, the individuals featured on the List Report have selected the filtered occupation code as one of their 5 selected occupations. The filtered occupation code is specified at the top of the report.

When an occupation code filter is not applied, the filter criterion is specified as "all" (as shown for occupation code in Figure 15).

Figure 16
List Report: Using Occupation Filter
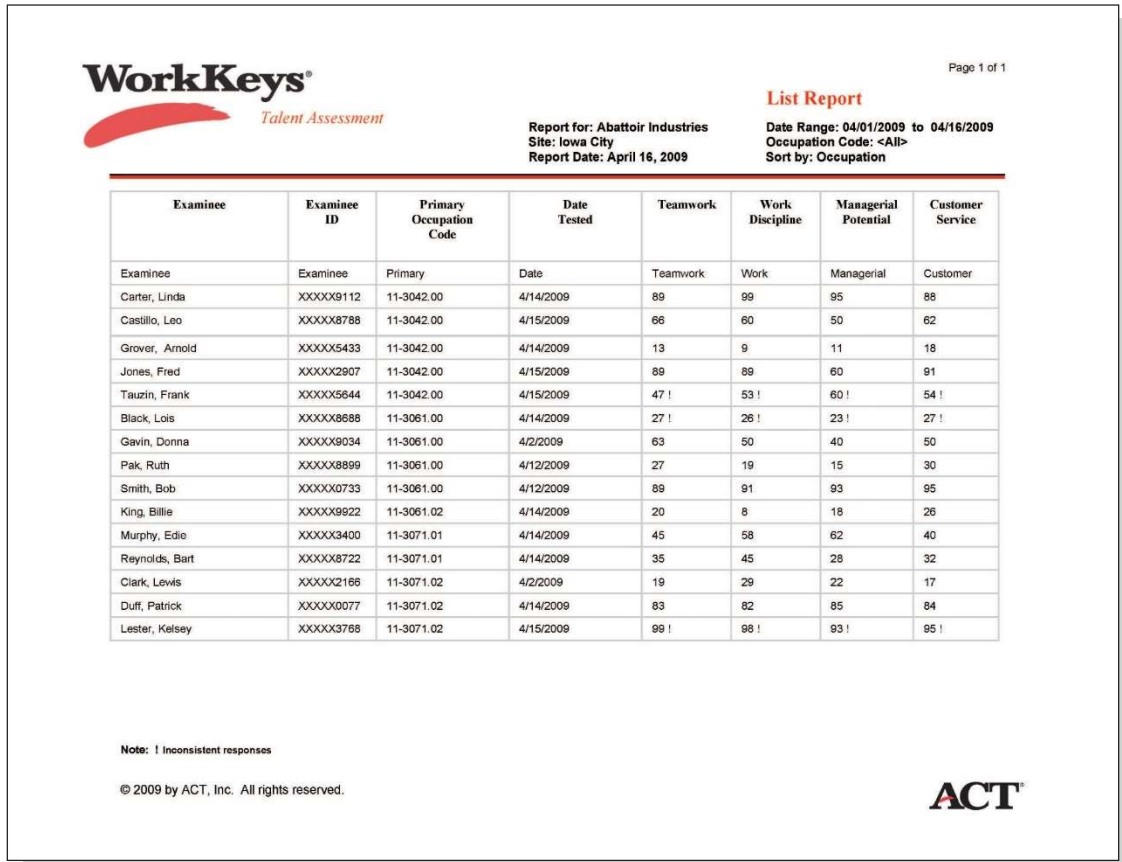
As with the other Talent reports, exceptions are flagged with exclamation points to note that results may be less accurate due to an examinee's pattern of responses on the assessment.

For organizations that use the custom benchmarking feature, a customized List Report that provides information about benchmark scores for a batch of candidates will be provided by ACT on a regular basis. The benchmark List Report features the examinee's name, the last four digits of a unique identification number, the primary occupation code for the occupation that was benchmarked, the benchmark version (an organization may have multiple versions as time goes by), the benchmark index (a percentile score ranging from 1 to 99) and a recommended category based on the benchmark score (see Figure 17). The benchmark List Report will   be provided in a format that allows the organization to sort based on any of the columns. The example shown in Figure 17 is sorted by benchmark index. As with other Talent reports, exceptions are flagged with exclamation points to note that results may be less accurate due to an examinee's pattern of responses on the assessment.

Figure 17
Sample List Report with Benchmark Information

Examinee	Examinee ID	Primary Occupation Code	Date Tested	TALENT Benchmark Version	BENCHMARK INDEX (1-99%ile)	Recommended Category Based on Benchmark Index
Gavin, Donna	XXXXX9034	11-3061.00	11/14/2006	LOC1	99	High
Black, Lois	XXXXX8688	11-3061.00	11/14/2006	LOC1	98	High
Castillo, Leo	XXXXX8788	11-3061.00	11/24/2006	LOC1	89	High
Murphy, Edie	XXXXX3400	11-3061.00	11/14/2006	LOC1	86	High
Duff, Patrick	XXXXX0077	11-3061.00	11/14/2006	LOC1	84	High
Clark, Lewis	XXXXX2166	11-3061.00	11/14/2006	LOC1	77	High
Carter, Linda	XXXXX9112	11-3061.00	11/14/2006	LOC1	67 !	Moderate
Grover, Arnold	XXXXX5433	11-3061.00	11/14/2006	LOC1	56	Moderate
Jones, Fred	XXXXX2907	11-3061.00	11/14/2006	LOC1	54 !	Moderate
Lester, Kelsey	XXXXX3768	11-3061.00	11/14/2006	LOC1	37	Moderate
Pak, Ruth	XXXXX8899	11-3061.00	11/14/2006	LOC1	37 !	Moderate
Duff, Patrick	XXXXX0077	11-3061.00	11/14/2006	LOC1	27	Low
Smith, Bob	XXXXX0733	11-3061.00	11/24/2006	LOC1	24	Low
Starr, Sam	XXXXX4100	11-3061.00	11/14/2006	LOC1	23	Low

WorkKeys®
Talent Assessment

Page 1 of 1
List Report

Report for: Abattoir Industries
Site: Iowa City
Report Date: July 14, 2007

Date Range: 07/01/2007 to 07/14/2007
Occupation Code: 11-3061.00
Sort by: Talent Benchmark

Notes: If this report is filtered by a specific occupation code, the Talent Benchmark and Recommended Category are for the filtered occupation.
! = Inconsistent responses

ACT®

Using Talent Assessment for Training and Development Purposes

Training and development interventions targeting specific behavioral skill deficits are highly relevant to schools, workforce training boards, and organizations.

Schools and One-stop Service Centers want to ensure that their students/clients are job ready. Identifying behavioral skills deficits with the Talent Assessment and addressing those weaknesses through subsequent interventions help accomplish this mission.

Organizations may use the Talent Assessment for training and development purposes. When organizations use personality assessments for employee development, they first use score reports to identify areas in which employee improvement is likely needed. Next, organizations direct their employees toward resources that facilitate the needed improvements. However, since employees usually have different strengths and weaknesses, identifying and delivering appropriate training and development resources for each employee can be extremely challenging. Using Talent as the platform from which to identify employee personal skill needs can assist organizations in prioritizing training resources.

Table 17 provides a brief list of behavioral competencies for each of the 12 Talent scales. Each of these competencies contains one or more sets of skills that can be developed through training. To maximize the usefulness of this assessment, it is suggested that examinees receive feedback and that desired training outcomes are formulated based on needed skill acquisition.

Table 17
Behavioral Scales, Targets, and Representative Behaviors

Scale & Definition	Behavioral Competence Target	Representative Behavior(s)
Carefulness		
Tendency to think and plan carefully before acting or speaking.	Planning	<u>Time management</u> – Shows up to work on time – Makes a daily "to do" list
		<u>Self-management</u> – Sets goals for performing new tasks – Keeps track of task performance
	Thinking before acting	<u>Self-monitoring</u> – Alters behavior in response to social situations – Acts differently among different groups of people
		<u>Awareness of consequences</u> – Considers the potential consequences of his or her actions before acting – Identifies how his or her actions might impact others on multiple levels
Cooperation		
Tendency to be likable and cordial in interpersonal situations.	Interpersonal Relations	<u>Give and take</u> – Effectively negotiates solutions to problems – Is able to compromise in order to facilitate task completion
		<u>Distinguish people from tasks (distancing)</u> – Effectively works with other persons with differing opinions – Does not let interpersonal differences interfere with task performance
	Communication	<u>Listening skills</u> – Focuses on the person communicating – Asks questions to build understanding – Restates or paraphrases to demonstrate understanding
		<u>Disagree without being critical</u> – Directs differing opinions toward the task, product, or process rather than the person – Voices opinions or viewpoints that contrast with the majority opinion – Voices opinion or provides feedback to others in a respectful manner

Table 17 *(continued)*

Scale & Definition	Behavioral Competence Target	Representative Behavior(s)
Creativity		
Tendency to be imaginative and to think "outside the box".	Divergent thinking	Brainstorming – Proposes multiple solutions to problems – Encourages others to share ideas
		Consider other perspectives – Considers other viewpoints before making a decision – Gathers information from multiple sources with diverse perspectives
	Information seeking	Information gathering – Gathers background information prior to task-specific information – Identifies appropriate sources of information
		Feedback from others – Seeks suggestions from others on how to improve performance or solve a problem – Solicits feedback from diverse sources
Discipline		
Tendency to be responsible, dependable, and follow through with tasks without becoming distracted or bored.	Planning	Time management – Shows up to work on time – Makes a daily "to do" list
		Self-management – Sets goals for performing a new task – Keeps track of task performance
	Goal Setting	Establishing goals – Has a written set of goals – Sets goals which are clear – Sets goals which are specific – Sets goals which are achievable – Sets goals which are challenging
		Working toward goals – Reviews goals on a regular basis – Monitors progress in goal achievement – Effectively deals with setbacks and challenges
	Resource Management	Self-discipline and motivation – Consistently completes tasks or projects which have been started – Displays confidence in his or her own abilities – Avoids distraction and remains focused on work tasks
		Asking for assistance – Is not afraid to ask for clarification if something is unclear – Identifies and utilizes appropriate support resources

Table 17 *(continued)*

Scale & Definition	Behavioral Competence Target	Representative Behavior(s)
Goodwill		
Tendency to be forgiving and to believe that others are well-intentioned.	Interpersonal Relations	Trusting and vulnerability – Demonstrates an ability to listen and speak frankly – Delegates tasks when appropriate
		Positive thinking regarding others – Overall, speaks about coworkers or classmates in a positive manner – Refrains from making critical or negative comments about others – Regularly highlights the good aspects of a person or situation
Influence		
Tendency to impact and dominate social situations by speaking without hesitation and often becoming a group leader.	Assertiveness	Relational appropriateness – Is confident when interacting with others – Uses language/style of speech that is appropriate for communicating with a particular person or group
	Communication	Public speaking – Is comfortable speaking before a large group of people – Maintains audience interest when making presentations – Speaks clearly during presentations – Maintains adequate eye contact when addressing the audience
		Persuasion skills/Influence tactics – Is able to show others the value of his or her position on an issue – Uses evidence and logic to influence others
		Negotiation skills – Proactively resolves conflict among individuals or groups – Effectively negotiates solutions to problems – Conducts negotiations in a professional and respectful manner
		Provides feedback – Provides positive feedback when warranted – Delivers constructive feedback in a respectful manner – Providing feedback that is consistent – Provides feedback that is useful

Table 17 *(continued)*

Scale & Definition	Behavioral Competence Target	Representative Behavior(s)
Optimism		
Tendency toward having a positive outlook and confidence in successful outcomes.	Positive thinking	Manage expectations – Sets realistic personal goals – Completes tasks with confidence
		Avoids negative thinking – Displays a positive attitude at work or school – Identifies the "bright side" of seemingly negative events – Accepts constructive criticism
	Attribution training	Locus of control – Takes responsibility for mistakes or errors – Uses setbacks as opportunities to improve processes or procedures
Order		
Tendency to be neat and well organized.	Organization	Organization skills – Maintains a neat work environment – Searches for information in a systematic manner – Keeps "to do" lists – Maintains material organized using a logical system
Savvy		
Tendency to read other people's motives, understand office politics, and anticipate the needs and intentions of others.	Interpersonal Relations	Sensitivity and appropriateness – Uses language/style of speech that is appropriate for communicating with particular persons or groups – Demonstrates sensitivity to the needs and feelings of diverse individuals and groups
		Self-monitoring – Alters behavior in social situations when necessary – Acts differently among different groups of people
	Communication	Assimilation of verbal content – Effectively interprets verbal content from multiple sources – Possesses superior written communication skills
		Interpretation of non-verbal cues – Maintains appropriate eye contact during interpersonal communication – Interprets others' body language appropriately
Sociability		
Tendency to enjoy being in other people's company and to work with others.	Self-monitoring	Self-monitoring – Alters behavior in response to social situations – Acts differently among different groups of people
		Awareness of situational demands – Appropriately gauges social situations
	Interactions	Social skills – Is confident in social interactions – Appropriately gauges social situations

Table 17 *(continued)*

Scale & Definition	Behavioral Competence Target	Representative Behavior(s)
Stability		
Tendency to maintain composure and rationality in situations of actual or perceived stress.	Self-monitoring	Self-monitoring – Alters behavior in social situations when necessary – Acts differently among different groups of people
		Emotional control – Thinks before speaking – Maintains emotional composure in stressful situations
		Relational consequences of emotionality – Maintains composure when communicating with others – Considers the consequences of speaking/acting before doing so
	Stress management	Relaxation skills – Balances work activities with leisure activities – Engages in healthy activities to reduce stress
		Reduction in negative thinking – Presents a positive self-image to others – When faced with emotional situations, delays action rather than reacting out of emotion
Striving		
Tendency to have high aspiration levels and to work hard to achieve goals.	Achievement orientation	Goal-setting – Has a written set of goals – Sets goals which are clear – Sets goals which are specific – Sets goals which are achievable
		Self-motivation – Sets challenging goals – Completes tasks without direct supervision
	Resource Management	Pacing – Maintains an appropriate work pace – Successfully manages multiple tasks or assignments
		Acquiring necessary resources – Identifies appropriate external resources – Uses networking techniques to expand access to resources
	Self-confidence	Positive expectations – Presents a positive self-image – Rewards self for successfully accomplishing goals

Factors Influencing Training Success

A strong body of research evidence suggests that the success of training interventions is dependent upon a variety of factors, including:

- Cognitive abilities (such as those abilities measured by the Career Readiness Certificate)(www.act.org/certificate)
- An individual's motivation to improve his or her behavior
- The complexity of the skills to be trained
- The design, delivery, and duration of the training program.

Not all training topics will be appropriate for all persons. The specific post-assessment skills training an individual receives should be contingent upon an individual's educational background as well as the complexity of his or her job. For example, the Talent dimension Savvy may not be as relevant to most entry-level jobs. Given this, it may be a poor use of resources to provide Savvy-related skills training to individuals holding such jobs. However, entry-level employees may benefit greatly from Discipline-related skills training. Training of this type might address basic work skills, such as showing up to work regularly and on time.

Interpreting WorkKeys Talent Assessment Profiles

When interpreting examinee results in a coaching/mentoring role, it is important to provide feedback that is both motivational and informative. For instance, be sure that the examinee understands what a percentile score means (Refer to the beginning of this chapter for a definition and example). It may be helpful to explain the approximate relative ranges for categorizing Talent skills. The ranges featured on Table 18 are suggested for the purposes of interpretation.

Table 18
Interpretive Levels of Talent Scores

Interpretive Level	Talent Percentile Range
Capitalize on Individual Strengths (High)	76–99
Continue to Cultivate Individual Skills (Moderate)	26–75
Construct Plans for Individual Improvement (Low)	1–25

Also, it is important to take into account job fit with the talent profile. Are the behaviors appropriate for the examinee's specified occupation(s)? Is there a different job where the examinee's talents could be better utilized? The WorkKeys Fit Assessment may be a helpful tool to evaluate occupational fit (www.act.org/workkeys/assess/fit).

Case Examples Based on Talent Profiles

Case 1: Working with Others

In many organizations, working together with other employees is very important to enhancing productivity. In Figure 18, note that an employee known as "Barb" has low to moderate percentile scores on the Cooperation, Goodwill, Savvy, and Stability scales. If Barb is working in a team environment, it is helpful to point out these scores. Secondly, it is important for her to improve her personality-related skills, such as Cooperation, by setting goals to improve relational and communication skills (see other related skills in Table 17).

Figure 18
Talent Profile from Case 1 – Barb

WORKKEYS TALENT ASSESSMENT PROFILE

Percentile Rank: Approximate percent at or below score

		0	10	20	30	40	50	60	70	80	90	100
Carefulness	70											
Cooperation	25											
Creativity	35											
Discipline	40											
Goodwill	20											
Influence	40											
Optimism	50											
Order	75											
Savvy	40											
Sociability	50											
Stability	40											
Striving	65											
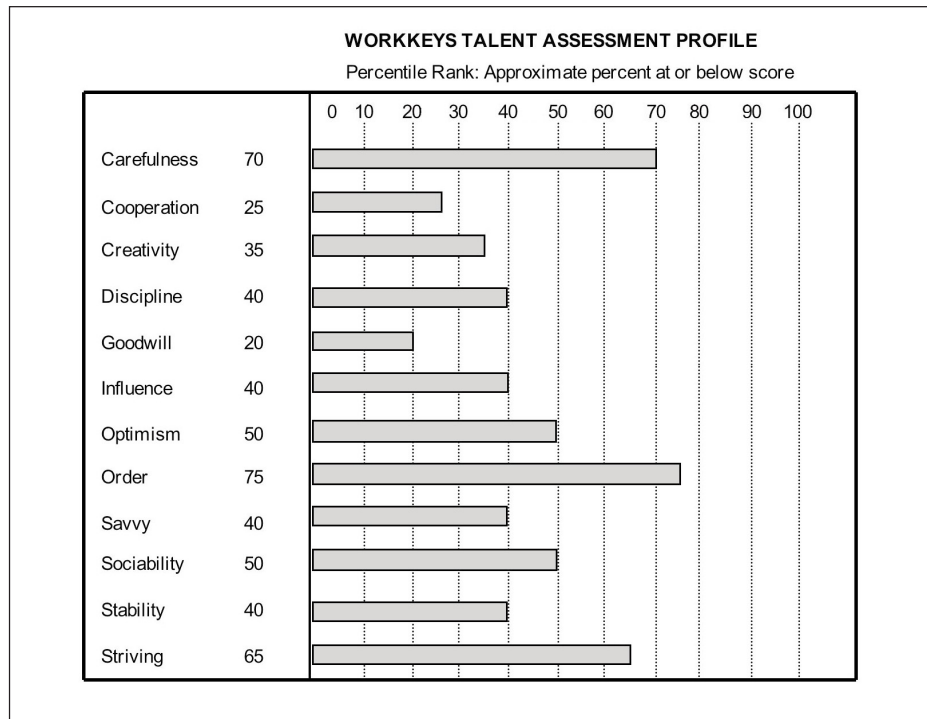
Creating an individual development plan based on the interpretive section of the Talent report will serve to connect desired progress to observable behaviors. (For an example of a development plan using Talent, see Appendix B.) For instance, Barb's development plan should include constructing plans to improve her Cooperation and Goodwill skills.

In addition, by highlighting Barb's strengths, such as Carefulness and Order, as well as areas she could continue to develop, such as Stability and Discipline, these behaviors may be used to better the overall functioning of the team (e.g., Barb may work on her team-related skills by training other employees using her strengths in Carefulness, such as job safety and quality control).

Case 2: Work Focus

In many organizations, maintaining job focus is extremely important. In Figure 19, an employee named "Jim" is featured. Jim's attributes suggest that Discipline, Carefulness, and (to a lesser extent) Striving personality-related skills are particularly low. Reviewing Jim's lowest scores, particularly those in the "Construct Plans for Improvement" portion of his score report, may be a positive step toward creating a development plan that addresses the areas that need improvement (e.g., for Carefulness and Discipline, Jim may benefit from training in time-management and goal-setting, see Table 17).

Figure 19
Talent Profile from Case 2 — Jim

WORKKEYS TALENT ASSESSMENT PROFILE

Percentile Rank: Approximate percent at or below score

Carefulness	20
Cooperation	40
Creativity	75
Discipline	25
Goodwill	45
Influence	40
Optimism	35
Order	45
Savvy	40
Sociability	65
Stability	30
Striving	30
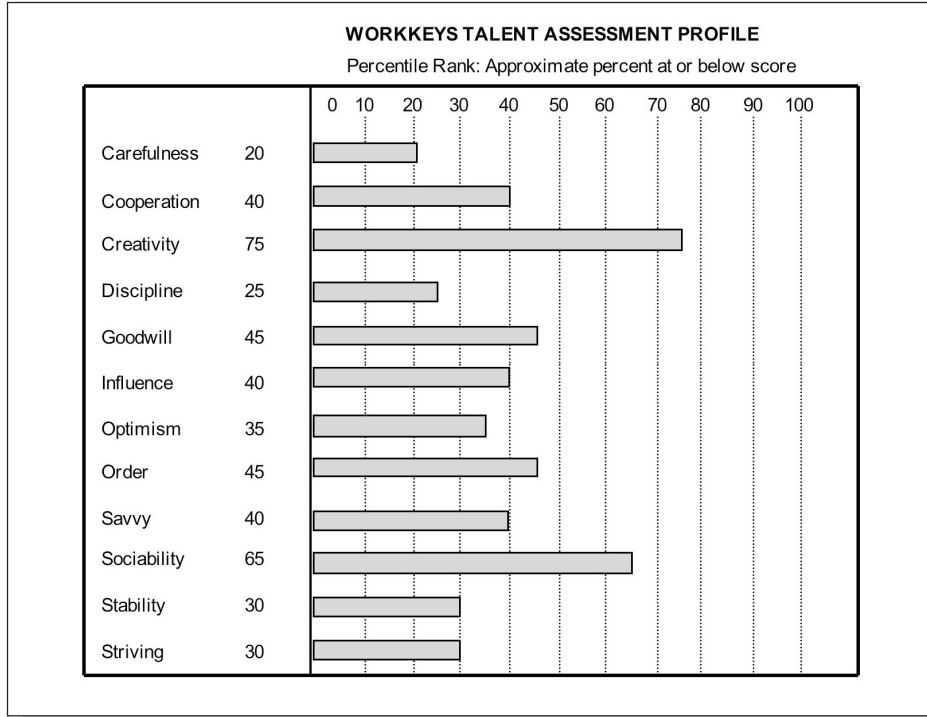
The report may also suggest that Jim is not being challenged in his work, as he scores highly in Creativity and Sociability personality-related skills. Considering with Jim ways in which he can utilize these relative strengths on the job may help him be more focused at work.

73

6
Administration of the WorkKeys Talent Assessment

The Talent Assessment is highly efficient and practical in terms of cost, length of time required for test administration, type of equipment needed, and test user training. The assessment is administered entirely online through a web-based platform, thus reducing the costs normally associated with the administration, scoring, and reporting of traditional paper-and-pencil tests. As a result, the Talent Assessment only requires basic computing and Internet hardware/software, facilitating an easy-to use and cost-efficient account management system for employers.

The comprehensive Test Administration and User Guide is at www.act.org/workkeys/pdf/WorkKeysInternetUserGuide.pdf. This document contains instructions for test administrators, including details on steps required for setting up examinees in the online environment and managing company examinees for the entire WorkKeys line of products. Other documents, including frequently asked questions (FAQs), are available at www.act.org/workkeys/assess/talent.

Testing Environment

Remind users to turn off pagers, cell phones, and/or wristwatch alarms to avoid distracting other users. All testing staff, room supervisors, and proctors should remain attentive to their testing responsibilities throughout the entire administration. To protect the validity of individual test scores and maintain the security of the test materials, the following must be observed:

- Walk around the room during testing to be sure users are working on the correct assessment and to prevent prohibited behaviors.
- During the assessment, do not read or engage in any tasks not related to the administration of the assessment.
- Do not engage in conversation during the assessment or allow unauthorized personnel into the testing room.
- Do not leave the testing room unattended at any time.

More information on the testing environment and administrator guidelines is in the Test Administration and User Guide.

Examinee Setup in the Validus™ Virtual Test Center

The administrator will need to set up the examinee in the Validus™ Virtual Test Center prior to the examinee beginning the test. Please refer to the Test Administration and User Guide for instructions at: www.act.org/workkeys/pdf/WorkKeysInternetUserGuide.pdf .

Welcome Screen and Confidentiality Agreement

The assessment's web-delivered Welcome Screen to launch the assessment is shown in Figure 20.

Figure 20
Welcome Screen for the Talent Assessment
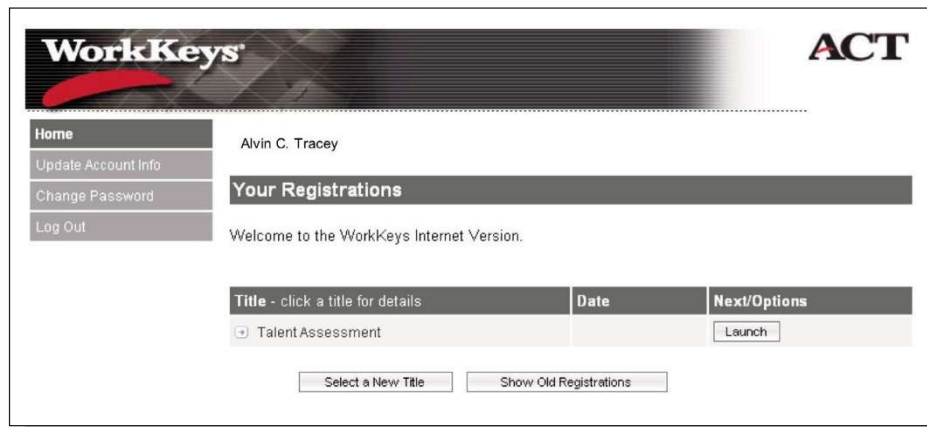
Prior to starting the Talent Assessment, all examinees are required to agree to the Confidentiality Agreement (see Figure 21). The agreement expresses the confidential nature of the contents of the test. Examinees who do not endorse the Confidentiality Agreement will not be able to proceed to the actual assessment. The assessment will still be counted as used even if an examinee does not agree to the confidentiality statement.

Figure 21
Confidentiality Agreement
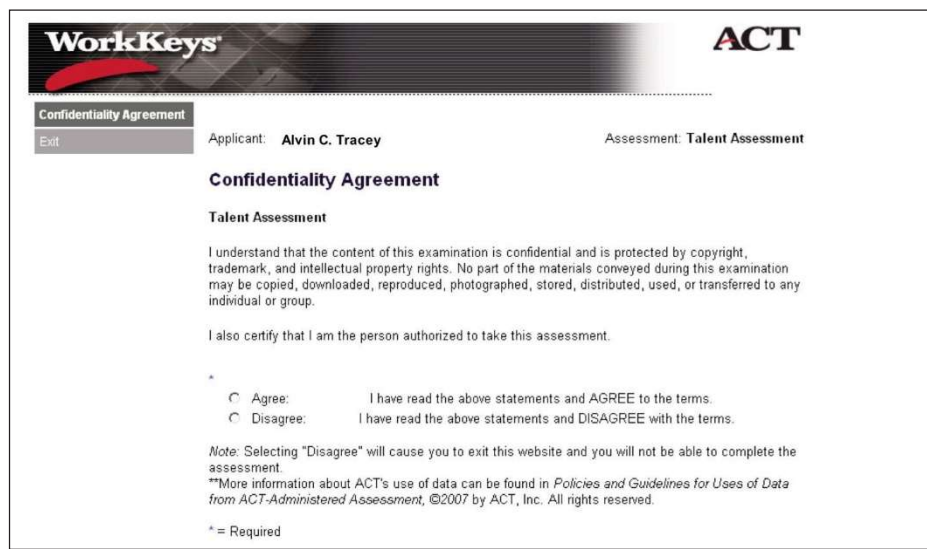
Test Instructions for Examinees

Examinees are required to provide demographic information and to select at least one occupation (see Figure 22). Examinees are allowed to select up to five occupations, with the first (called the "primary occupation") being required for scoring. A lookup table function is used in this part of the assessment, and a help page is available to guide examinees through the process of locating occupational titles. The help page also includes O*NET codes.

Figure 22
Occupation Selection Menu

Accommodations for Examinees for Whom English Is a Second Language

Examinees for whom English is a second language may bring and use a foreign language dictionary. The test administrator must check the dictionary, before and after testing, to ensure that it does not contain any of the test items or responses to test items.

Since ACT does not administer the WorkKeys assessments in person, it is necessary that the Site Administrator work with examinees to determine if other accommodations (e.g., extended test time, a reader for aural administration) are to be approved. If accommodations are approved, the Site Administrator must make the arrangements necessary for that accommodation.

Reporting the Results of the WorkKeys Talent Assessment

Scoring and reporting for the Talent Assessment is instantaneous. A PDF document is created and stored in a secure server for access by the client/employer immediately after the examinee has completed the assessment or at a later time (up to one year). Three different reports are generated: an Employer Report, an Examinee Report, and a List Report. A detailed explanation of the different components of these reports can be found in Chapter 5.

Appendix A
Norms for the Talent Assessment

Table A1 features a crosswalk between scales' scores and corresponding percentiles using the normative sample (i.e., the combination of the development and cross-validation samples). As noted in Chapters 3 and 7, percentile scores are presented in all Talent Assessment reports along with the following score levels: low (1–25th percentile), moderate (26–75th percentile), and high (76–99th percentile). These levels are provided as a frame of reference for making staffing decisions. Although ACT recommends a "top-down" approach to selection and other decisions, it is helpful to review a visual based on the normal distribution.

Table A1
Percentile Rank Scores for the Talent Assessment Scales

Raw Score							Percentiles					
	Care	Coop	Creat	Disc	Good	Infl	Optim	Order	Savvy	Soci	Stab	Striv
12	.	1	.	.	.	.	.	.	.	.	.	.
13	.	1	1	1	1	1	1	1	.	.	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	2	1	1	1	1	2	1
31	1	1	1	1	1	2	1	1	1	1	2	1
32	1	1	1	1	1	2	1	1	1	2	2	1
33	1	1	1	1	1	3	1	1	1	2	3	1
34	1	1	1	1	1	4	1	1	1	3	4	1
35	1	1	1	1	1	4	1	1	1	3	4	1
36	1	1	1	1	1	5	1	1	1	3	5	1
37	1	1	1	1	1	6	1	1	1	4	6	1
38	1	1	1	1	1	7	1	1	1	5	7	1
39	1	1	1	1	1	8	1	2	1	6	8	1
40	1	1	1	1	1	10	2	3	1	7	9	1

Table A1 (continued)

Raw Score	Care	Coop	Creat	Disc	Good	Infl	Optim	Order	Savvy	Soci	Stab	Striv
						Percentiles						
41	1	1	1	1	1	11	2	3	1	8	11	2
42	1	1	2	1	2	14	2	3	1	9	13	2
43	2	1	2	1	2	16	2	4	1	10	15	3
44	2	2	3	1	2	19	3	5	2	11	17	3
45	3	3	3	1	3	22	3	6	3	12	19	4
46	3	3	4	2	4	24	4	7	3	14	22	5
47	4	4	5	2	4	27	5	8	4	16	25	6
48	5	5	6	3	5	30	7	9	5	18	28	7
49	6	6	8	4	6	33	9	11	6	21	30	9
50	7	8	9	4	7	36	10	12	7	23	33	11
51	9	10	11	6	9	39	13	14	9	25	36	12
52	10	13	13	7	12	43	16	16	10	28	40	14
53	12	16	16	8	15	46	18	19	12	30	44	16
54	15	18	19	10	19	50	21	22	14	33	47	18
55	18	22	22	12	22	54	24	24	16	36	51	20
56	21	25	25	14	25	57	28	26	19	39	54	23
57	25	29	29	16	29	60	31	29	22	42	58	26
58	28	33	33	19	34	63	36	33	25	45	61	29
59	32	38	36	22	38	66	40	37	29	48	64	31
60	36	43	40	25	44	69	46	40	33	51	67	34
61	41	48	44	28	48	73	50	44	37	54	71	38
62	45	53	47	31	53	76	54	48	41	57	74	41
63	49	59	51	35	58	78	59	51	46	60	77	45
64	53	66	55	39	63	81	63	55	50	63	79	50
65	57	72	61	44	68	83	68	59	54	66	82	54
66	61	77	66	48	73	85	73	64	60	70	84	58
67	65	81	70	53	77	87	77	69	64	73	86	62
68	69	86	75	58	81	89	81	73	69	76	88	67
69	72	91	78	63	84	91	85	77	74	79	90	71
70	75	94	81	67	87	93	88	80	77	81	92	75
71	79	98	84	71	90	95	90	84	81	83	93	79
72	82	99	87	75	92	96	93	87	83	85	95	83
73	85	.	90	80	95	97	95	90	86	87	97	86
74	88	.	92	85	97	98	96	93	88	89	98	90
75	91	.	95	90	98	98	97	95	90	91	99	93
76	93	.	97	94	99	99	98	97	92	93	99	96
77	94	.	99	97	99	99	99	99	93	94	99	98
78	96	.	99	99	99	99	99	99	95	95	99	99
79	97	.	.	.	.	.	.	.	97	97	.	.
80	98	.	.	.	.	.	.	.	98	98	.	.
81	99	.	.	.	.	.	.	.	99	99	.	.
82	99	.	.	.	.	.	.	.	99	99	.	.
83	99	.	.	.	.	.	.	.	99	99	.	.
84	99	.	.	.	.	.	.	.	99	99	.	.

Note. Care = Carefulness, Coop = Cooperation, Creat = Creativity, Disc = Discipline, Good = Goodwill, Infl = Influence, Optim = Optimism, Soci = Sociability, Stab = Stability, Striv = Striving.

Table A2
Percentile Rank Scores for the Talent Assessment Indices

| | | Percentiles | | |
Raw Score	Teamwork	Work Disc.	Managerial	Customer Serv.
22	.	1	.	.
23	.	1	.	.
24	1	1	1	.
25	1	1	1	1
26	1	1	1	1
27	1	1	1	1
28	1	1	1	1
29	1	1	1	1
30	1	1	1	1
31	1	1	1	1
32	1	1	1	1
33	1	1	1	1
34	1	1	1	1
35	1	1	1	1
36	1	1	1	1
37	1	1	1	1
38	1	1	1	1
39	1	1	1	1
40	1	1	1	1
41	1	1	1	1
42	1	1	1	1
43	1	1	1	1
44	1	1	1	1
45	1	1	1	1
46	1	1	1	1
47	1	1	1	1
48	1	1	1	1
49	1	1	1	1
50	1	1	1	1
51	1	1	1	1
52	1	1	1	1
53	1	1	1	1
54	1	1	1	1
55	1	1	1	1
56	1	1	1	1
57	1	1	1	1
58	1	1	1	1
59	1	1	1	1
60	1	1	1	1
61	1	1	1	1
62	1	1	1	1
63	1	1	1	1
64	1	1	1	1
65	1	1	1	1
66	1	1	1	1
67	1	1	1	1

Table A2 *(continued)*

		Percentiles		
Raw Score	Teamwork	Work Disc.	Managerial	Customer Serv.
68	1	1	1	1
69	1	1	1	1
70	1	1	1	1
71	1	1	1	1
72	1	1	1	1
73	1	1	1	1
74	1	1	1	1
75	1	1	1	1
76	1	1	1	1
77	1	1	1	1
78	1	1	1	1
79	1	1	1	1
80	1	1	1	1
81	1	1	1	1
82	1	1	1	1
83	1	2	1	1
84	2	2	2	1
85	2	2	2	1
86	2	3	3	1
87	2	3	4	1
88	3	4	4	1
89	3	4	5	1
90	4	5	6	1
91	4	6	7	2
92	5	7	8	2
93	5	8	9	2
94	6	9	10	2
95	7	10	11	3
96	8	12	13	3
97	9	14	15	4
98	10	15	17	4
99	12	17	19	5
100	14	19	21	5
101	15	20	23	6
102	17	22	26	6
103	18	24	28	7
104	20	27	30	7
105	21	30	32	8
106	23	33	34	9
107	25	36	37	10
108	27	39	40	11
109	29	42	43	13
110	31	45	46	14
111	33	48	49	16
112	36	51	52	19
113	39	54	55	21

Table A2 *(continued)*

Raw Score	Teamwork	Work Disc.	Managerial	Customer Serv.
		Percentiles		
114	42	57	58	23
115	44	61	61	25
116	47	65	64	27
117	50	69	67	29
118	53	73	70	32
119	55	76	73	35
120	58	79	76	38
121	61	82	79	40
122	65	84	81	43
123	68	87	83	46
124	72	90	85	49
125	75	93	86	52
126	77	95	88	55
127	80	96	89	58
128	82	97	91	61
129	84	98	92	64
130	86	99	94	67
131	88	99	95	70
132	90	99	96	74
133	91	.	97	77
134	93	.	97	79
135	94	.	98	81
136	96	.	98	83
137	97	.	99	85
138	98	.	99	87
139	98	.	99	89
140	99	.	99	91
141	99	.	99	92
142	99	.	99	94
143	99	.	99	95
144	99	.	99	96
145	.	.	.	97
146	.	.	.	98
147	.	.	.	99
148	.	.	.	99
149	.	.	.	99
150	.	.	.	99

Note. Teamwork = Teamwork Index, Work Disc. = Work Discipline Index, Managerial = Managerial Potential Index, Customer Serv. = Customer Service Orientation Index.

Appendix B
Talent Development Worksheet

This worksheet may be used to help examinees in making plans to improve their skills.

Scales	Score	Skills to Develop	Timeline	Method	Notes
Carefulness		Time management Self-management Self-monitoring Awareness of consequences			
Cooperation		Give and take Distinguish people from tasks (distancing) Listening skills Disagree without being critical			
Creativity		Brainstorming Consider other perspectives Information gathering Feedback from others			
Discipline		Time management Self-management Establishing goals Working toward goals Self-discipline and motivation Asking for assistance			
Goodwill		Trusting and vulnerability Positive thinking regarding others			
Influence		Relational appropriateness Public speaking Persuasion skills/Influence tactics Negotiation skills Provides feedback			

Scales	Score	Skills to Develop	Timeline	Method	Notes
Optimism		Manage expectations Avoids negative thinking Locus of control			
Order		Organization skills			
Savvy		Sensitivity and appropriateness Self-monitoring Assimilation of verbal content Interpretation of non-verbal cues			
Sociability		Self-monitoring Awareness of situational demands Social skills			
Stability		Self-monitoring Emotional control Relational consequences of emotionality Relaxation skills Reduction in negative thinking			
Striving		Goal-setting Self-motivation Pacing Acquiring necessary resources Positive expectations			

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