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Which Personality Attributes Are Most Important in the Workplace?

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Abstract

Employees face a variety of work demands that place a premium on personal attributes, such as the degree to which they can be depended on to work independently, deal with stress, and interact positively with coworkers and customers. We examine evidence for the importance of these personality attributes using research strategies intended to answer three fundamental questions, including (a) how well does employees' standing on these attributes predict job performance?, (b) what types of attributes do employers seek to evaluate in interviews when considering applicants?, and (c) what types of attributes are rated as important for performance in a broad sampling of occupations across the U.S. economy? We summarize and integrate results from these three strategies using the Big Five personality dimensions as our organizing framework. Our findings indicate that personal attributes related to Conscientiousness and Agreeableness are important for success across many jobs, spanning across low to high levels of job complexity, training, and experience necessary to qualify for employment. The strategies lead to differing conclusions about the relative importance of Emotional Stability and Extraversion. We note implications for job seekers, for interventions aimed at changing standing on these attributes, and for employers.

Keywords

personality, job performance, workplace readiness

There are three main options for students on completion of high school: higher education, the civilian workforce, and the military. Under the rubric of "workforce readiness," questions regularly arise as to the degree to which students are prepared for these postsecondary endeavors (Casner-Lotto & Barrington, 2006). One set of questions focuses on issues of academic achievement that are clearly central to the mission of secondary education: Are students acquiring the subject-specific content knowledge and more general learning and problem-solving skills needed in higher education, civilian, and military workplace environments? A second set of questions focuses on attributes beyond the knowledge/skill/ability domains, referred to variously as "personality characteristics," "noncognitive attributes," "soft skills," "social and emotional competencies," or "21st century skills," among other labels (National Research Council, 2011). These questions address whether students are entering the workforce with the capability to apply these soft skills successfully. The labels listed earlier are used in reference to a wide array of attributes, such as dependability, resilience, and cooperation. Attention to these attributes comes from a number of disciplines. Personality at work is a widely studied topic in industrial and organizational psychology (cf. Christiansen & Tett's, 2013, *Handbook of Personality at Work*). Noncognitive attributes are rapidly growing topics of study in labor economics (e.g., Cobb-Clark & Tan, 2011; Heckman, Stixrud, & Urzua, 2006). In the field of education, classroom interventions aimed at social and emotional skills are the topic of a meta-analysis by Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011).

Organizing Framework

In our view, the attributes that emerge when lists of soft skills, social–emotional competencies, or 21st century skills are produced are either trait labels (e.g., dependability, cooperativeness) or behaviors (e.g., teamwork)

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that can be viewed as manifestations of these traits. Within psychology, an organizing framework has emerged over the last several decades that provides a useful taxonomic structure for the thousands of trait adjectives in the English language. This is the five-factor model of personality (Big Five; McCrae & Costa, 1997). Although the labels for the factors have changed over the years with the accumulation of research, the current five-factor model includes Conscientiousness, Agreeableness, Emotional Stability, Extraversion, and Openness to Experience. Barrick, Mount, and Judge (2001) have offered a series of adjectives intended to describe the five factors: (a) Conscientiousness involves being dependable, achievement-striving, hardworking, persevering, and orderly; (b) Agreeableness involves being cooperative, flexible, tolerant, and forgiving; (c) Emotional Stability involves being calm, self-confident, and resilient; (d) Extraversion involves being sociable, talkative, assertive, and active; and (e) Openness to Experience involves being curious, broad-minded, intelligent, and cultured. These labels are consistent with those used by researchers who are not necessarily focused on occupational performance (e.g., Deary, Weiss, & Batty, 2010).

We use this Big Five framework to organize our investigations. Doing so means that we are operating at a relatively broad level, as each of these five broad factors can be broken down into subfacets (e.g., Conscientiousness is commonly seen as having dependability, achievement-striving, orderliness, and cautiousness facets; Dudley, Orvis, Lebiecki, & Cortina, 2006). Some of the data we examine are available only at the aggregate Big Five level; other data are available at the subfacet level. Our primary goal is to present data that permit conclusions about the relative importance of the Big Five facets in the workplace, though at times we make inferences based on data at the subfacet level.

The Importance of Personality Attributes in the Workplace

In this article, we ask the question "which personality attributes are most important in the workplace?" To address this question, we examine evidence from three distinct research approaches that operationalize importance in three ways. Our intent is to integrate these diverse approaches to see whether a common conclusion emerges.

Predicting work performance

Our first approach to addressing attribute importance was to examine the research literature on the use of measures of the Big Five constructs to predict work behaviors. In this literature, researchers examine which attributes are useful for predicting valued job behaviors—such as completing tasks well, contributing to a positive work environment, and avoiding counterproductive behavior (such as theft or withdrawal). For this approach, the relative importance of the personality attributes is operationalized in terms of the size of validity coefficients relating these attributes to various facets of job performance. In this context, *validity coefficients* refer to correlation coefficients that index the relationship between measures of personality attributes and measures of job performance.

We believe this is a highly relevant type of data; however, we note two potential limitations. First, there is no necessary relationship between what the research literature reveals about the relative validity of various personality attributes and the value that employers place on these attributes. Employers may be unaware of the research literature, or they may discount it on the basis of their personal perspective. Second, the research literature does not reflect a systematic sampling of occupations. Rather, it typically involves studies of individual jobs in single organizations, with these studies done for various purposes. Some may be conducted by the publishers of personality measures, who gather data from cooperative organizations to document the validity of their measures in various settings. Others are conducted by individual organizations wishing to document the validity of measures they use in their selection systems. Although the end result may be a large number of validity studies, they reflect a convenience sampling of occupations that may or may not prove representative of findings across the full occupational spectrum.

Evaluating job candidates

The second body of research we examined operationalizes importance as the value that employers place on an attribute when considering applicants for employment. The employment interview is a widely used applicant selection device; in fact, its use appears almost universal. Some employers use structured interviews in which interviewers evaluate candidates on a specified set of dimensions (Campion, Palmer, & Campion, 1997). Examining the frequency with which various attributes emerge on lists of the dimensions on which employers evaluate candidates thus can serve as an operationalization of importance.

This approach also has limitations. As with the first approach (i.e., gathering studies and examining the validity of measures of personality attributes), the database on what employers seek in interviews is not based on a systematic sampling of employers or of occupations. In fact, the use of a structured approach to interviewing is viewed as relatively sophisticated; many employers use

unstructured interviews. Thus, it is possible that data from structured interviews provide an incomplete and biased picture of what employers value.

Rating job-relevant attributes

As the first two bodies of research share the limitation of a lack of systematic sampling of occupations, we considered a third line of evidence that operationalizes importance in terms of direct ratings of attribute importance gathered as part of a systematic job analysis system developed by the U.S. Department of Labor (DOL) known as O*NET (Occupational Information Network; Peterson, Mumford, Borman, Jeanneret, & Fleishman, 1999). In O*NET, job incumbents or analysts rate the importance of a large number of personal attributes for performance in each of a very large number of occupations. This approach has the additional advantage of permitting a clear differentiation among the attributes rated as important for jobs available to individuals entering the workplace with varying degrees of training and experience.

Comparing approaches

Should the three diverse approaches produce convergent findings in terms of the relative importance of the various personality attributes, we believe we would be in a position to draw relatively strong conclusions. Should they produce divergent results, an investigation into the differences would be in order.

Prospects for Personality Change

A key issue is the possibility of interventions to alter individual standing on attributes in the personality domain to prepare individuals for workplace success. Here, we elaborate on such possibilities. We note that *personality* has multiple meanings, which need to be differentiated for a meaningful discussion of the prospects for change.

Two common distinctions in the psychological literature on personality are (a) the distinction between personality as underlying disposition and personality as patterns of behavior (McAdams & Pals, 2006), and (b) the distinction between personality as identity and personality as reputation (Hogan, Hogan, & Roberts, 1996; Hogan & Shelton, 1998). In our view, the personality as behavior and personality as reputation perspectives are comparable: They reflect behavior as it can be observed and interpreted by others. A consistent pattern of timely completion of work is observable by others and contributes to a reputation for timeliness. We do differentiate between disposition and identity. *Disposition* reflects a fundamental tendency, with biological and genetic links, to certain patterns of behavior, whereas *identity* reflects self-perceptions (e.g., "I am not a detail-oriented person"). Although disposition and identity commonly converge, we hypothesize that identity is more pliable. If identity is taken as a reflection of one's goals or idealized self-image (Hogan & Shelton, 1998), one's identity could be said to change as one's goals, aspirations, or self-image change. Through a variety of mechanisms—including external interventions, behavioral modeling, and reward contingencies—a person may learn to behave in ways contrary to one's disposition (Nye & Roberts, 2013). Such behavioral change may or may not change identity (e.g., "I have become a detail-oriented person" vs. "I am not a detail-oriented person, but I have learned to act that way in work settings because that's what a job I value demands"). As we view behavior change an antecedent to identity change, we hypothesize that behavior is more readily changed than identity (Hogan & Shelton, 1998; McAdams, 2013).

In short, we see three perspectives: personality as disposition, as identity, and as behavior/reputation. We believe it is useful to differentiate among the three when addressing questions about the prospects for personality change. We see behavior/reputation as most amenable to change, and disposition as least amenable to change. Fortunately, it is behavior/reputation that is of primary concern in terms what is needed in the workplace. An organization should be indifferent to whether a given pattern of valued behavior is or is not consistent with a person's underlying disposition as long as the valued behavior is exhibited.

A variety of bodies of literature contribute to the case for the possibility for personality change. First, there is a body of literature on test–retest correlations for self-report personality measures over time. A typical range of correlation values is .40–.60 for 4- to 10-year intervals in young to middle adult samples (Nye & Roberts, 2013). Although the retest literature does not address the mechanisms behind this instability (e.g., how much change is developmental vs. intervention-based), the fact that these correlations are far from 1.0 indicates that there is considerable change in self-reported personality. Second, there is a literature on change in personality as result of work specific experiences, with the general finding that successful work experiences are associated with positive changes in social dominance, conscientiousness, and emotional stability (see Nye & Roberts, 2013, for a review). Third, Shaffer and Postlethwaite (2012) have reported meta-analytic findings showing that self-report personality measures that are contextualized (e.g., seeking descriptions of behavior at work vs. behavior in general) are markedly more predictive of job performance than are noncontextualized measures. This permits the inference that behavior at work is different from behavior

in general, which is consistent with the notion that the demands and reward contingencies of work settings influence the behavior/reputation aspects of personality. Finally, there is a large literature on interventions aimed at social and emotional competencies in K–12 education. These include attributes such as recognizing and managing emotion, establishing positive relationships, and making responsible decisions. Durlak et al. (2011) have reported a meta-analysis of 213 intervention studies with control groups, showing change in self-reports and externally observed behavior.

These various lines of evidence support the notion that even if underlying dispositions prove quite fixed, patterns of behavior reflecting an attribute are indeed changeable. Some people may find it dispositionally quite easy to keep track of multiple work tasks and projects, whereas others may realize that they are not dispositionally detail oriented. Nonetheless, if persuaded that workplace success requires organization and order, they may learn to make use of day planners, checklists, and various other aids to behave in counterdispositional, yet effective, ways in the workplace. Thus, we do not view fixed dispositions as an impediment to making use of findings that particular attributes are important at work as the basis for interventions. We also note, however, that the possibility of personality change should not be used to argue against the use of personality measures in employee selection. Firms may make a strategic choice as to the relative costs and benefits of selecting for an attribute versus attempting to increase standing on the attribute via training.

Approach 1: Personality Attributes Predicting Work Behaviors

The first step in an investigation of the predictive nature of personality attributes is the specification of the job performance domain: That is, what are the work behaviors we want to predict? Although a number of studies focus on overall job performance, current literature expands the notion of a singular index of overall job performance into three conceptually and empirically distinguishable categories, which can be drawn from other performance models (e.g., Campbell, 1990, 2012). These categories of employee behavior, all of which have been shown to be of interest to employers, are labeled task performance, organizational citizenship behavior, and counterproductive work behavior (Rotundo & Sackett, 2002).

Task performance refers to behaviors that contribute to the production of a good or provision of a service—a contribution to the organization's technical core (Borman, Bryant, & Dorio, 2010). Task performance entails role-specific behaviors that are often described as the set of activities that a worker is hired to complete, although scholars generally agree that task performance is not restricted to activities explicitly listed on a job description and can be non-job-specific (Campbell, 1990). For example, task performance for an electrician may include interpreting blueprints, running wire through conduits, or troubleshooting faulty equipment.

Organizational citizenship behavior refers to behavior that benefits an organization by contributing to its social and psychological environment (Organ, 1997). These behaviors may be relatively less tied to the specific tasks core for an occupation. For example, organizational citizenship behavior for an electrician may include persisting to complete a time-consuming job, providing personal support to coworkers, or representing one's organization in a professional manner (Borman et al., 2001; Borman & Motowidlo, 1993).

Counterproductive work behavior refers to intentional behavior that is counter to the legitimate interests of the organization or its members (Sackett & DeVore, 2001). Many work behaviors can be subsumed within this label, ranging from wasting time, to insulting coworkers, to stealing from the organization. As with organizational citizenship behavior, counterproductive behavior may not be tied to specific job tasks: Examples for an electrician could include absence or lateness to the jobsite, damaging customer property, or engaging in alcohol or drug use (Gruys & Sackett, 2003; Spector et al., 2006).

We use concepts of overall job performance (Viswesvaran, Schmidt, & Ones, 2005), task performance, organizational citizenship behavior, and counterproductive work behavior to define the criterion space—the work behaviors to be predicted by the personality constructs. One reason for focusing on the Big Five is the existence of data from many studies linking personality to each of the four job performance concepts listed earlier. For each criterion dimension, we examined meta-analyses that summarize empirical relationships between each personality factor and criterion dimension. The purpose of our analysis was to identify established patterns of relationships between the personality constructs and job performance criteria. Within each meta-analysis, we rank-ordered the Big Five in terms of the strength of their attribute–criterion correlations; we then averaged these ranks across meta-analyses. Details regarding the meta-analyses are provided in the Appendix.

Validation results for each criterion are shown in Table 1. In the table, we report mean validity coefficients drawn from the published meta-analyses, and we also report means corrected for predictor unreliability and range restriction in instances in which the authors of the meta-analysis had not done so. We found that these corrections do not affect our conclusions about the rank order of the attributes. The most striking finding is that Conscientiousness was top-ranked (or tied as top-ranked)

Table 1. Validity Information for Personality Predictors of Overall Performance, Task Performance, Organizational Citizenship Behavior, and Counterproductive Work Behavior

		Big Five personality factor				
Criterion domain and study	*N* range	Conscientiousness	Agreeableness	Emotional Stability	Extraversion	Openness to Experience
Overall job performance						
Barrick, Mount, and Judge (2001)[a]	23,225–48,100	.27 (.27)	.13 (.13)	.13 (.13)	.15 (.15)	.07 (.07)
Judge, Rodell, Klinger, Simon, and Crawford (2013)	14,321–41,939	.26 (.33)	.17 (.22)	.10 (.13)	.20 (.26)	.08 (.10)
Task performance criterion						
Judge et al. (2013)	16,738–47,729	.25 (.31)	.10 (.13)	.08 (.11)	.12 (.15)	.12 (.14)
Hurtz and Donovan (2000)[b]	1,176–2,197	.15 (.16)	.07 (.08)	.13 (.14)	.06 (.07)	−.01 (−.01)
Organizational citizenship behavior						
Judge et al. (2013)	3,892–24,034	.32 (.40)	.18 (.23)	.16 (.21)	.22 (.28)	.03 (.04)
Hurtz and Donovan (2000)[b]	2,514–4,301	.17 (.19)	.13 (.16)	.15 (.16)	.08 (.08)	.03 (.03)
Chiaburu, Oh, Berry, Li, and Gardner (2011)	6,700–14,355	.22 (.22)	.17 (.17)	.15 (.15)	.11 (.11)	.17 (.17)
Counterproductive work behavior						
Berry, Ones, and Sackett (2007)[c]	1,772–3,458	−.32 (−.40)	−.39 (−.51)	−.24 (−.31)	−.03 (−.04)	−.07 (−.08)
Salgado (2002)	1,299–6,276	−.26 (−.29)	−.20 (−.23)	−.06 (−.07)	.01 (.01)	.14 (.16)
Mean rank order of validity coefficients						
Overall job performance		1.0	3.3	3.8	2.0	5.0
Task performance		1.0	3.5	3.5	3.3	3.8
Organizational citizenship behavior		1.0	2.8	3.3	3.7	4.2
Counterproductive work behavior		1.5	1.5	3.0	4.5	4.5

Note: Lower mean rank order values indicate better prediction. Parentheses contain estimated coefficients that are fully corrected for predictor unreliability, predictor range restriction, and criterion unreliability. In cases in which the original authors did not apply these corrections, we used the artifact distributions described in the Appendix to estimate the corrected coefficients. We calculated mean rank orders using the nonparenthetical coefficients.

[a]Values are extracted from Barrick et al.'s (2001) analysis of independent samples across multiple meta-analyses. [b]Validity coefficients for Hurtz and Donovan's (2000) organizational citizenship behavior criterion are weighted means across their interpersonal facilitation and job dedication criteria. [c]Validity coefficients for Berry et al.'s (2007) counterproductive work behavior criterion are weighted means across their interpersonal deviance and organizational deviance criteria.

for all criteria—overall job performance, task performance, organizational citizenship behavior, and counterproductive work behavior. Beyond Conscientiousness, results varied by criterion. For overall job performance and task performance, Extraversion and Agreeableness ranked second and third, with Emotional Stability tied with Agreeableness for third for the task performance criterion. For organizational citizenship behavior and counterproductive work behavior, Agreeableness and Emotional Stability ranked second and third, with Agreeableness tied with Conscientiousness as top ranked for the counterproductive work behavior criterion. Thus, Conscientiousness and Agreeableness are highly ranked for all criteria, with Extraversion and Emotional Stability emerging as important for different criteria. Openness to Experience tended to exhibit the smallest relationships with each of the job performance criteria. An overall aggregation of ranks across all criteria would suggest that Conscientiousness, Agreeableness, and Emotional Stability are the attributes most strongly valued in the workplace. Note that these three attributes are often viewed as constituents of scales measuring integrity and customer service orientation. Measures of these trait combinations are regarded as having strong validation evidence for predicting performance (Ones & Viswesvaran, 2001).

We note, however, that various researchers, practitioners, and managers may differ in the priority they give to each of these criteria. Some may argue that task performance is at the core of a job, and thus this criterion dimension should be valued more highly. Rotundo and Sackett (2002) reported that the vast majority of managers in their study took this perspective, giving dominant weight to task performance. However, other managers in their sample took different perspectives, with some giving priority to counterproductive work behavior, and others weighting task performance and counterproductive work behavior equally. Here, we give findings for each criterion

domain equal attention, leaving differential weighting to the preference of the reader.

Approach 2: Personality Attributes That Employers Seek in Applicants

There is no authoritative source of which we are aware that summarizes the personality attributes employers seek in potential employees. To get a sense of the types of personality attributes that employers are interested in, we focused on a method used in virtually all hiring situations: the employment interview. Interviews are used by employers to assess a wide variety of cognitive and personality applicant attributes. We examined literature on the types of personality attributes assessed in employment interviews and, particularly, in structured interviews (Huffcutt, Conway, Roth, & Stone, 2001). Structured interviews have increased in popularity following strong evidence of their validity in selection settings (McDaniel, Whetzel, Schmidt, & Maurer, 1994).

Structured interviews typically involve the specification of a set of candidate attributes that will be evaluated. Huffcutt et al. (2001) developed a taxonomy of constructs examined in employment interviews—both high-structure and low-structure—and sought to identify the prevalence with which those constructs were rated. They examined 47 studies of interviews across a wide variety of job types. The attributes that Huffcutt et al. investigated included mental capability, knowledge and job skills, basic personality tendencies, applied social skills, interests and preferences, organizational fit, and physical attributes of candidates.

To aid in categorizing personality data into a Big Five framework for purposes of meta-analyzing personality test data, Hough and Ones (2001) developed a taxonomy that categorized attribute labels into the Big Five structure. This taxonomy has been used extensively by subsequent researchers (e.g., Dudley et al., 2006; Roberts, Chernyshenko, Stark, & Goldberg, 2005). We used this taxonomy to link the attribute labels reported by Huffcutt et al. to their most closely associated personality attributes. Both authors independently linked the attributes, with virtually perfect agreement. The few instances of disagreement were resolved through discussion, yielding final consensus on all linkages.

In Figure 1, we display data extracted from Huffcutt et al. (2001). Across both high-structure and low-structure interviews, basic personality tendencies were assessed approximately 35% of the time, more than any other attribute category. The next most frequent category across interviews was applied social skills, assessed 28% of the time. Following these personality attributes, mental capabilities were the next most frequently assessed attributes, assessed 16% of the time. This general pattern held when high-structure and low-structure interviews were analyzed separately, with minor but notable differences. For instance, in low-structure interviews, mental capability appeared to be measured slightly more frequently (≈1%) than applied social skills.

Within the personality tendencies category, Conscientiousness (47%), Emotional Stability (18%), and Extraversion (18%) were the most frequently assessed across all interviews. Within applied social skills, interpersonal skills (46%) were the most frequently assessed. Attributes such as one's proficiency relating to, working with, and cooperating with others are subsumed within interpersonal skills. These attributes relate to the Big Five Agreeableness factor.

Overall, Conscientiousness and Agreeableness emerge as the most highly sought attributes by interviewers, consistent with the results from the meta-analytic examination of personality–outcome relationships. However, attributes related to Emotional Stability, which ranked third in the meta-analytic examinations, were less likely to be included in lists of attributes rated in interviews. Attributes related to Extraversion, in contrast, were more likely to be examined in interviews.

Approach 3: Job-Analytic Data on Personality Constructs

Job analysis is a set of methods for examining both the task requirements of an occupation and the attributes of employees that are associated with success. Thus, job analysis information can be useful for identifying personality and noncognitive attributes that are important for job seekers to develop and emphasize. The DOL's O*NET contains job-analytic data that are systematically sampled from many occupations throughout the U.S. economy. O*NET data allow for occupations to be evaluated on 277 characteristics within six major categories. We obtained the O*NET 15.0 database from the DOL's website: http://www.onetcenter.org/. Our objective was to extract information from the O*NET database to examine personality attributes of employees that are rated important for job performance.

O*NET uses the Standard Occupational Classification (SOC) system to organize occupations. Currently, O*NET lists 1,102 occupations in the SOC, although more than 100 occupations do not currently have data collected. Each occupation for which data exist has been evaluated either by *job incumbents* (those who regularly perform the work), *occupational analysts* (those who have specialized training in job analysis techniques), or *occupational experts* (those who are involved in a professional association relevant to a particular occupation), or a combination of these three data sources. Evaluators rate most characteristics in terms of their importance to

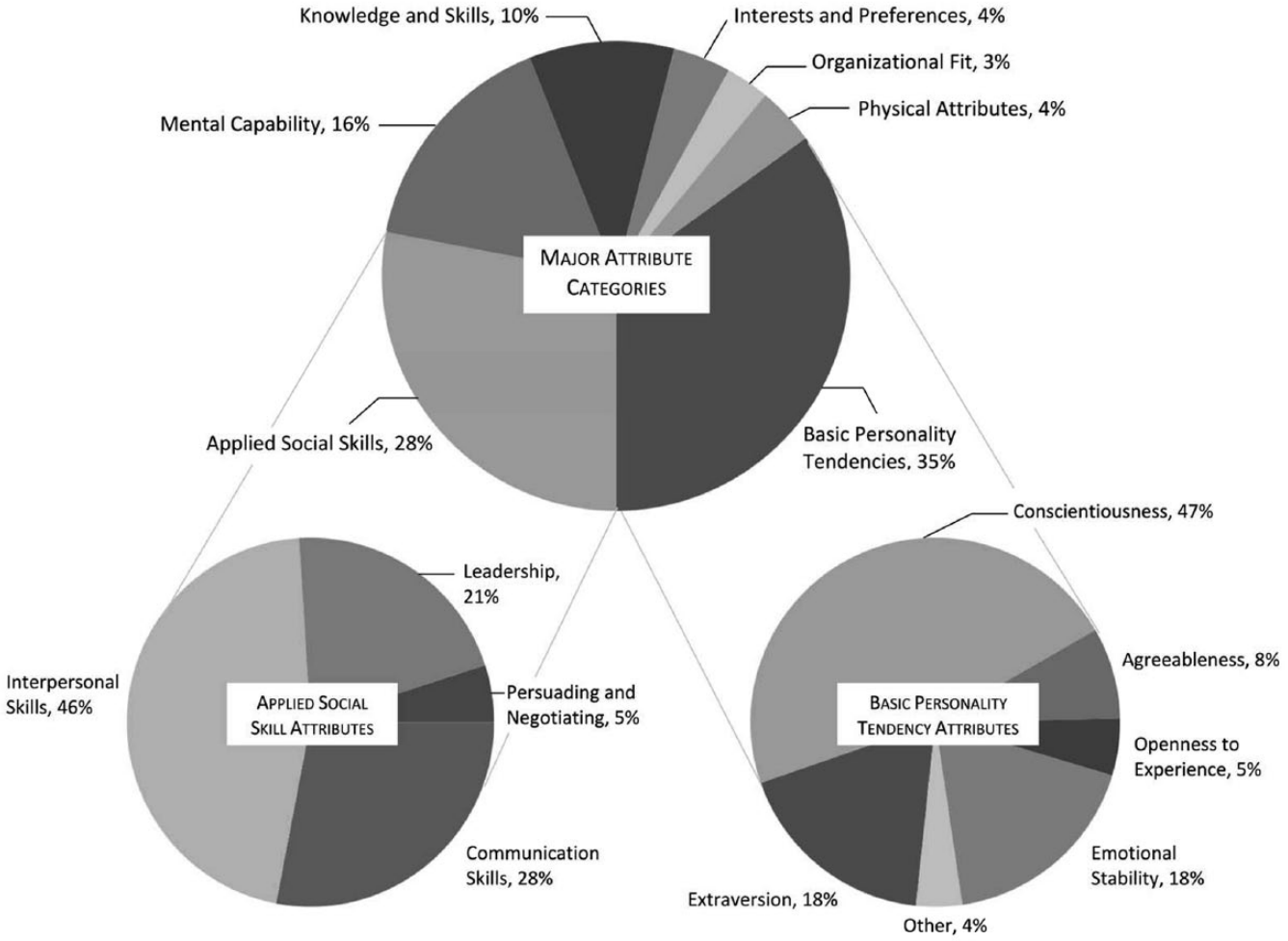

Fig. 1. Attributes most frequently assessed in employment interviews.

performance on a 5-point Likert scale ranging from 1 (*not important*) to 5 (*extremely important*). Thus, the O*NET database includes information on the importance of attributes of those who perform a particular occupation for many hundreds of occupations.

We focused on personality attributes included in two O*NET categories: Worker Characteristics (work styles such as persistence, initiative, and dependability) and Worker Requirements (skills such as social perceptiveness, negotiation, and service orientation). We used Hough and Ones's (2001) taxonomy to categorize these attributes into the Big 5 framework. We found this to be a simple matching procedure with little judgment involved, and discussion was needed to resolve differences in just two instances. We obtained importance ratings for each attribute for each occupation and averaged across occupations to estimate the importance of each attribute. However, because there are varying numbers of current incumbents in each occupation, we computed a weighted average based on the number of individuals in each occupation. Our reasoning was that our goal was to identify the attributes that were relevant to the largest number of individuals. If Attribute A was rated as most important for a large number of small *N* occupations, and Attribute B was rated as important for a smaller number of extremely large *N* occupations, we would view attribute B as more important if the total *N* across occupations was larger. We obtained employment estimates from the Occupational Employment Statistics survey (U.S. Bureau of Labor Statistics, 2009) that matched to the O*NET 15.0 database. This allowed us to weight the importance ratings from each occupation by the number of current incumbents. Because of differences in the availability of current data and differences between the U.S. Bureau of Labor Statistics and O*NET SOCs, 681 occupations were included in our database. Further, as discussions of workplace readiness may focus on different groups (e.g., those going directly from high school into the workforce vs. those continuing to higher levels of education prior to entering the workforce), we

differentiate our findings by the level of education needed for entry into an occupation. To make distinctions among occupations in terms of the amount of specialized training and experience needed, we split the occupations in our analyses according to O*NET's job zone. The job zone corresponds with typical educational requirements, although it is also assigned on the basis of vocational training (Oswald, Campbell, McCloy, Rivkin, & Lewis, 1999). There are five job-zone categories, listed next along with common exemplar occupations:

- Little or no preparation needed (less than high school). Examples include cashiers, food preparation and service workers (including fast food), and janitors/cleaners.
- Some preparation needed (high school diploma). Examples include retail salespersons; office clerks; customer service representatives; laborers; and freight, stock, and material movers.
- Medium preparation needed (high school plus). Examples include registered nurses, general and operations managers, and sales representatives.
- Considerable preparation needed (bachelor's degree). Examples include elementary, secondary, and middle school teachers; management analysts; and computer systems analysts.
- Extensive preparation needed (bachelor's degree plus). Examples include lawyers, chief executives, pharmacists, and education administrators.

Although our primary focus is on attributes broad values in the workplace, we also examined mean importance ratings separately within 22 broad occupational families. Our intent here was to examine the degree to which results vary by occupational family. For each O*NET attribute, we tallied the number of occupational families for which the attribute is (a) rated as the most important and (b) among the top three in rated importance. We also present the three most highly rated attributes for each of the 22 occupational families.

To summarize, our analytic strategy was to compute the mean importance rating across occupations for each personality attribute in O*NET, weighted by the number of current incumbents in each occupation. We conducted these analyses for each job-zone category, thus permitting a comparison of the importance of these attributes across categories, and we judgmentally linked the O*NET attributes to the Big Five. We also present findings separately for 22 broad occupational families to shed light in variation across families in attribute importance.

The set of O*NET attributes, along with their weighted mean importance ratings, are displayed in Table 2. Attributes are ranked in terms of their importance for Job Zone 2, which includes jobs for which most U.S. high school graduates would be qualified. The highest rated attribute is Dependability (4.37 across occupations), which is a key facet of the Big Five factor of Conscientiousness. Notably, Dependability is the highest rated attribute for all job zones except for Job Zone 5, in which it is slightly superseded by Integrity. Integrity is also highly rated across occupations and job zones; this is a notable finding given that preemployment tests assessing Integrity generally relate to three personality attributes: Conscientiousness, Emotional Stability, and Agreeableness (Ones & Viswesvaran, 2001).

After Dependability and Integrity, Cooperation (4.15) is the third highest rated attribute in Job Zone 2. Both Cooperation and Concern for Others (3.87; ranked 6th) are facets of the Big Five factor of Agreeableness. Fourth and fifth in the rankings are Self-Control (4.15) and Stress Tolerance (3.93), which usually are considered facets of the Big Five factor of Emotional Stability. The other attributes shown in Table 2 tend to show more differentiation across job preparation zones. For example, attributes such as Initiative, Analytical Thinking (which may have a cognitive component but also may relate to the Big Five Openness to Experience factor), and Innovation are less important at Job Zones 1 and 2 but become increasingly important as the job zone increases. Although these attributes are important for job performance for all job zones, they may have somewhat different implications for development and proficiency at various points along the vocational preparation continuum.

Although there are some minor differences, these trends are robust across job zones. Attributes important for job success tend to be similar across job zones. These findings coincide with the meta-analytic findings from Approach 1, in that attributes related to Conscientiousness, Agreeableness, and Emotional Stability are important for workforce readiness—apparently across all levels of educational and vocational preparation. Approach 2 also provided concurring findings as to Conscientiousness and Agreeableness as the two categories most sought in interviews.

Shifting focus to analyses at the level of occupational families, in Table 3 we present the 22 job families, along with the attributes appearing in the top three for each job family. Dependability stands out, as it is the highest rated attribute in 14 families and in the top three in 21 of the 22 families. Integrity, Self-Control, and Cooperation also emerge with considerable frequency.

Discussion

Our objective was to provide answers to the following question: Which personality attributes are most important in the workplace? The diversity of three bodies of

Table 2. Mean Importance Ratings for Personality Attributes by Amount of Preparation Needed for Job

		Job zone: Amount of preparation needed for the job				
Attribute	Big Five factor[a]	Little	Some	Medium	Considerable	Extensive
Skills						
Social Perceptiveness	C, A	3.0	3.1	3.4	3.5	3.7
Service Orientation	C, A	3.0	3.1	3.1	3.2	3.4
Coordination	A, Ex	2.8	3.1	3.3	3.4	3.5
Time Management	C	2.6	3.0	3.2	3.4	3.6
Persuasion	Ex	2.4	2.7	2.9	3.1	3.3
Negotiation	Ex, A	2.2	2.7	2.8	2.9	3.2
Instructing	Ex, A, C	2.3	2.6	2.8	3.3	3.5
Work styles						
Dependability	C	4.2	4.4	4.6	4.5	4.6
Integrity	C, A, ES	3.8	4.2	4.5	4.5	4.7
Cooperation	A	4.0	4.2	4.3	4.3	4.3
Self-Control	ES	4.0	4.2	4.2	4.2	4.3
Stress Tolerance	ES	3.8	3.9	4.2	4.2	4.3
Concern for Others	A	3.8	3.9	4.1	4.0	4.2
Adaptability/Flexibility	O, ES	3.5	3.8	4.1	4.3	4.2
Independence	O, C	3.4	3.8	4.0	4.0	4.3
Initiative	C	3.4	3.7	4.1	4.3	4.4
Persistence	C	3.2	3.6	4.0	4.2	4.3
Achievement/Effort	C	3.2	3.5	3.8	4.1	4.2
Attention to Detail	C	3.2	3.5	3.8	4.1	4.2
Social Orientation	Ex, A	3.4	3.5	3.7	3.7	3.9
Analytical Thinking	O	2.8	3.3	3.8	4.2	4.3
Leadership	C, Ex, O	3.0	3.3	3.8	4.0	4.2
Innovation	O	2.8	3.3	3.6	3.9	3.9

Note: Data are sorted by rating for "some preparation needed" column, which includes jobs for which most U.S. high school graduates would be qualified. Values in the table are weighted by number of current employees in each occupation. Skills data were provided by trained analysts. Work styles data were provided by job incumbents. Attribute definitions are available at http://www.onetcenter.org/content.html. Importance is rated on a 5-point scale in which 1 = *not important*, 2 = *somewhat important*, 3 = *important*, 4 = *very important*, and 5 = *extremely important*.
[a]Big Five Factor labels are C = Conscientiousness, A = Agreeableness, ES = Emotional Stability, Ex = Extraversion, and O = Openness to Experience.

literature, which have not been well integrated in the past, provides insight into answering this question. The three yield convergent evidence that attributes related to Conscientiousness and Agreeableness are important for workforce readiness for a variety of occupations and performance criteria. Emotional Stability emerged as highly important in meta-analyses in which organizational citizenship behavior and counterproductive work behavior were used as criteria, as well as in our analysis of O*NET data. On the other hand, Extraversion displaced Emotional Stability in meta-analyses in which overall job performance and task performance were used as criteria, as well as in our analyses of interview data. It is most useful to see reasonable convergence among what validation research indicates as the most important attributes, the set of attributes valued by employers, and the attributes rated most highly in large-scale, job-analytic work. These findings suggest that, at least in terms of interviews, employers often focus on attributes that are both rated as important for and predictive of successful performance. A second conclusion, from an alternate perspective, is that it appears that applicants would do well to develop and emphasize these characteristics in the job search process.

We note that although Emotional Stability emerged as an important category in the meta-analytic validity research and in the large-scale, job-analytic research, it was not a highly rated attribute category in the structured interviews. It is possible that designers of structured interviewing system shied away from this category not because the category is seen as unimportant at work, but rather because they perceived those attributes as either difficult to assess via interview or as an uncomfortable topic to raise with candidates in interviews. This speculation awaits empirical work; for now, all we can do is note the importance of the Emotional Stability category in our other lines of inquiry.

Table 3. Top Ranked Personality-Based Work Styles for 22 Job Families Drawn From the O*NET Database

	O*NET work style attribute		
Job family	Top ranked	Second ranked	Third ranked
Computer and Mathematical	Analytical Thinking	Dependability	Cooperation
Architecture and Engineering	Analytical Thinking/ Dependability (Tie)	Integrity	Initiative
Food Preparation and Serving Related	Cooperation	Dependability	Self-Control
Arts, Design, Entertainment, Sports, and Media	Dependability	Adaptability/Flexibility	Initiative/Stress Tolerance (Tie)
Health Care Support	Dependability	Concern for Others	Integrity
Building and Grounds Cleaning and Maintenance	Dependability	Cooperation	Self Control
Construction and Extraction	Dependability	Cooperation	Self Control
Production	Dependability	Cooperation	Integrity
Office and Administrative Support	Dependability	Integrity	Cooperation
Installation, Maintenance, and Repair	Dependability	Integrity	Cooperation
Management	Dependability	Integrity	Leadership
Education, Training, and Library	Dependability	Integrity	Self Control
Sales and Related	Dependability	Integrity	Self Control
Personal Care and Service	Dependability	Self Control	Integrity
Farming, Fishing, and Forestry	Dependability	Self Control	Independence
Transportation and Material Moving	Dependability	Self Control	Integrity
Life, Physical, and Social Science	Integrity	Analytical Thinking	Dependability
Business and Financial Operations	Integrity	Dependability	Analytical Thinking/Cooperation (Tie)
Legal	Integrity	Dependability	Analytical Thinking
Health Care Practitioners and Technical	Integrity	Dependability	Concern for Others
Community and Social Services	Self Control	Concern for Others	Integrity
Protective Service	Self Control	Stress Tolerance	Dependability

Note: When calculating rankings, importance ratings were weighted according to the number of employees in a given occupation.

We note that our primary focus is on identifying attributes most widely valued in the workplace. Our finding that Conscientiousness is on average the most highly valued attribute certainly does not mean that that attribute is most highly valued for all occupations or is most highly valued by all individual interviewers even within an occupation within which that attribute is identified as generally most highly valued. Our primary focus on the most generally valued attributes is particularly useful for designing broad interventions (e.g., addressing questions such as "should a school system wish to invest in a program aimed at one or more soft skills, which of these skills should receive top priority?"). In contrast, consider a given individual who aspires to a career in a particular occupation (e.g., a police officer, a laboratory scientist). Here, occupation-specific information would be useful, and a student might work with a guidance counselor to identify occupation-specific information (e.g., O*NET attribute ratings for that occupation). For example, in their meta-analysis, Vinchur, Schippmann, Switzer, and Roth (1998) focused exclusively on the prediction of performance in sales occupations. We did not include the study in our analysis because of the focus on one occupational group. Nonetheless, we call attention to their results to illustrate that the pattern of findings for a particular occupation may differ somewhat from our overall findings: Vinchur et al. reported that Conscientiousness is the top-ranked predictor, followed in order by Extraversion (perhaps not surprising in a sales environment), Openness to Experience, Emotional Stability, and Agreeableness. As another example, though not on the basis of a meta-analytic strategy, Dunn, Mount, Barrick, and Ones (2005) examined the importance managers gave to Big Five dimensions in a policy capturing task. Although Conscientiousness emerged as the most important attribute across jobs, differences were found for specific occupations (e.g., Openness to Experience was most important for news reporters; Extraversion was most important for insurance sales agents). In the O*NET data we report, although the Dependability facet of Conscientiousness was among the three most important attributes for 21 of the 22 job families examined, it was

not among the top attributes for the Community and Social Services job family (in which Self-Control and Concern for Others were top rated). Thus, decisions about workforce readiness for a specific occupation should make use of available data for that occupation, in addition to the broad results we report here. That said, given that occupational plans often change, even the student with a specific occupational aspiration would be well-advised to attend to information about broadly valued attributes.

An additional consideration regarding Approach 1 is that the meta-analytic validity data are drawn almost exclusively from settings in which personality attributes were assessed with questionnaire methods. Many organizations use preemployment assessments other than personality questionnaires that tap Big-Five-related characteristics. Examples of such assessment methods include situational judgment tests, interviews, work simulations, collection of biographical data, or evaluation of applicant accomplishment narratives. In many cases, these methods are associated with substantial validity coefficients (summarized by Schmidt & Hunter, 1998), providing further support for the notion that measures of personality attributes are important in the workplace. The reason that we cannot incorporate these assessment methods directly into our current study, beyond Huffcutt et al.'s (2001) analysis, is that construct validity is difficult to determine in any summary fashion: These methods are used to assess a complex set of individual attributes both inside and outside of the Big Five domain and are rarely designed to measure each Big Five attribute with comparable fidelity. As a result, the current literature base does not permit comparison of the relative validity of personality attributes measured across these methods, as the methods are inextricably tied to the set of attributes they are intended to target. We construe this feature as more of a point of interest in the state of our science rather than a limitation: Future researchers could explore the degree to which the choice of measurement method can influence inferences about the relative importance of personality attributes in the workplace.

Although personality is often viewed as a stable individual difference characteristic, we differentiate between personality as underlying disposition, which may indeed be very stable, and personality as patterns of behavior, for which we review multiple lines of evidence suggesting that change is indeed possible. Extensive research on school-based interventions suggests that behavior change is a result of interventions aimed at a wide variety of attributes in the personality domain (Durlak et al., 2011). The present research serves as a useful complement, as it suggests the most useful target attributes for future interventions. We believe these findings are important for various constituencies. First, individuals interested in evaluating their readiness for various workplace settings may find the results as to the most broadly valued attributes useful for self-assessment and for self-directed or counselor-directed change efforts. Knowledge of what is valued and rewarded is a key driver of change. Individuals with as-yet undeveloped career plans may find it most useful to focus on our overall findings, whereas individuals with a more specific focus may find it most useful to focus on occupation-specific O*NET data. Second, developers of K–12 interventions aimed at improving workplace readiness may make use of these findings to choose the target attributes for interventions. Absent resources for individually tailored interventions, a focus on attributes identified as most broadly valued would appear to have the most promise. Third, we have observed universities offering personal and professional development courses to augment traditional academic instruction. These may include formal assessment, via mechanisms such as self-report personality measures and peer evaluations. A pairing of information about current standing on attributes of interest with information about what organizations value and reward may be a most useful developmental experience. Fourth, our findings may be useful for organizations working with job seekers to aid in making them more attractive to employers. Research on the most effective approaches for behavior change on the particular attributes valued in the workplace would be most welcome.

It is important to put our findings in a broader perspective. We focused on the importance of personality attributes in the workplace. However, there are other individual difference attributes that contribute to decisions about occupational entry and to success on the job, such as abilities and interests. We call attention to a series of articles in this journal—including Nye, Su, Rounds, and Drasgow (2012); Schmidt (2011); Valla and Ceci (2011); von Stumm, Hell, and Chamorro-Premuzic (2011); as well as an integrative commentary by Schmidt (in press)—that highlight the role of this broader set of constructs.

In conclusion, our findings provide robust evidence that attributes related to Conscientiousness and Agreeableness are highly important for workforce readiness across a variety of occupations that require a variety of training and experience qualifications. Our various lines of evidence differ as to the relative importance of Extraversion and Emotional Stability, with Emotional Stability more important in our most wide-reaching data, namely, the O*NET analyses.

Appendix

Details of meta-analyses in Approach 1

To remedy interpretational issues with combining results across meta-analyses, we imposed somewhat strict criteria for meta-analyses to include in our review (see also Barrick, Mount, & Judge, 2001). First, we included only analyses in which all of the Big Five factors were examined in comparison with one or more of the job performance criteria. This allowed for a within-study comparison of the magnitude of each correlation between personality factors and performance. Second, we focused on broad meta-analyses in which researchers cut across occupations, and we excluded meta-analyses in which researchers focused on a single occupational family (e.g., sales). This reflects our primary focus on identifying attributes broadly valued in the workplace. Third, we avoided incorporating multiple meta-analyses that were largely based on the same set of primary studies by examining the reference lists in the selected meta-analyses. In the case of overall job performance, Barrick et al.'s (2001) analysis is a synthesis of eight prior meta-analyses, and the authors reported that the data sets were nonoverlapping. For all other pairs of meta-analyses in which a common criterion was examined, we examined the reference lists of each meta-analysis and concluded that overlap is minimal. Fourth, in lieu of combining correlations across meta-analyses within a performance domain, we ranked the personality factors on the basis of their mean correlations within each meta-analysis. The mean rank order value (across meta-analyses) was cumulated and reported for each performance dimension. Recognizing that rank order is a coarse metric, we also report meta-analytic validity coefficients from each study that met our inclusion criteria.

When using meta-analyses, some researchers apply statistical corrections (e.g., correcting for unreliability in the predictor and criterion measures, correcting for restriction of range), whereas others do not. Should there be substantial differences in range restriction or in error of measurement across the Big Five, these differences could confound our attempt to interpret rank order. We examined this by correcting all findings for both range restriction and predictor unreliability in instances in which the authors of the meta-analyses had not done so. We relied on meta-analytic artifact distributions from the literature. For range restriction, Salgado (2002) has offered estimates of the degree of direct range restriction for each Big Five trait. Differences are not large: Ratios of restricted to unrestricted standard deviations range from .76 to .83. For measurement error, Viswesvaran and Ones (2000) and Salgado (2002) have provided reliability estimates. We averaged the estimates from these two sources. Again, differences are not large, with reliabilities for the Big Five ranging from .74 to .80. We corrected all meta-analytic mean validities that had not been corrected for these artifacts using these values to put all validities on a common footing (e.g., to permit comparisons controlling for differences in reliability or range restriction).

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