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Revisiting the Work Styles Domain of the O*NET Content Model

Final Report

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Revisiting the Work Styles Domain of the O*NET Content Model

Introduction

The Occupational Information Network (O*NET) is a comprehensive system developed by the U.S. Department of Labor that provides information for over 900 occupations within the U.S. economy. This information is maintained in a comprehensive database ([National Center for O*NET Development, 2024](#)). To keep the database current, the National Center for O*NET Development (hereafter referred to as “the Center”) is involved in a continual data collection process to identify and maintain current information on the characteristics of workers and occupations. The Human Resources Research Organization (HumRRO) has supported the Center’s efforts to maintain the database for years. The purpose of this project was to revisit and update the Work Styles portion of the [O*NET Content Model](#).

Work Styles constitute one type of worker attribute in the Content Model. To date, O*NET has defined Work Styles as “personal characteristics that are work- and job-related” (e.g., Cooperation, Dependability, Attention to Detail; Borman et al., 1999, p. 213). They are essentially normal (non-clinical) personality traits that are relevant to jobs, occupations, and the world of work more broadly. O*NET’s Work Styles were originally developed by [Borman and colleagues \(1995\)](#) based on a review of relevant literatures (e.g., Industrial-Organizational [I-O] psychology, personality and individual differences), with a focus on content, documenting existing taxonomies, structure and internal relations, and the job- and work-relatedness of personality traits. Based on this review, Borman and colleagues derived six broad, higher-order Work Style dimensions and 17 more specific, lower-order Work Style dimensions that constitute the broader dimensions. Work Style ratings within O*NET can help users identify important personal characteristics for occupations that may be of value in contexts such as personnel selection, employment counseling, and self-directed job search (Borman et al., 1995). Work Styles remain an important part of the O*NET Program’s support for educational planning, career exploration, career guidance, job search, and organizational placement.

O*NET’s Work Styles have changed little in the nearly 30 years since their initial formulation, with only a single round of minor updates made by [Hubbard et al. \(2000\)](#). Since their introduction into O*NET, however, there has been enormous growth in scholarship related to personality, coupled with more widespread recognition of the critical importance of personality to the workforce and economy (e.g., Deming, 2022; Kautz et al., 2014). In light of these observations, the Center aimed to revisit the Work Styles portion of the O*NET Content Model and update it as needed based on contemporary developments. Beyond revisiting the composition of the Work Styles domain as part of this work, the Center also expressed interest in revisiting the approach to populating Work Styles within the O*NET Database. Specifically, the Center expressed interest in identifying potential options for rating Work Styles that (a) do not involve incumbents or occupational experts,¹ (b) result in more variability among occupations (relative to the current importance ratings), and (c) take into consideration the need for O*NET Work Styles data to support multiple potential use cases (e.g., educational planning, career exploration, career guidance, job search, and organizational placement).

The remainder of this report summarizes our efforts to revisit and update the Work Styles portion of the O*NET Content Model. In the process of doing so, we also developed an

¹ The Center’s goal in the future is to potentially identify a superior source for this particular type of data that also reduces the public burden of the O*NET Data Collection Program.

alternative rating scale for Work Styles, which, as we note later, may serve as a foundation for future work aimed at updating Work Style ratings for occupations in O*NET. It is important to note that our working hypothesis at the outset of this effort was that we would not be completely changing the Work Styles taxonomy. Most of the current Work Styles are well grounded in the Big Five personality model, which to this day remains a dominant (if not the dominant) model for describing personality (Sackett & Walmsley, 2014). Rather, we envisioned revising the set of Work Styles and their general framing in a way that would help ensure they reflect developments in personality research that have emerged since the Work Styles were originally formulated in the mid-1990s. We envisioned such revisions potentially involving (a) adding new Work Styles that are consistent with contemporary taxonomies of personality, yet not clearly represented in the current set of Work Styles; (b) removing Work Styles that do not fall within the realm of contemporary taxonomies of personality, or that may be more conceptually aligned with other domains of the O*NET Content Model; and (c) splitting or combining existing Work Styles in a manner that makes their mapping to contemporary taxonomies of personality clearer.

The approach we took to identifying revisions to Work Styles involved (a) reviewing the relevant academic literatures to identify personality dimensions appearing in published, contemporary taxonomies of personality, (b) using natural language processing (NLP) techniques to facilitate consolidation and clustering of personality dimensions from those taxonomies, (c) comparing the clusters of personality dimensions to current Work Styles and assessing areas of overlap and uniqueness, and (d) using insight from the aforementioned activities to develop a draft set of revised Work Styles for further evaluation. With the draft Work Styles in hand, we then engaged in a linkage exercise with personality and job analysis subject matter experts (SMEs) to evaluate whether the draft revised Work Styles were indeed related to the world of work (rather than simply being descriptive of one's personality). Lastly, we used the results of that exercise to make recommendations for a final set of revised Work Styles to include in the O*NET Content Model.

The remainder of this report details the efforts above and is organized into four sections that follow:

- Overview of Current Work Styles and Key Developments in the Personality Literature
- Developing a Draft Set of Revised Work Styles
- Linking Draft Revised Work Styles to O*NET Work Activities and Work Contexts
- Finalizing Revised Work Styles for the O*NET Content Model

Overview of Current Work Styles and Key Developments in the Personality Literature

As noted in the Introduction, the Work Styles in O*NET have been largely unchanged since their inception in the mid-1990s. The single round of updates made by [Hubbard et al. \(2000\)](#) was minor and consisted of small edits to the definitions of several dimensions and elimination of the lower-order “Energy” dimension. Table 1 lists the current O*NET Work Styles as they existed at the beginning of this effort in 2024 along with their descriptions.

As shown in Table 1, Work Styles are organized in terms of higher-order and lower-order dimensions, with the latter being the only dimensions on which importance ratings are gathered for occupations and published to the O*NET Database ([National Center for O*NET](#)

[Development, 2024](#)). Only five of the Work Styles are what one might view as “true” higher-order dimensions (i.e., dimensions that have at least two associated lower-order dimensions). “Social Influence” was originally a higher-order dimension but is no longer, owing to the elimination of the lower-order Energy dimension in the 2000 revision. Consequently, Social Influence is essentially isomorphic with the lower-order Leadership dimension. Additionally, from its inception, the “Independence” dimension never possessed any affiliated lower-order dimensions, and effectively functions as a lower-order dimension in that occupational importance ratings are available for it in the O*NET Database.²

Table 1. Higher-Order and Lower-Order Work Style Dimensions in the O*NET Content Model

O*NET Content Model ID	Dimension Name	Dimension Description	Data Level	Big Five
1.C.1	Achievement Orientation	Job requires personal goal setting, trying to succeed at those goals, and striving to be competent in own work		
1.C.1.a	Achievement/Effort	Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks	X	C
1.C.1.b	Persistence	Job requires persistence in the face of obstacles	X	C
1.C.1.c	Initiative	Job requires a willingness to take on responsibilities and challenges	X	C
1.C.2	Social Influence	Job requires having an impact on others in the organization and displaying energy and leadership		
1.C.2.b	Leadership	Job requires a willingness to lead, take charge, and offer opinions and direction	X	C, Ex, O
1.C.3	Interpersonal Orientation	Job requires being pleasant, cooperative, sensitive to others, easy to get along with, and having a preference for associating with other organization members		
1.C.3.a	Cooperation	Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude	X	A
1.C.3.b	Concern for Others	Job requires being sensitive to others' needs and feelings and being understanding and helpful on the job	X	A
1.C.3.c	Social Orientation	Job requires preferring to work with others rather than alone and being personally connected with others on the job	X	A, Ex

² Occupational importance ratings for all 16 lower-order Work Style dimensions (including Independence) are available in the O*NET Database. These Work Styles are rated with respect to their importance for performance in a given O*NET occupation by incumbents or occupational experts (with the type of raters varying across occupations). The rating scale ranges from 1 (Not Important) to 5 (Extremely Important). A rating scale for “level” originally accompanied the importance scale but was eliminated in the 2000 revision.

Table 1. (Continued)

O*NET Content Model ID	Dimension Name	Dimension Description	Data Level	Big Five
1.C.4	Adjustment	Job requires maturity, poise, flexibility, and restraint to cope with pressure, stress, criticism, setbacks, personal and work-related problems, etc.		
1.C.4.a	Self-Control	Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations	X	ES
1.C.4.b	Stress Tolerance	Job requires accepting criticism and dealing calmly and effectively with high-stress situations	X	ES
1.C.4.c	Adaptability/Flexibility	Job requires being open to change (positive or negative) and to considerable variety in the workplace	X	ES, O
1.C.5	Conscientiousness	Job requires dependability, commitment to doing the job correctly and carefully, and being trustworthy, accountable, and attentive to details		
1.C.5.a	Dependability	Job requires being reliable, responsible, and dependable, and fulfilling obligations	X	C
1.C.5.b	Attention to Detail	Job requires being careful about detail and thorough in completing work tasks	X	C
1.C.5.c	Integrity	Job requires being honest and ethical	X	A, C, ES
1.C.6	Independence	Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done	X	C, O
1.C.7	Practical Intelligence	Job requires generating useful ideas and thinking things through logically		
1.C.7.a	Innovation	Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems	X	O
1.C.7.b	Analytical Thinking	Job requires analyzing information and using logic to address work-related issues and problems	X	O

Note. Big Five = Mappings of lower-order O*NET Work Styles to the Big Five personality factors are from Sackett and Walmsley (2014). A = Agreeableness. C = Conscientiousness. ES = Emotional Stability. Ex = Extraversion. O = Openness to Experience. Higher-order dimensions are highlighted in light grey. Work Styles for which occupational importance ratings are available are denoted by an "X" in the Data Level column. Source:

https://www.onetcenter.org/dictionary/28.3/excel/content_model_reference.html

When formulating the original Work Styles, Borman and colleagues accounted for the growing consensus in the 1990s that the Big Five model was the preeminent means of classifying personality traits. Consequently, it is not surprising that each Work Style can be mapped to one or more of the Big Five traits (Sackett & Walmsley, 2014). As shown in the final column of Table 1, Sackett and Walmsley (2014) mapped 11 of 16 lower-order Work Styles to a single Big Five trait, with the remainder mapped to multiple Big Five traits.

Links between relatively specific personality traits and multiple Big Five traits are not uncommon due to the long-standing existence of the concept of compound traits (Hough & Schneider, 1996) and the observation of cross-loadings of facet-level traits on multiple broad traits (Parker et al., 1993). Nonetheless, the fact that some lower-order Work Styles can be traced to several Big Five traits yet shown as nested within a single-higher order Work Style dimension can complicate not only interpretations of those Work Styles themselves, but also theoretical understanding of how they and why they are related to work-relevant criteria.

Another challenge to the interpretability of the current Work Styles, vis-à-vis contemporary personality models, is the “elevation” of Achievement Orientation to a higher-order dimension that is separate from Conscientiousness. Traditionally, Achievement Orientation (and its lower-order dimensions) is classified as being an element of Conscientiousness (e.g., Stanek & Ones, 2018). Additionally, while the lower-order dimensions of Practical Intelligence appear to roughly correspond to the “Openness” and “Intellect” aspects of Openness to Experience (DeYoung et al., 2014), the definition of “Analytical Thinking” nonetheless suggests it may be better construed as a cognitive ability than a personality trait.

Developments in Understanding the Structure of Personality Traits

The current Work Styles rest on the academic literature as it existed nearly 30 years ago. Since 1995, thousands of papers have been published dedicated to refining taxonomies of personality traits (and creating new ones), exploring the structure of the constructs comprising those taxonomies, and investigating relationships between their constituent traits and important workplace variables. The Big Five taxonomy, which heavily influenced the structure of the Work Styles dimensions, is now well understood (Widiger, 2017), including the structure of dozens of dimensions of greater specificity than those of the five broad factors (e.g., MacCann et al., 2009; Stanek & Ones, 2018, 2023; Woods & Anderson, 2016). Many of these specific dimensions have direct implications for potentially reconceptualizing the lower-order Work Styles dimensions, as an understanding of the nature and structure of “narrower” personality traits was in its relative infancy when the Work Styles were developed.

Although the Big Five taxonomy is firmly established as the predominant model of personality traits, there remains consistent concern that the model is missing important elements (e.g., Feher & Vernon, 2021; Saucier & Srivastava, 2015). Indeed, this concern is implicit in Borman and colleagues’ (1995) inclusion of more than five broad factors in their original taxonomy. For example, prominent rival models of personality emphasize a continuum of traits concerned with concepts such as fairness, morality, and empathy, which are arguably not adequately represented in the Big Five (Hough et al., 2015). The HEXACO taxonomy (Ashton et al., 2014) is similar to the Big Five but includes a sixth factor, Honesty-Humility, which can be viewed as the positive end of a continuum that on the negative end reflects “dark,” maladaptive traits such as Machiavellianism, narcissism, moral disengagement, and spitefulness (Moshagen et al., 2018). We revisit this literature in more detail in a later section of this report, where we discuss compiling dimensions from personality taxonomies that emerged following the original O*NET Work Styles in the mid-1990s (see *Step 1: Review the Post-1995 Personality Taxonomy Literature*).

Developments in Understanding the Importance of Personality at Work

The explosion of research with respect to the structure of personality has been accompanied by exponential growth in the research literature exploring the job- and work-relatedness of personality traits. Where Borman et al. (1999) could only cite a few meta-analyses linking personality to work variables (e.g., Barrick & Mount, 1991; Ones et al., 1993), there are now dozens that have consistently documented meaningful associations between personality traits at varying levels of specificity and workplace variables including job performance (He et al., 2019), career success (Ng et al., 2005), job satisfaction (Steel et al., 2019), turnover (Zimmerman, 2008), organizational commitment (Choi et al., 2015), and leadership (Bono & Judge, 2004). Furthermore, many meta-analyses summarizing relations between various personality traits and a variety of workplace outcomes have now been published resulting in the appearance of second-order meta-analyses (e.g., Wilmot & Ones, 2019; Wilmot et al., 2019). The literature has grown to the point where Zell and Lesick (2022) could summarize over 30 meta-analyses examining relationships between personality traits and job performance and Wilmot (2017) could summarize over 150 meta-analyses examining the relationship between the Big Five and work and non-work variables.

Table 2 summarizes results of the three second-order meta-analyses that we are aware of to date that examined associations between the Big Five traits and various types of job performance (He et al., 2019; Wilmot, 2017; Zell & Lesick, 2022). As shown in Table 2, across these investigations the pattern of results is clear: Among the five traits Conscientiousness was clearly the strongest predictor of overall job performance across all jobs, with coefficients ranging from .15 to .20. For Zell and Lesick (2022) and Wilmot (2017), Emotional Stability and Extraversion were the next strongest predictors of overall performance, having nearly identical effect sizes (.13 & .15). He et al. (2019) deviated somewhat from this trend, with the correlation for Agreeableness being larger than that for Extraversion (.09 vs. .06). Finally, across all three studies the orderings of Agreeableness and Openness for predicting overall job performance were less stable. Where He et al (2019) and Wilmot (2017) found Agreeableness to be more predictive of overall job performance than Openness, Wilmot (2017), Zell and Lesick (2022) found identical values for the two traits (.11).

Table 2. Second-Order Meta-Analytic Correlation Estimates between Each Big Five Dimension and Overall Job Performance

Second-Order Meta-Analysis	Agreeableness	Conscientiousness	Emotional Stability	Extraversion	Openness
He et al. (2019)	.07	.15	.09	.06	.03
Wilmot (2017)	.10	.19	.13	.14	.07
Zell & Lesick (2022)	.11	.20	.15	.14	.11

Note. Numbers are mean sample-size weighted observed correlations. We present only uncorrected correlations due to differing correction methods across the three papers. From He et al. (2019, p. 7), Wilmot (2017, p. 148), and Zell Lesick (2022, p. 7).

Focusing solely on associations between the Big Five traits and overall job performance can obscure nuances in the relationship between personality and effective behavior in the workplace (Johnson, 2001). Although both He et al. (2019) and Wilmot (2017) found that Conscientiousness remained the strongest predictor even when examining narrower varieties of performance such as task/technical performance, organizational citizenship behavior (OCB), and counterproductive

work behavior (CWB), the relative strength—and occasionally even direction—of the other Big Five for predicting such criteria was more variable. For example, the two second-order meta-analyses found Agreeableness, Openness to Experience, and Emotional Stability to be approximately equally predictive of global OCB and to a degree greater than Extraversion. Surprisingly, He et al. (2019) found effectively no association between Openness and task performance (-.01) and a more substantial *positive* true score correlation between Openness and CWB (.19), although these were not uncovered by Wilmot (2017).

Focusing solely on broad performance criteria can potentially obscure important differences in the ability of personality traits to forecast narrower criteria, and can also mask variability in associations between facet-level attributes and outcomes (Judge et al., 2013). Of the three second-order meta-analyses discussed, only He et al. (2019) investigated facets of the Big Five, but their results bear out the need to go beyond broad domains when examining the impact of personality in the world of work. While Conscientiousness may be indisputably the strongest predictor of job performance among the Big Five, there is still striking variability in how well its constituent facets can forecast performance, with corrected correlations with overall job performance ranging from .19 and .20 (Achievement Orientation, Self-Discipline) to .10 and .13 (Deliberation, Order). Similarly, the Values facet of Openness, the broad trait that typically shows the weakest associations with performance, predicts global performance as well as the latter facets of Conscientiousness (.12), even while its Fantasy facet is slightly negatively related (-.03).

Finer-grained distinctions in the ability of personality traits to predict job performance also emerge when the focus shifts from all occupations to specific types of occupations. Large-scale studies of this type, let alone second-order meta-analyses, are relatively rare, given the challenges of gathering enough data across a wide range of occupations to allow for comparing associations between personality and overall performance between occupational groups. Nonetheless, Wilmot and Ones (2021) were able to make such comparisons across nine diverse occupational categories (e.g., clerical, healthcare, management, military) in their second-order meta-analysis. Table 3 summarizes meta-analytic correlation estimates between each Big Five personality dimension and overall job performance by occupational category reported by Wilmot and Ones (2021).

Largely consistent with findings for all jobs, across all but one of the occupational categories (professional), Conscientiousness was the strongest predictor of job performance. Similarly, Openness was also often the weakest predictor of performance across occupations – except in the case of professionals, where it was the strongest. Additionally, Openness, along with Agreeableness, exhibited the greatest variability in its capacity to predict job performance. Where the uncorrected correlation between Openness and performance among professionals was .13, it was minimally related to success in skilled/semiskilled and sales occupations ($r_s = .02$). Agreeableness was a relatively good predictor of performance in healthcare occupations ($r = .16$) but a dismal one in sales and professional occupations ($r_s = .02$). Extraversion exhibited the least variability in its prediction of overall performance, with correlations of .07 - .09 for all occupational categories except for two that were near-zero (professional, skilled/semi-skilled; $r_s = .02$). Emotional Stability exhibited somewhat more variability across the occupations, proving to be a particularly good predictor of performance in military jobs ($r = .16$) but a relatively poor predictor across professional and management occupations ($r_s .03$ & $.04$, respectively).

Table 3. Meta-Analytic Correlation Estimates between Each Big Five Dimension and Overall Job Performance by Occupational Category (Wilmot & Ones, 2021)

Occupational Group	Agreeableness	Conscientiousness	Emotional Stability	Extraversion	Openness
Clerical	.11 (.18)	.16 (.25)	.11 (.17)	.09 (.14)	.11 (.17)
Customer service	.07 (.11)	.14 (.23)	.08 (.13)	.08 (.13)	.07 (.11)
Healthcare	.16 (.25)	.21 (.33)	.06 (.09)	.07 (.11)	.01 (.02)
Law enforcement	.06 (.10)	.15 (.23)	.09 (.14)	.07 (.10)	.04 (.06)
Management	.03 (.05)	.11 (.17)	.04 (.07)	.09 (.14)	.05 (.08)
Military	.06 (.10)	.19 (.31)	.16 (.25)	.08 (.13)	.10 (.16)
Professional	.02 (.04)	.09 (.14)	.03 (.04)	.02 (.02)	.13 (.20)
Sales	.02 (.03)	.17 (.27)	.06 (.10)	.09 (.14)	.02 (.03)
Skilled/semiskilled	.05 (.08)	.15 (.24)	.09 (.14)	.02 (.04)	.02 (.03)

Note. Numbers in parentheses are second-order, grand mean population correlations corrected for unreliability in the predictor and the criterion. Numbers outside of the parentheses are mean sample-size weighted observed correlations. From Wilmot and Ones (2021), Table 1, p. 4.

Concurrent with the growth of personality-work outcome meta-analyses, there has been growth in research areas and techniques that have advanced theoretical understanding of *why* personality traits are related to workplace variables. Emerging from the I-O psychology literature, trait activation theory (TAT; Tett & Burnett, 2003; Tett & Guterman, 2000; Tett et al., 2021; see also Judge & Zapata, 2015) posits that personality is selectively “activated” by various types of situational features (e.g., constraints, demands, facilitators), the presence or absence of which can strengthen, weaken, or entirely negate the relationship between individual traits and individual criteria. Taken as a whole, these features determine whether a given trait is “relevant” to a given situation or task. For example, we would expect a very weak (or zero) association between individuals’ standing on Cooperation and their performance on tasks that are accomplished alone because the tasks make minimal to no demands on the degree to which individuals cooperate with each other to accomplish them. As we note later in this report, insights from the TAT literature had a fundamental impact on our proposed approach to scaling Work Styles and evaluating linkages between the revised Work Styles and the world of work.

Developing a Draft Set of Revised Work Styles

Our approach to developing a draft set of revised Work Styles consisted of the following four steps that we detail in the sections that follow.

- Step 1: Review the Post-1995 Personality Taxonomy Literature
- Step 2: Compile Personality Dimensions from Taxonomies
- Step 3: Embed and Cluster Analyze Personality Dimensions
- Step 4: Compare Clusters to Current Work Styles and Develop Draft Work Styles

Note that upon developing the draft revised Work Styles, we took additional steps to evaluate their relevance to the world of work prior to finalizing any decisions about which of the draft Work Styles to ultimately recommend for inclusion in the O*NET Content Model (see the *Linking Draft Revised Work Styles to O*NET Work Activities and Work Contexts* section later in this report).

Step 1: Review the Post-1995 Personality Taxonomy Literature

We conducted a thorough literature review to identify personality taxonomies that had arisen since 1995, when the initial set of Work Styles was developed (Borman et al., 1995). Our review encompassed both the workplace and “basic” personality and individual differences literatures. We used two major strategies. First, we initially relied on our existing knowledge at the inception of the project to identify prominent taxonomies that had been introduced during this timeframe, drawing from primary studies, major meta-analyses, review papers, and chapters. After cataloging the contents of these taxonomies, we used a “backward snowballing” approach (Card, 2011), extracting references to prior work with taxonomic implications (e.g., inventories, less comprehensive prior taxonomies) and used those primary sources to add to our working list of taxonomies or identify yet more possible sources of information. Second, we adopted a “forward search strategy” by reviewing Borman et al. (1995) and its final version (Borman et al., 1999) to identify the sources they used to develop their Work Styles and investigate whether these sources had been updated, superseded, substantially expanded, or led to additional work not uncovered by the backward search.

Given the vastness of the literatures to be surveyed, we introduced six criteria to focus our search on sources most likely to yield workplace-relevant information:

- 1) We only cataloged the contents of taxonomies that attempted to be comprehensive in the traits they encompassed rather than focusing on a single personality domain (e.g., facets of openness, Type A).
- 2) We exclusively focused on personality traits and excluded taxonomies of allied constructs (e.g., interests, social-cognitive attributes, skills, competencies, and values).
- 3) We excluded taxonomies that did not have definitions of their traits or whose definitions were not readily traceable to other sources.
- 4) We excluded taxonomies of abnormal/clinical personality traits.
- 5) When reviewing meta-analyses, we only considered those that investigated associations between personality traits and workplace-centered variables (e.g., job performance, workplace deviance).
- 6) We only included content from English language taxonomies.

Our search uncovered 22 sources of taxonomic information beyond the existing Work Styles taxonomy. We excluded four of these sources (Condon, 2017; Feher & Vernon, 2021; Hough et al., 2015; Schwaba et al., 2020) because they did not provide definitions of the personality dimensions they described, nor were those definitions readily traceable to other sources. To these 18 sources, we added the Work Styles as they currently appear in the Content Model, leading to an initial set of 19 sources that we reviewed to identify personality dimensions for further consideration. Table 3 summarizes each of the 19 sources. As we note below, some of these sources were consolidated into the same row in Table 3 as they effectively informed the same taxonomic structure.

As shown in Table 4, although we identified 19 sources of taxonomic information, each source did not necessarily yield information about a unique taxonomy. For example, Pletzer et al. (2021) meta-analyzed the association between the complete HEXACO model and workplace deviance. However, the article did not provide definitions for the HEXACO traits, leading us to

consult Ashton et al. (2014), a review article heavily referenced by the authors of the meta-analysis. Ashton et al. (2014) provided definitions of some, but not all, of the personality traits in the HEXACO model, requiring us to consult the HEXACO website (Lee & Ashton, 2009) in order to obtain the definitions of the remaining traits. Similarly, we have grouped Muris et al. (2017) and Schreiber and Marcus (2020) together because Muris and colleagues provided definitions for the Dark Triad, and Schreiber and Marcus did not. We have also grouped them together due to the nature of the models they described. Muris et al. (2017) meta-analyzed associations between the Dark Triad and many other variables, whereas Schreiber and Marcus (2020) attempted to integrate the Dark Triad into the broad Big Five. They found evidence for a “dark core” factor at a level of generality above the Dark Triad and of the same breadth as the two higher-order personality traits that Digman (1997) hypothesized to account for intercorrelations among the Big Five traits. It could be argued that Schreiber and Marcus (2020) and Muris et al. (2017) presented slightly different taxonomies, with the former featuring a higher-order factor of a level of generality above the Dark Triad and the latter focusing solely on the Dark Triad. However, given that only one of the articles provided definitions for the personality dimensions, and the models they presented were highly similar, we opted to treat them as representing a single taxonomy. We followed the same line of reasoning for He et al. (2019) and Judge et al. (2013), which presented a similar situation.

Table 4. Summary of Personality Taxonomies Considered

Citation(s)	Dominant Personality Model	Dimension Level(s) Analyzed	Number of Dimensions Analyzed
Ashton et al. (2014); Lee & Ashton (2009); Pletzer et al. (2020, 2021)*	HEXACO	Compound, Facet	25
Bader et al. (2021)	Dark Traits	Specific [†]	5
He et al. (2019); Judge et al. (2013)	Big Five	Facet	30
Irwing et al. (2023)	Big Five	Facet	70
Drasgow et al. (2023); Nye et al. (2023)	Big Five	Facet	29
Moshagen et al. (2018)	Dark Traits	Specific [†]	8
Moshagen et al. (2020)	Dark Traits	Specific [†]	12
Muris et al. (2017); Schreiber and Marcus (2020)	Dark Traits	Broad Domain	3
National Center for O*NET Development (2024)	Big Five	Broad Domain, Facet	16
Kantrowitz et al. (2019)	Big Five	Facet	16
Paunonen et al. (2003)	None	Facet	10
Soto and John (2017)	Big Five	Facet	15
Stanek and Ones (2018, 2023)*	Big Five	Compound, Facet	100
Woods and Anderson (2016)	Big Five	Facet	26

Note. * Source of supplemental information about a taxonomic source that we used to inform understanding of the given personality model. [†] Derived using hierarchies of factor solutions or bifactor modeling approaches, meaning the level of analysis does not perfectly correspond to the typical distinction between broad domains and facets.

After grouping our taxonomic sources based on whether they provided definitional text or featured highly similar personality models, we were left with 14 unique personality taxonomies. Of these 14 models, more than half (eight; 57%) were rooted in the Big Five personality traits. The HEXACO model, itself ultimately derived from the Big Five (Thielmann et al., 2022), was also included, although it occurred in only a single instance, without variation across the factor structure and definitions as we found for the various Big Five models. More than a quarter of the taxonomies (four; 29%) concerned “dark,” subclinical personality traits, some of which have been hypothesized to be reducible to the Big Five, such as narcissism and psychopathy (Stanek & Ones, 2018), with others, such as greed and psychological entitlement (Moshagen et al., 2020), having not yet been situated within more well-established personality structures. Finally, one of our sources (Paunonen et al., 2003) was explicitly intended to feature personality traits the authors believed exist outside of the Big Five.

Where the degree of generality of personality traits in the mid-90s was primarily divided between broad domains (e.g., the level of the Big Five) and facet-level traits (i.e., narrower dimensions clustered within broad domains), the modern personality literature features a wider variety of types of traits. The concept of “personality aspects” has been introduced to describe traits of a level of generality between broad domains and facets (DeYoung et al., 2007). For instance, there is empirical support for separating Extraversion into enthusiasm and assertiveness aspects, and Conscientiousness into orderliness and industriousness aspects. Empirical evidence has also accumulated to support the existence of the two higher-order personality factors that Digman (1997) originally hypothesized to account for positive intercorrelations among the broad Big Five traits (DeYoung, 2006). Agreeableness, Conscientiousness, and Emotional Stability load on factor alpha, also known as stability, which represents individual differences in the ability to maintain stable internal (e.g., mood) and external (e.g., social relationships) functioning even when confronted with disruptive events (Stanek & Ones, 2018). Extraversion and Openness load on factor beta, also known as plasticity, which represents individual differences in the tendency to approach external stimuli and engage in exploratory behavior, be it physical, perceptual, or cognitive (Stanek & Ones, 2023). Data also corroborate the presence of a single, overarching general factor of personality, although how to interpret it remains controversial (Revelle & Wilt, 2013; Stanek & Ones, 2023). At precisely the opposite end of the continuum of generality to specificity in personality attributes, personality “nuances” (McCrae, 2015) or “sub-facets” (Stanek & Ones, 2018) have been introduced to capture aspects of traits that are even more particular than facets.

The wider variety of personality traits that have emerged in the literature over the past 25 years is reflected in the constituent elements of the models we considered. The vast majority of the taxonomies we examined included facet-level traits and broad domain traits (10; 71%) – although not all models that included broad traits also featured facet-level traits and vice-versa. Two models (14%) included aspect-level traits and/or higher-order traits, while only a single model included the general factor of personality or sub-facets. Additionally, three taxonomies were developed using either bifactor modeling (Reise, 2012) or hierarchies of factor solutions (Goldberg, 2006; Lang et al., 2016) techniques, resulting in personality traits at a level of generality not wholly interpretable in terms of the distinctions among facet-, aspect-, and broad domain-level attributes. Finally, two taxonomies included compound traits, formative constructs created by combining scores on indicators of latent personality attributes (Hough & Schneider, 1996).

Step 2: Compile Personality Dimensions from Taxonomies

As indicated in the preceding review, the 14 models we identified varied greatly in terms of not only content but organization, with many classifying personality dimensions at multiple levels of specificity (e.g., sub-facet → facet → aspect → broad domain → higher-order trait). A key decision we needed to make at the outset of Step 2 was to determine what “level” of personality dimension to extract to use for subsequent cluster analyses to be conducted in Step 3, as some taxonomies offered dimensions at multiple levels of their hierarchies.

Our general strategy was to favor specificity, as research cited previously (e.g., He et al., 2019) demonstrates that focusing on a level of personality that is too broad can reduce the ability to forecast performance. Nonetheless, personality sub-facets are often so narrow that they explicitly concern only very tightly circumscribed content domains or types of situations, some of which do not necessarily apply to the workplace (e.g., Extraversion → Sociability Facet → University Environment Sub-Facet; Stanek & Ones, 2018). Given this serious drawback of sub-facets, in addition to them appearing in only a single taxonomy, and coupled with the fact that facets have typically been conceptualized as the narrowest personality domain since the 1990s, we chose to target facet-level dimensions for further consideration.

Although we concentrated on personality facets, the nature of several of the personality models required us to be somewhat flexible in pursuing this strategy. Four of the models did not include facet-level dimensions. In one case (Muris et al., 2017), dimensions were only available at the broad domain level. Three other taxonomies were developed using bifactor or hierarchies of factor solutions approaches, which yield factors that do not fit precisely into the continuum running from the sub-facet to the higher-order trait level. We subsequently refer to dimensions that do not fit into the aforementioned continuum as “specific dimensions.” Additionally, there were unique aspects of several taxonomies that led us to consider including additional dimensions broader than facets, even though those taxonomies also included facet-level dimensions. For example, both Stanek and Ones (2018) and the HEXACO model (Ashton et al., 2014) include compounds that are related to, but not straightforwardly reducible to unidimensional traits.

With these issues in mind, we pursued the following strategy for extracting personality dimensions from the 14 personality models for further consideration. Our primary focus was facet-level dimensions. When these dimensions were not available, we used the dimensions associated with the next most specific level in the personality hierarchy. In the case of Muris et al. (2017) that meant extracting dimensions at the broad domain level. For the three models that featured “specific dimensions” (i.e., those that fall outside of the typical sub-facet to higher-order continuum), we extracted those dimensions, as that level of analysis was the most fine-grained available in those cases. For the current Work Styles, we extracted the lower-order dimensions and the broad Independence dimension, which lacked facets. Finally, for Stanek and Ones (2018) and HEXACO we extracted facet-level dimensions and compound-level dimensions. Given these guidelines, across the 14 taxonomies we identified 415 personality dimensions for further consideration. Of these dimensions, 320 were facet-level, 64 were compound-level, 25 were specific-dimension-level, and six were broad domain-level.

With these personality dimensions identified, we then made minor edits to the list of dimensions and their descriptions in preparation for the analyses we conducted in Step 3. These edits included:

- Removing 22 personality dimensions that explicitly referred to a non-workplace domain in their description or were otherwise irrelevant to the workplace (e.g., Army Self-Efficacy: “High scoring individuals are confident in their abilities to successfully perform the tasks of a Soldier and accomplish their goals in the Army”; Nye et al., 2023, p. 4).
- For three dimensions, relabeling the dimension and editing the description to avoid having a dimension that reflects a lack of an attribute rather than possession of said attribute. For example, the Extraversion facet called "Lack of Anhedonia" was defined as "Negative pole represents maladaptive lack of enjoyment from, engagement in, or energy for life’s experiences; deficits in the capacity to feel pleasure or take an interest in things [...] Indicates impairment in feeling pleasure or being interested in things" (Stanek & Ones, 2018, p. 22). We relabeled this trait "Anhedonia" and changed the definition to "Maladaptive lack of enjoyment from, engagement in, or energy for life’s experiences; deficits in the capacity to feel pleasure or take interest in things; impairment in feeling pleasure or being interested in things."
- Editing descriptions of approximately 275 dimensions to remove repetitive language that was common to all (or nearly all) dimensions within a given source. Alterations of this type included the removal of repetitive language at the start of a description, such as “tendency to” and “propensity to,” along with other aspects of descriptions that were germane to the source of the dimensions and could artificially introduce a source-specific factor into follow-up cluster analyses if not removed.

This process resulted in removing an additional 50 personality dimensions, leaving 365 suitable for use in Step 3 (including all 16 lower-order O*NET Work Styles). Table 3 provides a breakdown of counts of the final number of dimensions analyzed from each personality model that were moved forward for use in Step 3.

Step 3: Embed and Cluster Analyze Personality Dimensions

Given the large number of personality dimensions identified through the process above, we needed an efficient means for quickly identifying clusters of similar dimensions. Fortunately, over the past decades, developments in the field of natural language processing (NLP) have led to methods that allow for quickly being able to express text as vectors of numbers, called “embeddings,” that effectively encode semantic information about the text (Reimers & Gurevych, 2019). These embeddings can be used to evaluate the semantic similarity of pairs of texts (e.g., a pair of sentences, or in this case, a pair of descriptions of personality dimensions) by quantitatively comparing the embeddings of each text for similarity. For this project, we used the Sentence BERT (SBERT) model from the “SentenceTransformers” Python library (Reimers & Gurevych, 2019) to embed descriptions of the 365 personality dimensions identified in Step 2. Specifically, we used the “all-mpnet-base-v2” SBERT model to embed each personality dimension.³ SBERT is a model for converting pieces of sentence or paragraph-like text to a vector of 768 numeric scores, and was built using bidirectional encoder representations from transformer networks (BERT; Devlin et al., 2019). HumRRO has had success embedding text from the O*NET Database with SBERT in the past, most notably in the development of an updated related occupations framework ([Dahlke et al., 2022](#)).

³ The choice of “all-mpnet-base-v2” was based on the observation that it was the most performant of pre-trained SentenceTransformer models for sentence embedding tasks (see https://sbert.net/docs/sentence_transformer/pretrained_models.html).

We generated two sets of SBERT embedding vectors for each of the 365 personality dimensions identified in Step 2. One set reflected embeddings for dimensions' descriptions only, and the other reflected embeddings for a concatenation of dimensions' names and descriptions. With these embeddings generated for each set, we then calculated the cosine similarity between each pair of dimension's embeddings, yielding a 365 x 365 matrix reflecting the semantic similarity among each pair of dimensions. For each matrix, we then explored various k -means cluster solutions to better understand how dimensions clustered together based on semantic similarity. We considered a range of potential cluster numbers (k), that included: 5, 6, 10, 15, 16, 20, 25, and 30. The range of cluster solutions examined here allowed us to look at how personality dimensions clustered at different levels of specificity ranging on the low end from the number of clusters that might be expected at the broad Big Five ($k = 5$) or HEXACO level ($k = 6$), to the number of clusters that might be expected at more middling levels of specificity such as the Big Five aspect level ($k = 10$) or lower-order O*NET Work Style dimension level ($k = 16$), all the way up to the number of clusters that might be expected at the Big Five facet level (e.g., $k = 30$). Given that k -means solutions can vary based on the starting point, for each number of clusters (k), we selected the cluster solution that minimized the total within-cluster sum of squares among 70 random starts with a maximum of 250 iterations for further evaluation.

Upon initial review of the results, we decided to limit our focus to the 20-cluster solution based on embeddings of concatenated personality dimension names and descriptions for several reasons. First, a review of the cluster results suggested that the use of concatenated dimension names and descriptions yielded clusters that were slightly easier to interpret than those with descriptions alone. Second, examination of plots of total within-cluster sums of squares appeared to asymptote in the 15 to 25 cluster range. Third, there was a desire to keep the level of specificity of revised Work Styles at about the level of current Work Styles, yet we wanted to explore expanding the number of clusters beyond 16 to see what clusters emerged with a slightly increased level of specificity. Lastly, a comparison of the 20 and 25-cluster solutions suggested outcomes that were consistent with one another, but the five additional clusters in the 25-cluster solution drew distinctions among personality dimensions that the project team did not perceive to be of value with respect to differentiating occupations.

Limiting our attention to the 20-cluster solution noted above, our next step involved submitting the names and descriptions of the personality dimensions included in a given cluster to the Mistral-7B large language model (LLM) and prompting it to generate a draft label and description of each cluster (Jiang et al., 2023).⁴ The generated labels and descriptions were reviewed and edited for clarity and accuracy relative to the top set of dimensions for each cluster (i.e., those personality dimensions most similar to the cluster centroid). This prompting-labeling was done for each of the 20 clusters to help facilitate comparison of the clusters relative to the current, lower-order 16 Work Styles. Table 4 provides labels and descriptions of the 20 clusters that resulted from this process. To facilitate interpretation, we attempted to map each cluster to one of the Big Five factors and sorted the clusters by the Big Five factors that we expected they would most closely map. Also provided in Table 4 is the number of personality dimensions (out of 365) associated with the given cluster (n) as well as the mean, standard deviation, minimum and maximum dimension-cluster centroid cosine similarity statistics across dimensions in the given cluster (based on embeddings of concatenated dimension names and descriptions).

⁴ We used Mistral-7B-Instruct-v0.1 (see <https://huggingface.co/mistralai/Mistral-7B-Instruct-v0.1>) with the following hyperparameter settings (temperature = .8, top p = .8, top k = 40).

Table 5 reveals that Agreeableness, Conscientiousness, and Openness to Experience were relatively more represented in the 20-cluster solution, with each of the aforementioned factors being mapped to five clusters. In contrast, Emotional Stability (ES) and Extraversion (Ex) were only mapped to two and three clusters, respectively. In general, dimensions were well spread across the clusters, with all but two clusters (Dependable, Appreciative) having 10 or more dimensions associated with them. With respect to the clusters themselves, on average, dimensions had a cosine similarity with the average embedding across all dimensions within their cluster that ranged from .60 (Introverted, $n = 20$, $SD = .08$) to .88 (Appreciative, $n = 6$, $SD = .04$). For comparison, the average cosine similarity among dimension pairs in general (regardless of cluster membership) was only .27 ($n = 66,430$ dimension pairs, $SD = .12$, 5th percentile: .10, 95th percentile = .48)

Table 5. Summary of 20-Cluster Solution of Personality Dimensions

Cluster	Description	Big Five Map	N	Dimension-Cluster Centroid Cosine Similarity			
				M	SD	Min	Max
Aggressive	A tendency to display callous, aggressive, and vengeful behaviors towards others with disregard for their distress and emotional well-being.	A-	20	.71	.04	.61	.80
Compassionate-Altruistic	A tendency for kindness, cooperation, consideration, trust, and empathy toward others, manifesting in altruistic actions, warm interpersonal relationships, and a desire for harmony.	A	33	.72	.05	.63	.83
Honest-Moral	A tendency for adherence to ethical standards, fulfilling obligations, treating others fairly, and avoiding immoral activities.	A	15	.74	.11	.48	.86
Manipulative	A tendency to use deceit, manipulation, and cynical beliefs to pursue self-interest and personal gain.	A-	12	.78	.10	.57	.88
Self-Centered	A tendency for excessive self-focus, inflated sense of importance, and disregard for community well-being. This includes narcissistic entitlement, egotism, grandiosity/intimidation, psychological entitlement, attention-seeking, envy, self-centeredness, greed, suspiciousness, inferiority, and humility when it is expressed as a lack of consideration for others.	A	21	.75	.07	.64	.86
Cautious	A tendency for some individuals to act carefully, considerately, and self-controlled in their decisions and actions, while others are drawn towards risk, impulsivity, and a lack of concern for potential consequences.	C	25	.66	.07	.55	.79
Dependable	A tendency for being reliable, responsible, and dependable in fulfilling obligations and providing excellent customer service.	C	6	.84	.09	.69	.95
Driven	A tendency for setting challenging goals, working diligently towards their achievement, persisting in the face of obstacles, and exhibiting strong work ethic and resourcefulness.	C	23	.69	.11	.40	.83

Table 5. (Continued)

Cluster	Description	Big Five Map	n	Dimension-Cluster Centroid Cosine Similarity			
				M	SD	Min	Max
Orderly	A tendency for seeking order, maintaining neat surroundings, paying careful attention to details, and planning tasks effectively.	C	12	.74	.09	.54	.85
Self-Reliant	A tendency for self-reliance, assertiveness, and internal locus of control in coping with situations, contrasted with a reliance on social support, empathy, and external locus of control during difficult times.	C	25	.64	.09	.37	.74
Anxious	A tendency for heightened worry, apprehension, and susceptibility to stress in various forms, including anxiety about impending events, vulnerability to panic, suspiciousness of others, hysteria, and somatic complaints.	ES-	13	.73	.13	.46	.88
Resilient	A tendency for maintaining emotional stability, self-control, and patience in dealing with stressors and expressions of emotions.	ES	20	.69	.09	.44	.79
Dominant	A tendency to take charge, assume leadership roles, initiate actions, and assert dominance in social situations.	Ex	17	.68	.08	.55	.82
Positive	A tendency for experiencing positive emotions, high spirits, enthusiasm, energy, and gratitude, contrasted with susceptibility to depression, anhedonia, negative affect, and sadness.	Ex	16	.70	.11	.48	.85
Sociable	A tendency for seeking, engaging in, and thriving in social interactions and connections with others.	Ex	21	.75	.09	.60	.90
Adaptable	A tendency to embrace novelty, adapt to diverse environments and challenge conventional beliefs and values.	O	22	.62	.10	.41	.78
Adventurous	A tendency for seeking novel experiences, excitement, and variety through adventures, exploration, and cognitive stimulation.	O	17	.75	.05	.68	.85
Appreciative	A tendency for deep appreciation and sensitivity towards art, music, nature, and aesthetic values.	O	6	.88	.04	.82	.91
Intellectually Curious	A tendency for intellectual exploration, innovation, and creativity, characterized by curiosity, a desire for understanding complex topics, and the generation of new ideas.	O	21	.73	.07	.58	.88
Introverted	A tendency for introspection, rumination, and fantasy versus seeking input from others, data rationality, and deliberation in decision-making.	O	20	.60	.08	.39	.75

Note. n = Number of personality dimensions within the given cluster. Big Five Map = Rationale mapping of each cluster to the Big Five personality factors. A = Agreeableness. C = Conscientiousness. ES = Emotional Stability. Ex = Extraversion. O = Openness to Experience. A “-” symbol following the Big Five factor abbreviation indicates the given cluster would be expected to negatively relate with the given Big Five factor.

Step 4: Compare Clusters to Current Work Styles and Develop Draft Revised Work Styles

As noted in the Introduction, at the outset of this effort, we envisioned revising the set of Work Styles in such a way that would help ensure they reflect developments in personality research that have emerged since the Work Styles were originally formulated in the mid-1990s. The 20-cluster solution above gave the project team a parsimonious way to compare the current set of O*NET Styles to personality dimension clusters informed by contemporary personality taxonomies and inform such revisions.

To get a clearer idea of the relation of each current Work Style to the 20 clusters that emerged from our analysis of contemporary personality taxonomies, we calculated the cosine similarity between the embedding for each existing lower-order Work Style dimension (embedding the concatenation of the name and description of the Work Style) and the average embedding across personality dimensions in each cluster (see Table 6).⁵

Upon compiling the results above, the clustering and cosine similarity results were reviewed and initial decisions about draft revisions to the lower-order dimensions within the Work Styles taxonomy were made. Subsequently these were refined in discussions with the Center. Specifically, we reviewed each cluster and made a determination of whether the cluster (a) warranted the addition of a new Work Style that did not currently exist in the Work Style taxonomy; (b) suggested potential revision of an existing Work Style; (c) was redundant with, or sufficiently captured, by an existing Work Style; or (d) did not warrant further consideration for one or more reasons. As we note later, once the revised lower-order Work Styles were developed, we re-grouped them into a new set of higher-order Work Style dimensions. The following sections summarize key decisions regarding revisions to the set of lower-order Work Styles.

⁵ Note for clusters that included a given Work Style, these are akin to item-total correlations only using cosines (as the similarity metric) and embedding elements (as opposed to test respondents) as the unit of analysis.

Table 6. Cosine Similarity between Current Work Styles and Average Embeddings for Personality Dimension Clusters

Cluster	Big Five Map	O*NET Work Styles Dimension - Cluster Centroid Cosine Similarity																Max
		Achievement / Effort	Initiative	Leadership	Cooperation	Concern for Others	Social Orientation	Self-Control	Stress Tolerance	Adaptability/ Flexibility	Dependability	Attention to Detail	Integrity	Independence	Innovation	Analytical Thinking	Persistence	
Aggressive	A-	.23	.11	.22	.36	.38	.28	.41	.38	.21	.20	.26	.31	.40	.11	.18	.16	.41
Compassionate-Altruistic	A	.25	.19	.36	.73	.73	.52	.45	.42	.41	.40	.45	.50	.50	.18	.22	.26	.73
Honest-Moral	A	.32	.34	.45	.59	.60	.39	.43	.33	.30	.59	.47	.81	.43	.22	.32	.37	.81
Manipulative	A-	.17	.11	.29	.50	.43	.36	.31	.25	.32	.27	.33	.47	.39	.15	.23	.20	.50
Self-Centered	A	.35	.21	.31	.37	.47	.39	.39	.37	.19	.25	.30	.41	.54	.17	.24	.23	.54
Cautious	C	.41	.29	.37	.44	.44	.37	.53	.45	.44	.42	.46	.36	.66	.26	.31	.40	.66
Dependable	C	.24	.30	.40	.50	.55	.39	.35	.30	.44	.95	.46	.57	.39	.24	.34	.45	.95
Driven	C	.81	.44	.44	.47	.46	.44	.48	.44	.47	.46	.55	.43	.54	.43	.47	.73	.81
Orderly	C	.41	.28	.40	.49	.46	.41	.37	.29	.38	.40	.75	.41	.44	.25	.37	.36	.75
Self-Reliant	C	.56	.37	.41	.40	.53	.52	.59	.56	.30	.44	.30	.46	.59	.32	.37	.46	.59
Anxious	ES-	.38	.15	.21	.23	.35	.31	.44	.55	.25	.27	.27	.16	.38	.19	.25	.26	.55
Resilient	ES	.47	.21	.34	.38	.51	.35	.75	.74	.34	.32	.35	.30	.48	.25	.30	.35	.75
Dominant	Ex	.46	.57	.78	.58	.56	.57	.51	.38	.47	.45	.40	.45	.58	.38	.40	.43	.78
Positive	Ex	.38	.12	.26	.41	.40	.36	.38	.39	.34	.26	.26	.25	.41	.22	.23	.24	.41
Sociable	Ex	.31	.15	.27	.57	.46	.71	.39	.34	.40	.27	.27	.27	.47	.18	.17	.21	.71
Adaptable	O	.29	.23	.37	.47	.46	.48	.35	.39	.65	.35	.36	.36	.55	.39	.33	.40	.65
Adventurous	O	.47	.20	.28	.40	.37	.43	.32	.27	.47	.22	.41	.27	.50	.32	.24	.32	.50
Appreciative	O	.30	.14	.17	.25	.30	.30	.22	.20	.22	.12	.35	.30	.27	.23	.17	.15	.35
Intellectually Curious	O	.45	.38	.40	.42	.40	.42	.31	.27	.49	.32	.45	.37	.51	.62	.51	.39	.62
Introverted	O	.50	.33	.39	.32	.38	.37	.39	.42	.30	.28	.42	.37	.48	.47	.55	.40	.55
Max		.81	.57	.78	.73	.73	.71	.75	.74	.65	.95	.75	.81	.66	.62	.55	.73	

Note. Big Five Map = Rationale mapping of each cluster to the Big Five personality factors. A = Agreeableness. C = Conscientiousness. ES = Emotional Stability. Ex = Extraversion. O = Openness to Experience. An “-” symbol following the Big Five factor abbreviation indicates the given cluster would be expected to negatively relate with the given Big Five factor. Cell values are highlighted such that larger cosine similarities are more saturated with green, and smaller cosines are more saturated with red.

Changes to Current Lower-Order Work Styles

- We made no substantive changes to three current lower-order Work Styles, namely Dependability, Integrity, and Leadership. Note, however, that we changed the label of Leadership to “Leadership Orientation” to parallel the structure of the revised Achievement Orientation Work Style described below, and we made minor changes to the descriptions to conform to new requirements for Work Style definitions we describe in a following section (e.g., each begins with a “A tendency...”).
- For 11 current lower-order Work Styles, we made more substantive edits to their descriptions (and in some cases, their names as well). Namely:
 - The current Achievement/Effort Work Style was renamed Achievement Orientation, and its description was revised to focus more on achievement striving and less on learning/mastery to help better differentiate it from the new Intellectual Curiosity Work Style.
 - The current Persistence Work Style was renamed Perseverance, and its description was revised to shift it away from the Achievement/Effort elements of Conscientiousness (to help reduce redundancy with Achievement Orientation) and move it more toward a compound trait that reflects a blend of Conscientiousness and Emotional Stability.
 - The current Initiative Work Style’s description was revised to better differentiate it from the revised Achievement Orientation Work Style. In doing so, the Work Style moved more toward a compound trait that reflects a blend of Conscientiousness, Agreeableness, and Extraversion.
 - The current Attention to Detail Work Style’s description was revised to bring an orderliness element to it which is lacking from the current set of Work Styles but that clearly shares a nexus with detail orientation and thoroughness.
 - The current Social Orientation Work Style’s description was revised to better frame it as a personality dimension rather than a work preference (i.e., shift it away from more of a Work Value to more of a personality dimension), and move it more towards the gregariousness element of Extraversion which was not clearly covered in the current set of Work Styles.
 - The current Cooperation and Concern for Others Work Styles descriptions were both revised to better differentiate them, with the former being revised to focus more on being pleasant and cooperative and the latter being revised to focus more on showing concern for others and empathy. Note also that the label of Concern for Others was changed to “Empathy” to avoid using the label in the actual description of the Work Style itself.
 - The Self Control and Stress Tolerance Work Styles descriptions were both revised to better differentiate them, with the former being revised to focus more on maintaining calmness and composure in response to difficult situations, keeping emotions in check, and avoiding aggressive behavior, and the latter being revised to focus more on coping and functioning effectively in stressful situations.
 - The current Adaptability/Flexibility Work Style was renamed Adaptability and revised to incorporate an openness to novelty more generally (e.g., open to change, new experiences, new ideas) and drop its references to variety given the latter’s nexus with the O*NET Work Values domain.
 - Lastly, the current Innovation Work Style’s description was revised to focus more heavily on innovation elements of Openness to Experience and help distinguish it

from other related elements of the O*NET Content Model, most notably the “Thinking Creatively” Generalized Work Activity.

- Lastly, we decided to drop two current lower-order Work Styles that were not well aligned to any of the 20 clusters and that the project team believed were not personality dimensions per se and more appropriate for other domains within the O*NET Content Model. Specifically, we decided to drop Independence, as this more clearly falls within the Work Values domain (e.g., Independence is one of the O*NET Work Values), and Analytic Thinking, which, as defined, is more cognitive in nature and more closely aligned with elements of O*NET’s Skills domain (see Critical Thinking and Complex Problem Solving) and Abilities domain (see Deductive Reasoning and Inductive Reasoning).

Table 7 summarizes the types of changes (or lack thereof) made to each of the 16 current lower-order work Style dimensions.

Creation of New Lower-Order Work Styles

- It was clear that elements of the Dark Triad manifested in three of the clusters: Aggressive-Sadistic, Manipulative, and Self-Centered. Furthermore, no existing Work Style exhibited very high cosine similarity with any of these clusters. Upon discussions among the project team and the Center, we felt it important not to ignore the Dark Triad, given its presence in contemporary personality taxonomies and general relevance to work, but also balance that with the need to avoid adding new Work Styles that could more easily stray into the clinical realm. As such, we decided to propose two new Work Styles that attempted to capture the corresponding positive version of Manipulative, namely Sincerity, and the corresponding positive end of Self-Centered, namely Humility. The team believed the positive end of the Aggressiveness-Sadistic cluster was conceptually already captured by the current Cooperation and Concern for Other’s Work Styles. Note that the additions above also offered the opportunity to allow the revised set of Work Styles to be more reflective of the Honesty-Humility element of the HEXACO personality model.
- We also proposed adding five new lower-order Work Style dimensions that were informed by clusters that were deemed (a) work-relevant and (b) not clearly covered by any current lower-order Work Style dimensions. These dimensions included:
 - Cautiousness (based on the Cautious cluster, with ties back to work-related elements of Conscientiousness).
 - Self-Confidence (based on the Self-Reliant cluster with ties back to the core self-evaluation, self-efficacy, and internal locus of control concepts).
 - Intellectual Curiosity (based on the Intellectually Curious cluster, with ties back to the Intellect element of Openness to Experience).
 - Tolerance for Ambiguity (based on the Adaptable cluster, with ties back to elements of Openness to Experience).
 - Optimism (based on the Positive cluster, with ties back to work-related elements of Extraversion and Emotional Stability).

Table 7. Summary of Revisions to Current Lower-Order Work Style Dimensions in the O*NET Content Model

Current Dimension Name	Current Dimension Description	Revised Dimension Name	Revised Dimension Description	Type of Change
Achievement/Effort	Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks	Achievement/Effort	A tendency to establish and maintain personally challenging work-related goals, set high work-related standards, and exert high effort toward meeting those goals and standards	Changed description only
Persistence	Job requires persistence in the face of obstacles	Perseverance	A tendency to exhibit determination and resolve to perform or complete tasks in the face of difficult circumstances or obstacles at work	Changed name and description
Initiative	Job requires a willingness to take on responsibilities and challenges	Initiative	A tendency to be proactive and take on extra responsibilities and tasks that may fall outside of one's required work role	Changed description only
Leadership	Job requires a willingness to lead, take charge, and offer opinions and direction	Leadership Orientation	A tendency to lead, take charge, offer opinions, and provide direction at work	Changed name only
Cooperation	Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude	Cooperation	A tendency to be pleasant, helpful, and willing to assist others at work	Changed description only
Concern for Others	Job requires being sensitive to others' needs and feelings and being understanding and helpful on the job	Empathy	A tendency to show concern for others and be sensitive to others' needs and feelings at work	Changed name and description
Social Orientation	Job requires preferring to work with others rather than alone and being personally connected with others on the job	Social Orientation	A tendency to seek out, enjoy, and be energized by social interaction at work	Changed description only
Self-Control	Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations	Self-Control	A tendency to remain calm, composed, and manage emotions effectively in response to criticism or difficult situations at work	Changed description only

Table 7. (Continued)

Current Dimension Name	Current Dimension Description	Revised Dimension Name	Revised Dimension Description	Type of Change
Stress Tolerance	Job requires accepting criticism and dealing calmly and effectively with high-stress situations	Stress Tolerance	A tendency to cope and function effectively in stressful situations at work	Changed description only
Adaptability/Flexibility	Job requires being open to change (positive or negative) and to considerable variety in the workplace	Adaptability	A tendency to be open to and comfortable with change, new experiences, or ideas at work	Changed name and description
Dependability	Job requires being reliable, responsible, and dependable, and fulfilling obligations	Dependability	A tendency to be reliable, responsible, and consistently meet work-related obligations	No substantive change to description
Attention to Detail	Job requires being careful about detail and thorough in completing work tasks	Attention to Detail	A tendency to be detailed oriented, organized, and thorough in completing work	Changed description only
Integrity	Job requires being honest and ethical	Integrity	A tendency to be honest and ethical at work	No substantive change to description
Independence	Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done	-	-	Dropped
Innovation	Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems	Innovation	A tendency to be inventive, imaginative, and adopt new perspectives on ways to accomplish work	Changed description only
Analytical Thinking	Job requires analyzing information and using logic to address work-related issues and problems	-	-	Dropped

Note. Current dimension source: https://www.onetcenter.org/dictionary/28.3/excel/content_model_reference.html

Creation of New Lower-Order Work Styles

- It was clear that elements of the Dark Triad manifested in three of the clusters: Aggressive-Sadistic, Manipulative, and Self-Centered. Furthermore, no existing Work Style exhibited very high cosine similarity with any of these clusters. Upon discussions among the project team and the Center, we felt it important not to ignore the Dark Triad, given its presence in contemporary personality taxonomies and general relevance to work, but also balance that with the need to avoid adding new Work Styles that could more easily stray into the clinical realm. As such, we decided to propose two new Work Styles that attempted to capture the corresponding positive version of Manipulative, namely Sincerity, and the corresponding positive end of Self-Centered, namely Humility. The team believed the positive end of the Aggressiveness-Sadistic cluster was conceptually already captured by the current Cooperation and Concern for Other's Work Styles. Note that the additions above also offered the opportunity to allow the revised set of Work Styles to be more reflective of the Honesty-Humility element of the HEXACO personality model.
- We also proposed adding five new lower-order Work Style dimensions that were informed by clusters that were deemed (a) work-relevant and (b) not clearly covered by any current lower-order Work Style dimensions. These dimensions included:
 - Cautiousness (based on the Cautious cluster, with ties back to work-related elements of Conscientiousness).
 - Self-Confidence (based on the Self-Reliant cluster with ties back to the core self-evaluation, self-efficacy, and internal locus of control concepts).
 - Intellectual Curiosity (based on the Intellectually Curious cluster, with ties back to the Intellect element of Openness to Experience).
 - Tolerance for Ambiguity (based on the Adaptable cluster, with ties back to elements of Openness to Experience).
 - Optimism (based on the Positive cluster, with ties back to work-related elements of Extraversion and Emotional Stability).

Table 8 summarizes the seven new lower-order Work Style dimension added as part of this effort.

Table 8. New Lower-Order Work Styles Not Reflected among Current Work Styles

Dimension Name	Dimension Description
Cautiousness	A tendency to be careful, deliberate, and risk-avoidant when making work-related decisions or doing work
Self-Confidence	A tendency to believe in one's work-related capabilities and ability to control one's work-related outcomes
Humility	A tendency to be modest and humble when interacting with others at work
Sincerity	A tendency to be genuine and sincere in interactions with others at work, without concern for personal gain or self-interest
Intellectual Curiosity	A tendency to seek out and acquire new work-related knowledge and obtain a deep understanding of work-related subjects
Tolerance for Ambiguity	A tendency to be comfortable with ambiguity and uncertainty at work
Optimism	A tendency to exhibit a positive attitude and positive emotions at work, even under difficult circumstances

Overview of Revised Set of Lower-Order and Higher-Order Work Style Dimensions

The draft set of revised lower-order Work Style dimension names and descriptions presented in Tables 7 and 8 resulted from multiple iterations with the Center to arrive at draft final wording for each lower-order Work Style, including adopting a more personality-based framing for the Work Styles relative to the current definition in O*NET. Specifically, the definition of Work Styles was changed from: “Personal characteristics that can affect how well someone performs a job” to “Personality tendencies exhibited at work that can affect how well someone performs a job,” and each Work Style description now leads off with “A tendency...” rather than “Job requires...”. Additionally, the Work Style definitions for both lower-order and high-order Work Style dimensions (described below) intentionally included language that referenced the given tendency manifesting “at work,” to differentiate it from the tendency manifesting outside of the work context. For example, Leadership Orientation was defined as “A tendency to lead, take charge, offer opinions, and provide direction at work.”

Table 9 provides the complete set of lower-order Work Style dimensions, along with the draft revised set of higher-order Work Style dimensions to which they were assigned. The higher-order dimensions followed directly from a rational grouping of lower order dimensions into higher-order Big Five factors and Humility-Honesty factor from HEXACO. The higher-order dimensions’ definitions simply reflect a concatenation of elements of the lower-order dimension descriptions, and in this respect the higher-order dimensions might be viewed as formative composites of their respective lower-order dimensions. Note that some lower-order dimension could not be readily classified into a single Big Five factor or HEXACO and might best be viewed as the Work Style-analogue of compound traits (e.g., Initiative, Optimism, and Perseverance). For these, the higher-order dimension name and description has no construct-meaning. Instead, we simply offer a higher-order dimension name and description that identifies these lower-order dimensions as representing “compound dimensions” within the O*NET Content Model structure and are described as “Work style dimensions that reflect a combination of elements from two or more

broad personality domains.” Lastly, the full set of lower-order dimensions in Table 9 provides the starting point for the linkage exercise we describe in the next section.

Table 9. Draft Revised Lower-Order and Higher-Order Work Style Dimensions

Element ID	Element Name	Description	Big Five/HEXACO
1.D	Work Styles	Personality tendencies exhibited at work that can affect how well someone performs a job	
1.D.1	Conscientiousness	A tendency to exhibit achievement-oriented behavior, dependability, attention to detail, self-confidence, and cautiousness at work	C
1.D.1.a	Achievement Orientation	A tendency to establish and maintain personally challenging work-related goals, set high work-related standards, and exert high effort toward meeting those goals and standards	
1.D.1.b	Attention to Detail	A tendency to be detailed oriented, organized, and thorough in completing work	
1.D.1.c	Cautiousness	A tendency to be careful, deliberate, and risk-avoidant when making work-related decisions or doing work	
1.D.1.d	Dependability	A tendency to be reliable, responsible, and consistently meet work-related obligations	
1.D.1.e	Self-Confidence	A tendency to believe in one's work-related capabilities and ability to control one's work-related outcomes	
1.D.2	Extraversion	A tendency to exhibit leadership and socially oriented behavior at work	Ex
1.D.2.a	Leadership Orientation	A tendency to lead, take charge, offer opinions, and provide direction at work	
1.D.2.b	Social Orientation	A tendency to seek out, enjoy, and be energized by social interaction at work	
1.D.3	Agreeableness	A tendency to exhibit cooperative and empathetic behavior towards others at work	A
1.D.3.a	Cooperation	A tendency to be pleasant, helpful, and willing to assist others at work	
1.D.3.b	Empathy	A tendency to show concern for others and be sensitive to others' needs and feelings at work	
1.D.4	Honesty-Humility	A tendency to exhibit sincerity, humility, and integrity at work	H-H
1.D.4.a	Humility	A tendency to be modest and humble when interacting with others at work	
1.D.4.b	Integrity	A tendency to be honest and ethical at work	
1.D.4.c	Sincerity	A tendency to be genuine and sincere in interactions with others at work, without concern for personal gain or self-interest	

Table 9. (Continued)

Element ID	Element Name	Description	Big Five/HEXACO
1.D.5	Emotional Stability	A tendency to exhibit self-control and tolerate stress at work	ES
1.D.5.a	Self-Control	A tendency to remain calm, composed, and manage emotions effectively in response to criticism or difficult situations at work	
1.D.5.b	Stress Tolerance	A tendency to cope and function effectively in stressful situations at work	
1.D.6	Openness	A tendency to exhibit adaptability, flexibility, intellectual curiosity, and innovation at work	O
1.D.6.a	Adaptability	A tendency to be open to and comfortable with change, new experiences, or ideas at work	
1.D.6.b	Innovation	A tendency to be inventive, imaginative, and adopt new perspectives on ways to accomplish work	
1.D.6.c	Intellectual Curiosity	A tendency to seek out and acquire new work-related knowledge and obtain a deep understanding of work-related subjects	
1.D.6.d	Tolerance for Ambiguity	A tendency to be comfortable with ambiguity and uncertainty at work	
1.D.7	Compound Dimensions	Work style dimensions that reflect a combination of elements from two or more broad personality domains	
1.D.7.a	Initiative	A tendency to be proactive and take on extra responsibilities and tasks that may fall outside of one's required work role	C, A, Ex
1.D.7.b	Optimism	A tendency to exhibit a positive attitude and positive emotions at work, even under difficult circumstances	Ex, ES
1.D.7.c	Perseverance	A tendency to exhibit determination and resolve to perform or complete tasks in the face of difficult circumstances or obstacles at work	C, ES

Note. Big Five/HEXACO = Mappings of revised O*NET Work Styles to the Big Five and HEXACO personality factors. A = Agreeableness. C = Conscientiousness. ES = Emotional Stability. Ex = Extraversion. H-H = Honesty-Humility. O = Openness to Experience. Higher-order dimensions are highlighted in light grey.

Linking Draft Revised Work Styles to O*NET Work Activities and Work Contexts

A key objective of this effort was to ensure that any revised Work Style developed for inclusion in the O*NET Content Model was relevant to the world of work. Personality traits that are important in life domains outside the workplace are not necessarily predictive of performance in the workplace (cf. Roberts et al., 2007). To evaluate whether the revised Work Styles we developed were related to performance in world of work, we conducted a linkage exercise in which we asked personality and job analysis subject matter experts (SMEs) to rate how beneficial or detrimental each of the 21 Work Styles was to (a) performance of each of the 41 Generalized Work Activities (GWAs) from the O*NET Content model, and (b) performance in 61 Work Contexts (WCs) from the O*NET Content Model.⁶ Gathering these linkage ratings allowed us to evaluate whether any of the revised 21 Work Styles were not related to any GWAs and WC, and therefore may warrant their removal from the draft list of revised Work Styles.

Another goal of gathering linkage ratings between Work Styles and GWAs and WCs was to evaluate whether the 21 Work Styles were empirically distinct from one another based on their profiles of relations with GWAs and WCs. In creating the revised list of 21 Work Styles, our team saw them as conceptually distinct enough to warrant the specification of separate Work Styles. However, conceptually distinct constructs are not necessarily empirically distinguishable (Le et al., 2010). To evaluate whether the revised Work Styles were empirically distinct, we examined levels of correlation and absolute agreement among linkage rating profiles for each pair of the 21 Work Styles. If a pair was not empirically distinct, then it would suggest either combining them into a single Work Style or selecting only one of them for inclusion in the final revised set of Work Styles for the O*NET Content Model.

Beyond its value for evaluating the revised list of 21 Work Styles, a final purpose for linking O*NET Work Styles to GWAs and WCs is the value of such linkage data for future updating of Work Style ratings for occupations in O*NET. For example, the current method for updating Ability and Skill ratings for occupations in O*NET involves providing Ability/Skill-GWA and Ability/Skill-WC linkage data to the O*NET Analysts who make those ratings so they know what Abilities/Skills are linked to important GWAs and WCs for a given occupation being rated (Fleisher & Tsacoumis, 2012; Fleisher & Tsacoumis, 2018). Furthermore, the Work Style-GWA and Work Style-WC linkage ratings also provide the Center with a source of data for exploring future alternative approaches for automating the generation of Work Style ratings for occupations (e.g., drawing inferences about how beneficial/detrimental a Work Style is to performance of an occupation as a function of what Work Styles are linked to important GWAs and WCs for that occupation).

In the sections that follow, we detail the five steps we took to conduct the linkage exercise, to include:

- Step 1: Develop the Work Style-GWA/WC Linkage Exercise
- Step 2: Identify, Train, and Calibrate SMEs for the Exercise
- Step 3: Gather and Evaluate Initial Linkage Ratings

⁶ As we note below, we made slight adjustments to the published list of 57 WCs in the O*NET Content Model to facilitate gathering of linkage ratings for this effort. We describe these adjustments later in this section.

- Step 4: Discuss Initial Ratings with SMEs and Gather Final Ratings
- Step 5: Evaluate Final Linkage Ratings

Step 1: Develop the Work Style-GWA/WC Linkage Exercise

Our starting point for the development of the linkage rating exercise was previous O*NET reports that described the development of Ability-GWA/WC and Skill-GWA linkages published in the O*NET Database ([Fleisher & Tsacoumis, 2012](#); [Fleisher & Tsacoumis, 2018](#)). GWAs are “aggregation[s] of similar job activities/behaviors that underlie the accomplishment of major work functions” ([Borman et al., 1997](#), p. 474), and Work Contexts are “non-task-related factors of work which affect intrapersonal, interpersonal, or work outcomes” ([Strong et al., 1997](#), p. 630). As part of the Ability-GWA/WC and Skill-GWA/WC linkage exercises, SMEs in I-O psychology made a yes/no judgment regarding whether each Skill or Ability in the Content Model was “needed to perform” a given GWA or “needed to perform work in” a given WC ([Fleisher & Tsacoumis, 2012](#), p. D-2). An Ability/Skill was considered linked to a GWA/WC if more than half of the eight SMEs who participated in the linkage exercises (i.e., at least 5 of the 8 SMEs) indicated that it was needed to perform a GWA or perform work in a WC after a reconciliation discussion among the SMEs.

Although the aforementioned reports provided a precedent for gathering linkage judgments using a binary (yes/no) scale, we believed the Center would benefit from the use of a more refined linkage rating scale for Work Styles given (a) the multiple purposes the linkage data were designed to support (i.e., for evaluation of draft Work Styles, as a resource for facilitating the development of Work Style ratings for O*NET occupations), and (b) based on a review of the trait activation theory (TAT) and personality-oriented job analysis literatures.

We observed three main limitations to gathering binary linkage judgments for Work Styles. First, a simple binary judgment cannot account for differences in the magnitudes of associations between a Work Style and the performance of different GWAs or performance in different WCs. It is well-established that there are differences in the extent to which various personality traits tend to predict job performance (e.g., $\rho_{\text{Conscientiousness}} = .19$ vs. $\rho_{\text{Emotional Stability}} = .09$; Sackett et al., 2022). Second, a simple binary linkage judgment cannot differentiate between positive and negative associations between personality traits and performance, which, do occur (e.g., Goffin et al., 2011; Tett et al., 1999). In other words, it may be possible for a given Work Style to be linked to two GWAs, but for one GWA that link may reflect a positive association between that Work Style and performance of a given GWA, and another that link may reflect a negative association with a GWA. Lastly, as we note below, gathering linkage ratings using a numeric scale rather than a binary yes/no scale is arguably more in line with insights from the TAT and person-oriented job analysis literatures that have developed over the past several decades.

Insights from Trait Activation Theory

As described in the Introduction, TAT is a theoretical model that attempts to extend research from merely observing relationships between personality traits and workplace outcomes to explaining them. TAT ultimately hinges on the concept of “trait relevance.” Simply put, if an activity a person engages in or a situation a person occupies does not possess characteristics that represent an opportunity for a personality trait to manifest, that activity or situation is irrelevant to the given personality trait (Tett & Guterman, 2000). For example, the personality trait “Gregariousness” is largely defined in terms of social behavior, meaning that for an individual who is meditating alone in an empty room, there will be no opportunity for

gregariousness to manifest; the situation “meditating alone in an empty room” is *irrelevant* to the personality trait of gregariousness, because no other human beings are present.

Although situations and activities can be definitively judged “relevant” or “irrelevant” relative to a given personality attribute (i.e., a binary judgment), there are likely relatively few situations and activities that can be definitively ruled wholly irrelevant to a given personality trait. More common are situations and activities that vary in their degree of trait relevance. For instance, “Stress Tolerance” concerns the ability to tolerate anxiety-provoking stimuli. The situation “sitting in your car waiting for a red stoplight to turn green” may be largely, but not entirely, irrelevant to stress tolerance due to the small amount of anxiety some individuals might feel on such occasions (e.g., being late to an appointment, possibility of being hit by a careless driver). Similarly, the situation “encountering a bear in your backyard” is likely highly relevant to Stress Tolerance because most, but perhaps not all, people will experience anxiety in such a situation. Thus, trait relevance concerns the extent to which situations generally offer the opportunity for individual *differences* in trait expression. When designing our rating procedure, we took into account both the theoretical concept of trait relevance and the rating scales developed in various studies that attempted to quantify it (e.g., Haaland & Christiansen, 2002; Judge & Zapata, 2015; Lievens et al., 2006; Mussel & Spengler, 2015).

Insights from Personality-Oriented Job Analysis

Since the mid-90s, the methodology surrounding and literature documenting the results of personality-oriented job analysis (POJA) has also advanced. Borman et al. (1999) could only cite a single published paper germane to the topic (Raymark et al., 1997). Since that time, there have been several studies published that provide and comment on different methods for scaling relations between personality dimensions and performance in various contexts (e.g., performance in different types of jobs; see O’Neill et al., 2013 for a review). As we note below, developments in this area had a critical impact on the rating scale we adopted for the linkage exercise. Table 10 provides a summary of different strategies researchers have used to rate the relationship between a given personality dimension in the context of POJA.

We found that most POJA rating scales adopted very different strategies, with the main differentiating factors including:

- (a) the specific dimensions included in the given POJA assessment (which varied as a function of the intended purpose/application of the assessment),
- (b) whether researchers asked respondents to rate multiple items for each personality dimension of interest (Fraboni, 1995; Hogan & Holland, 2002; Raymark et al., 1995) or base their ratings on a description of each dimension (Borman et al., 1995; Fraboni, 1995; Goffin et al., 2011), and
- (c) the focus of the rating scales (e.g., importance of a given trait to performance on a job; how characteristic of one’s job various types of work are that also have a nexus with a given trait; extent of agreement/disagreement that a person with a given trait would be satisfied with a job; whether a trait is not required, helpful, or essential for a job; the extent to which a given trait would improve performance on a job; the direction and magnitude of the expected impact of a trait on performance on a job).

Table 10. Summary of Personality-Oriented Job Analysis Scaling Strategies

Study	Total # of Dimensions/Items	Rating Content	Rating Stem	Rating Scale
Borman, McKee, & Schneider (1995)	17 dimensions	Personality dimension names/descriptions	How important is <characteristic name> characteristic to the performance of your current job? What level of <characteristic name> is needed to perform your current job?	1 = Not Important, 2 = Somewhat Important, 3 = Important, 4 = Very Important, 5 = Extremely Important 0 = Relevant at all for performance on this job, then a 1 to 7 (low to high) scale with custom "required level" anchors between 1-2, at 4, and between 6-7 on the rating scale <i>(level scale no longer used)</i>
Fraboni (1995)	120 items (8 items per dimension, mix of positive and negatively keyed items within each dimension) 15 dimensions (one descriptive statement per dimension)	Scale 1: Multiple items per personality dimension describing the type of work performed on the job (e.g., Intense work is conducted in long stretches) Scale 2: Definitional statement for each dimension about what type of person is required for your job or what type of person would be satisfied with your job (e.g., This job requires someone who...)		1 = Extremely uncharacteristic of my job, 2 = Moderately uncharacteristic of my job, 3 = Slightly uncharacteristic of my job, 4 = Neutral, 5 = Slightly characteristic of my job, 6 = Moderately characteristic of my job, 7 = Extremely characteristic of my job 1 = Very much disagree, 2 = Moderately disagree, 3 = Slightly disagree, 4 = Neutral, 5 = Slightly agree, 6 = Moderately agree, 7 = Very much agree
Raymark, Schmit, & Guion (1997)	12 dimensions (107 items)	Multiple behavior-based items representing each personality dimension	Effective performance in this position requires the person to...."	0 = Not Required, 1 = Helpful, 2 = Essential
Hogan & Holland (2002)	7 dimensions (48 items)	Multiple behavior-based items representing each personality dimension		0 = Does not improve performance, 1 = Minimally improves performance, 2 = Moderately improves performance, 3 = Substantially improves performance
Goffin et al., (2011)	21 dimensions	Personality dimensions were defined for respondents with two to three descriptors of individuals who exhibit the trait (e.g., Individual is...)	Rate trait in terms of "how relevant they are for performance in the <medical specialty name> rotation"	-2 = Disastrous effect on performance in this clerkship rotation, -1 = Negative effect on performance in this clerkship rotation, 0 = No effect on performance in this clerkship rotation, +1 = Would help person perform successfully in this clerkship rotation, +2 = Essential for performance in this clerkship rotation

Only one of the studies highlighted in Table 10 (Goffin et al., 2011) featured a scale that allowed respondents to consider both the direction and magnitude of the relation between a trait and performance. Moreover, the POJA scaling strategy highlighted by Goffin et al. (2011) had been “validated” by research demonstrating a correspondence between ratings of personality attributes on the POJA scale and the criterion-related validities of those same personality attributes for the prediction of job performance. Consequently, this rating scale served as a major inspiration for the one developed for this project.

Linkage Instructions and Rating Scales

As noted above, we decided to use a variation on Goffin et al.’s (2011) POJA rating scale that would render it more appropriate for this research and provide a potential foundation for rating Work Styles for occupations in the future. First, to aid in differentiating Work Styles’ relations to GWAs and Work Contexts—and ultimately, to job performance in different occupations—we added one additional anchor on both the negative and positive ends of Goffin’s five-point scale, resulting in a seven-point scale. Second, we altered the language of the anchors to refer to the performance of GWAs or performance within given WCs (vs. within a medical clerkship rotation in Goffin et al.). Third, we softened the language on the negative side to eliminate potential awkwardness (e.g., changed references from “disastrous” to “extremely detrimental” on the extreme negative end). Lastly, we added brief instructional text following each scale that was tailored to the type of linkage SMEs would be asked to make (i.e., rating linkages between Work Styles and GWAs versus Work Styles and Work Contexts). Figure 1 provides the final rating scales used for the exercise.

Figure 1. Rating Scale for Linking Work Styles to GWAs and Work Contexts

Work Style-GWA Linkage Ratings						
-3	-2	-1	0	+1	+2	+3
Very detrimental to the performance of this work activity	Detrimental to the performance of this work activity	Somewhat detrimental to the performance of this work activity	Little or no impact on the performance of this work activity	Somewhat beneficial to the performance of this work activity	Beneficial to the performance of this work activity	Very beneficial to the performance of this work activity

When making your ratings, you should think of a person who has relatively high standing on the given trait, and whether that high standing is beneficial or detrimental to performing the given GWA.

Work Style-Work Context Linkage Ratings						
-3	-2	-1	0	+1	+2	+3
Very detrimental to performance in this work context	Detrimental to performance in this work context	Somewhat detrimental to performance in this work context	Little or no impact on performance in this work context	Somewhat beneficial to performance in this work context	Beneficial to performance in this work context	Very beneficial to performance in this work context

When making your ratings, you should think of a person who has relatively high standing on the given trait, and whether that high standing is beneficial or detrimental to performing work in the given Work Context.

Note that the brief instructional text following each rating scale aimed to eliminate potential artifactual variance in SME ratings with respect to the level of the personality dimension of interest. For example, SMEs were asked to consider an individual who has a relatively high standing in the Work Style rather than leaving the level unspecified. This helps avoid the issue of SMEs interpreting the level of Work Style of interest differently, which would, in theory, impact the rating they provide on the scale (e.g., how beneficial having at least an average level of a given Work Style is for performance vs. how beneficial having a relatively high level of a given Work Style is for performance). If we were to leave this unspecified (e.g., how beneficial a given Work Style is for performance), then our concern would be that respondents could interpret this differently. As such, we added this text to more explicitly focus the respondent on the high end of the given Work Style, which is often implicit but goes unstated in ratings such as this.

Whereas we were largely influenced by Goffin et al. (2011) when creating the scale for evaluating links between Work Styles and GWAs/Work Contexts, we drew largely from TAT and trait relevance when designing the broader set of instructions that accompanied the ratings scales. Specifically, we instructed SMEs to consider each linkage rating a two-part judgment. SMEs were first asked to determine if the Work Style was *relevant* to the given GWA or WC. If the SMEs judged the Work Style to have little or no relevance to the GWA or WC, they were instructed to rate it a zero. The second part of the judgment, determining the direction and strength of the association, was to occur only after the initial evaluation rooted in trait relevance was made. In addition to explaining the two-part nature of the linkage ratings in the instructions, they were also discussed at length during the SME training session preceding the linkage exercise. Appendix A provides a copy of the final set of linkage exercise materials furnished to SMEs.

GWA and Work Contexts Lists for Linkage

The list of O*NET GWAs provided to SMEs for the linkage exercise reflected the 41 GWAs in the O*NET Content Model organized into four higher-order taxonomic categories: Information Input, Mental Processes, Work Output, and Interacting with Others. We created a file consisting of the names and definitions of all 41 GWAs, organized in the same order in which they appear in the Content Model. Appendix A provides a copy of the GWAs used for the linkage exercise.

Some preparation was needed before O*NET Work Contexts were ready for SMEs. There are 57 Work Contexts in the O*NET Content Model, organized into three higher-order taxonomic categories: Interpersonal Relationships, Physical Work Conditions, and Structural Job Characteristics. Unlike GWAs, however, most Work Contexts are not defined in a way that makes them amenable to use in a linkage exercise such as this. For example, most Work Contexts are phrased in the form of questions (e.g., “How important is it to work with external customers or the public in this job?”). Additionally, the definitions of “Work Schedules” (“How regular are the work schedules for this job?”) and “Duration of Typical Work Week” (“Number of hours typically worked in one week.”) are ambiguous, without a clear continuum of magnitude. [Fleisher and Tsacoumis \(2012\)](#) dealt with these issues by rephrasing the question-oriented Work Contexts definitions as statements and splitting the ambiguous Work Contexts into three separate statements each, all of which had clear directions in terms of magnitude (see their Appendix E). We adopted the same approach as [Fleisher and Tsacoumis \(2012\)](#), resulting in a total of 61 Work Contexts for potential linkage to Work Styles. We created a file consisting of the names and the 61 Work Contexts used in the linkage exercise and organized them in the same order in which they appear in the Content Model. Appendix A provides a copy of the Work Contexts used for the linkage exercise, along with a note that explains changes made to the official set of 57 Work Contexts for purposes of the linkage exercise.

Linkage Rating Sheets

SMEs entered their Work Style-GWA and Work Style-WC linkage ratings in a set of Excel tables with validation scripts on the cells to prevent the entry of invalid rating values. One table provided a matrix of Work Style × GWA names, and the other a matrix of Work Style × WC names. Appendix A provides screenshots of a portion of each table to provide clarity on how they were presented to SMEs.

Step 2: Identify, Train, and Calibrate SMEs for the Exercise

We recruited eight SMEs from among HumRRO staff members who had extensive prior knowledge of and experience with O*NET, job analysis, and personality assessment. All SMEs held PhDs in I-O psychology and had at least five years of post-doctoral experience, with some having more than 25 years of experience post-PhD. Four SMEs were men, and four SMEs were women.

A training session was conducted with the SMEs. The session consisted of the following major elements: (a) overview of the nature and purpose of the linkage rating task, (b) review of draft revised Work Styles, (c) review of the O*NET Content Model (to include GWAs/WCs), (d) explanation of the trait relevance concept, (e) walk-through of rating scales and explanation of the judgment process, (f) walk-through of rating examples, (g) explanation of tips for making judgments, (h) review of linkage materials, and (g) a calibration exercise.

The heart of the training session consisted of the walk-through of the rating examples and calibration exercise. After the in-depth review of the rating scales and explanation of the two-step judgmental process, rooted in trait relevance and TAT, SMEs were guided through six rating examples. These examples were systematically chosen to represent three scenarios: (a) a Work Style is judged to be beneficial to performance (i.e., positive rating), (b) a Work Style is judged to be irrelevant to performance (i.e., zero rating), and (c) a Work Style is judged to be detrimental to performance (i.e., negative rating). One example of each rating scenario was presented for both GWAs and WCs.

The calibration exercise followed an explanation of the rating materials. SMEs were given 10 Work Style-GWA/WC pairs, again specifically chosen to vary in the presumed relationship between personality and performance. SMEs first independently rated these pairs, and then we discussed their ratings as a group. The open-ended nature of the discussion allowed the SMEs to organically develop a clearer shared policy about how to approach the task while also engaging the report's two first authors when questions of interpretation arose. Post-training, the authors summarized the results of the discussion via an email to the SME group, along with providing further recommendations for how to approach the task based on points that were raised during the post-calibration discussion.

Key points SMEs were encouraged to keep in mind following the initial training and calibration session were as follows:

1. To the extent the situation implied GWA/Work Context does not allow for the expression of the Work Style, we would trend towards rating it a 0. To the extent the situation implied by the GWA/Work Context allows for expression of the Work Style, it would open up the possibility to rate it as more beneficial or more detrimental. This aspect is aligned with the first part of the “two-part” aspect of the exercise, where the initial judgment regards the relevance of the Work Style to the GWA or WC.

2. To the extent there is more of a correspondence content-wise between the given Work Style and given GWA/WC, it would suggest more extreme ratings (i.e., trending towards either end of the scale). To the extent there is less of a correspondence content-wise between the given Work Style and given GWA/WC, it would suggest less extreme ratings (i.e., trending towards 0). Again, there is a dependency here on the situation reflected in the GWA/WC itself—in that, if the situation itself is constraining, then it would push things more towards the center of the scale (0) regardless.
3. To the extent the Work Style taps into a more universally beneficial or detrimental factor with respect to performance, it would suggest more extreme ratings, but perhaps not as extreme as ratings for Work Styles that are clearly more content/conceptually aligned with the given GWA/WS. However, there is a dependency here on the situation reflected in the GWA/WC itself—in that, if the situation itself is constraining, then it would push things more towards the center of the scale (0) regardless.

SMEs had approximately three weeks to complete their ratings. Raters were encouraged to contact the project team if they had any questions or concerns rather than speaking with each other, as the latter approach could lead to subsets of SMEs developing “sub-policies” that were not shared by the entire group.

Step 3: Gather and Evaluate Initial Linkage Ratings

After SMEs completed their initial linkage ratings, we conducted analyses focused on evaluating pair-level agreement among SMEs’ ratings and potential differences in SMEs’ rating profiles across Work Style-GWA and Work Style-WC pairs rated (e.g., differences in rater means, rater standard deviations, consistency of SME rating profile with the mean across all raters).⁷ A key focus of these analyses was to generate information to (a) help SMEs understand how their individual rating tendencies differed from others’ and (b) identify Work Style-GWA and Work Style-WC pairs where SMEs were in most disagreement and flag those for discussion at a follow-up linkage reconciliation meeting with SMEs.

SMEs rated a total of 861 Work Style-GWA pairs (i.e., 21 Work Styles × 41 GWAs) and 1,281 WS-WC pairs (i.e., 21 Work Styles × 61 WCs). Table 10 provides summary statistics for various indices of pair-level agreement to include (a) range of ratings across SMEs, (b) standard deviation of ratings across SMEs, (c) standard error of the mean rating across SMEs (*SE*), and (d) r_{wg} based on using a uniform distribution assuming a seven-point scale as a referent distribution ($\sigma^2 = 4.0$) ($r_{wg}[U7]$), and (d) r_{wg} based on using a uniform distribution assuming a four-point scale as a referent distribution ($\sigma^2 = 1.25$) ($r_{wg}[U4]$), (James et al., 1984).⁸ For each of these statistics, we report means, standard deviations, and various percentiles (5, 25, 50, 75, 95) across Work Style-GWA pairs and Work Style-WC pairs, respectively.

⁷ Given SMEs’ initial ratings were not ultimately the final ratings that would be published to the O*NET Database, for the sake of parsimony, with the exception of the pairwise-agreement analyses, we do not report out the analyses of the initial ratings here. In a later section, we do present a side-by-side comparison of interrater reliability and agreements statistics for SMEs’ independent, pre-reconciliation linkage ratings and post-reconciliation ratings.

⁸ Although the rating scale used by SMEs consisted of seven scale points, analysis of the ratings revealed only 1.2% of Work Style -GWA and Work Style -WC linkage ratings made across all eight SMEs used the negative part of the rating scale (i.e., ratings of -3, -2, or -1). As such, we felt a fairer referent distribution would be a uniform distribution limited to the top four points on the scale (0, 1, 2, and 3). The r_{wg} we used here to flag pairs compares the variance observed across SMEs ratings for a pair to variance that would be obtained if equal numbers of SMEs gave the pair a rating of 0, 1, 2, and 3.

Table 11. Summary of Agreement Among SMEs' Initial Linkage Ratings for Work Style-GWA and Work Style-WC Pairs

Statistic	<i>M</i>	<i>SD</i>	5 th %ile	25 th %ile	50 th %ile	75 th %ile	95 th %ile
WS-GWA							
Range	1.62	1.07	0.00	1.00	2.00	2.00	3.00
<i>SD</i>	0.62	0.39	0.00	0.35	0.71	0.93	1.19
SE	0.22	0.14	0.00	0.13	0.25	0.33	0.42
$r_{wg}(U7)$	0.87	0.12	0.65	0.79	0.88	0.97	1.00
$r_{wg}(U4)$	0.57	0.38	-0.13	0.31	0.60	0.90	1.00
WS-WC							
Range	1.14	1.16	0.00	0.00	1.00	2.00	3.00
<i>SD</i>	0.44	0.44	0.00	0.00	0.35	0.76	1.19
SE	0.15	0.15	0.00	0.00	0.13	0.27	0.42
$r_{wg}(U7)$	0.90	0.13	0.65	0.86	0.97	1.00	1.00
$r_{wg}(U4)$	0.70	0.40	-0.13	0.54	0.90	1.00	1.00

Note. *n* Work-Style-GWA pairs = 861. *n* Work Style-WC pairs = 1,281.

Inspection of Table 11 reveals that SMEs tended to be in more agreement with their rating of Work Style-WC pairs than they were of Work Style-GWA pairs, regardless of the statistics examined. For purposes of reconciliation, we aimed to flag pairs where the most egregious disagreement was evident among SMEs, and as such, flagged pairs that exhibited a range of greater than two rating points and an $r_{wg}(U4)$ value of less than 0 (i.e., $SD > 1.118$). This yielded 78 Work Style-GWA pairs and 116 Work Style-WC pairs to discuss with SMEs.

Step 4: Discuss Initial Ratings with SMEs and Gather Final Ratings

A reconciliation meeting was conducted with the SMEs after analyzing and reviewing their initial linkage ratings. The purpose of this meeting was not to fully reconcile disagreements but rather to discuss those Work Style -GWA/WC pairs where SMEs were in most disagreement with the aim of identifying patterns of individual differences in how SMEs interpreted initial rating instructions and approached the rating task. The end goal of this meeting was to develop refined guidance that SMEs would consider when making their final set of ratings. The majority of the session was devoted to allowing SMEs to discuss the 78 Work Style-GWA and 116 Work Style-WC pairs that had been flagged previously, with the goal of helping them better understand how they had approached the task and how their rating policies differed from others', and harmonizing rating policies where possible.

After the reconciliation session, SMEs were given two weeks to revisit as many of their ratings as needed in light of the discussion, making whatever changes they desired, if any. Note that SMEs were encouraged to revisit all of their ratings as needed, not just their ratings for pairs that were flagged for discussion. SMEs were provided with the results of initial linkage ratings, so they were aware of how their own rating tendencies compared to those of the other SMEs. A

distillation of the points raised during the reconciliation session was also supplied in the form of additional follow-up guidance.

Key follow-up guidance provided to SMEs after the reconciliation meeting was as follows:

1. Be mindful of your own tendencies and where you tend to differ from other raters—this may be helpful for where you may want to focus on revisiting your ratings.
2. Do not limit yourself to revising your ratings to only those Work Style-GWA or Work Style-WC pairs flagged for discussion at the reconciliation meeting—those were just examples to help better understand your respective policies. Based on the reconciliation meeting discussion and guidance in this document, revisit your ratings for as many Work Style-GWA and Work Style-WC pairs as you see fit.
3. Be aware of how your own personality, organizational position, how we tend to work at HumRRO, and idiosyncratic experiences may be influencing your ratings and aim to minimize their influence on your ratings.
4. To the extent you can, try to avoid having one-off counterfactuals overly influence your ratings, such as: “I know someone who was low on Work Style X, but they were outstanding at performing GWA Y, so I can’t give this a fairly positive rating.” Instead, try to consider more typical cases and not focus on potential rare exceptions that may be more specific to your own experiences.
5. Recognize that some of the GWAs and WCs may come off as double-barreled. When this is the case, try not to overly focus on one element of the given GWA or Work Context but on all elements covered in the definition. Then let your ratings reflect a “mental averaging” that considers all elements in the definition. Some of the differences we saw in ratings stemmed from SMEs focusing on different parts of the definitions.
6. Remember to base your ratings on the definitions of the Work Styles, GWAs, and WCs—the labels for them do not fully convey their meaning and may be interpreted differently by different raters.
7. Remember the focus here is on whether a given Work Style is beneficial/detrimental for the performance of a given GWA or within a given WC. The focus is not on whether the Work Style would increase the likelihood of a person staying/leaving a job or being satisfied/dissatisfied with a job that involves a given GWA or WC.
8. Do not make assumptions that there would be no variance in a Work Style in jobs where a given GWA or WC is present; this is introducing information we do not have. Additionally, one use of O*NET is for career guidance for the *general population*, so it would be best to assume there would be no range restriction on any of the Work Styles relative to the GWAs and WCs. Thus, focus on the question at hand – whether having a high standing on the given Work Style would be beneficial or detrimental to the performance of a given GWA or within a given WC.
9. You should still keep in mind the pre-reconciliation guidance you were provided when revising your ratings (e.g., be sure to use the entire rating scale – to include negative ratings, as appropriate). Nothing about the previous guidance has changed.

Step 5: Evaluate Final Linkage Ratings

Our evaluation of final linkage ratings focused on four areas, all of which helped inform final decisions regarding the composition of the final set of Work Styles we recommended for inclusion in the O*NET Content Model: (a) pair-level agreement for final linkage ratings, (b) interrater reliability and agreement of final linkage rating profiles, (c) an evaluation of the work relevance of each Work Style, and (d) an evaluation of Work Style pairs for potential redundancy. In the following sections, we detail the results of analyses conducted for each of these areas.

Agreement for Work Style-GWA and Work Style-WC Pairs

As a first step in our analyses of final ratings, we replicated the pair-level agreement analyses we conducted for the initial ratings that we summarized in Table 11. Once again, we analyzed pair-level agreement among the eight SMEs' final ratings for each Work Style-GWA and Work Style-WC pair. SMEs rated a total of 861 WS-GWA pairs (i.e., 21 WSs × 41 GWAs) and 1,281 WS-WC pairs (i.e., 21 WSs × 61 WCs). Table 12 provides summary statistics for the same various indices of agreement that we examined for the initial ratings. Once again, for each of these statistics, we report means, standard deviations, and various percentiles (5, 25, 50, 75, 95) across Work Style-GWA pairs and Work Style-WC pairs.

A comparison of results for the final ratings in Table 12 to results for the initial ratings in Table 11 suggests that the reconciliation session was successful in increasing agreement at the pair level. Summaries of the range, standard deviation, and standard error of the mean generally reveal less variation in SMEs' final ratings relative to their initial ratings, while r_{wg} values are clearly higher both on average and across the five percentiles examined for the final ratings relative to the initial ratings.

Table 12. Summary of Agreement Among SMEs' Final Linkage Ratings for Work Style-GWA and Work Style-WC Pairs

Statistic	<i>M</i>	<i>SD</i>	5 th %ile	25 th %ile	50 th %ile	75 th %ile	95 th %ile
WS-GWA							
Range	1.32	0.94	0.00	1.00	1.00	2.00	3.00
<i>SD</i>	0.51	0.34	0.00	0.35	0.53	0.76	0.99
SE	0.18	0.12	0.00	0.13	0.19	0.27	0.35
$r_{wg}(U7)$	0.91	0.08	0.75	0.86	0.93	0.97	1.00
$r_{wg}(U4)$	0.70	0.27	0.21	0.54	0.77	0.90	1.00
WS-WC							
Range	0.93	1.02	0.00	0.00	1.00	2.00	3.00
<i>SD</i>	0.36	0.38	0.00	0.00	0.35	0.71	1.04
SE	0.13	0.13	0.00	0.00	0.13	0.25	0.37
$r_{wg}(U7)$	0.93	0.09	0.73	0.88	0.97	1.00	1.00
$r_{wg}(U4)$	0.79	0.29	0.14	0.60	0.90	1.00	1.00

Note. *n* Work-Style-GWA pairs = 861. *n* Work Style-WC pairs = 1,281.

Post-reconciliation, SMEs were even less likely to use the negative scale points than during the initial rating period. Whereas 1.2% of SMEs' initial Work Style-GWA and Work Style-WC linkage ratings were negative, post-reconciliation only 0.54% of total ratings were negative. This occurred despite the two first authors reminding SMEs to aim to use the entire scale – again, as appropriate, when revisiting their ratings.

In hindsight, the finding that only a small percentage of Work Style-GWA and Work Style-WC linkage ratings was negative, both initially and post-reconciliation, was not completely surprising given that positive correlations between personality and performance are ubiquitous in meta-analytic research (see Tables 2 & 3). We can only speculate as to why SMEs rated a slightly smaller percentage of linkages as negative post-reconciliation than during the first round of ratings. One possibility is that some of the guidelines given to raters post-reconciliation could have resulted in the revision of their initial negative ratings upwards. In particular, recommendations not to be overly influenced by peculiarities such as counterfactuals, anchoring judgments too firmly in one's own personality and experiences, and the presence of range restriction could have led SMEs to think about the GWAs/WCs in a more general way, resulting in the elimination of some of the negative evaluations.

Another possibility may be the level of abstraction reflected in the GWA/WC the SMEs evaluated. For example, it may be possible that certain Work Styles may show negative relations with performance on specific job tasks or in a specific job, but at the GWA/WC level, such relations may not clearly manifest. For example, an important justification for the use of the rating scale we used for this linkage exercise is the empirical and conceptual work that indicates some personality attributes can and do show negative relations to performance for some jobs (e.g., see Tett et al., 1999 for a review). Thus, while negative relations between Work Styles may not manifest for individual GWAs and WCs, when more specific constellations of tasks that comprise a specific job are considered, various Work Styles may indeed exhibit negative relations with performance on that job. These nuances are largely masked by large-scale meta-analytic summaries, such as those presented earlier in Tables 2 and 3. With these arguments in mind, we do not believe that the small percentage of negative ratings observed here was due to a deficiency of our scale, especially given it was based on an existing job analysis instrument (Goffin et al., 2011) for which validity evidence had been previously gathered, as well as the logic/findings elaborated on by Tett et al (1999).

Interrater Reliability and Agreement for Linkage Rating Profiles

We conducted analyses to assess the reliability and absolute agreement among SMEs' final linkage rating profiles. For comparison, we also analyzed SMEs' independent, initial linkage rating profiles. Below, we present two tables of interrater reliability and absolute agreement coefficients that differ depending on whether GWAs or WCs are treated as the targets of measurement.

- Table 13 summarizes reliability and agreement among SMEs' GWA linkage ratings for each Work Style (GWA is the target of measurement). The coefficients in this table estimate how much consistency there was in the rank ordering (and absolute agreement) among SMEs' profiles of GWA linkage ratings for a given Work Style.
- Table 14 summarizes reliability and agreement among SMEs' WC linkage ratings for each Work Style (WC is the target of measurement). The coefficients in this table estimate how much consistency there was in the rank ordering (and absolute agreement) among SMEs' profiles of WC linkage ratings for a given Work Style.

Within each table, ICC(C,1) indicates reliability based on ratings from any given single rater (effectively, the expected correlation GWA/WC linkage rating profiles between any pair of raters), whereas ICC(C,8) indicates the reliability of the mean rating across a sampling of eight raters (effectively, the expected correlation between mean GWA/WC linkage rating profiles based on different samplings of eight raters). Similarly, ICC(A,1) indicates absolute agreement based on ratings from any given single rater, whereas ICC(A,8) indicates absolute agreement based on the mean ratings across a sampling of eight raters. The main difference between consistency (C) and absolute agreement (A) indices is that the former only address differences in rank-ordering of linkage rating profiles, whereas the latter index differences in rank ordering, mean and standard deviation among linkage rating profiles.

Table 13. Interrater Reliability and Agreement for GWA Linkage Ratings by Work Style

Work Style	Initial Ratings				Final Ratings			
	ICC (C,1)	ICC (C,8)	ICC (A,1)	ICC (A,8)	ICC (C,1)	ICC (C,8)	ICC (A,1)	ICC (A,8)
Conscientiousness								
Achievement Orientation	.33	.80	.23	.71	.45	.87	.35	.81
Attention to Detail	.59	.92	.53	.90	.69	.95	.65	.94
Cautiousness	.36	.82	.27	.75	.46	.87	.36	.82
Dependability	.17	.63	.09	.45	.28	.76	.20	.67
Self-Confidence	.40	.84	.28	.75	.51	.89	.37	.83
Extraversion								
Leadership Orientation	.64	.93	.58	.92	.75	.96	.71	.95
Social Orientation	.84	.98	.82	.97	.85	.98	.83	.97
Agreeableness								
Cooperation	.76	.96	.74	.96	.84	.98	.82	.97
Empathy	.77	.96	.74	.96	.87	.98	.86	.98
Humility-Honesty								
Humility	.52	.90	.49	.89	.62	.93	.60	.92
Integrity	.45	.87	.43	.86	.60	.92	.58	.92
Sincerity	.67	.94	.66	.94	.75	.96	.76	.96
Emotional Stability								
Self-Control	.53	.90	.44	.86	.61	.93	.55	.91
Stress Tolerance	.38	.83	.28	.75	.47	.88	.38	.83
Openness								
Adaptability	.41	.85	.35	.81	.55	.91	.51	.89
Innovation	.44	.86	.41	.85	.53	.90	.51	.89
Intellectual Curiosity	.48	.88	.41	.85	.54	.90	.47	.88
Tolerance for Ambiguity	.25	.73	.22	.69	.36	.82	.29	.77
Compounds								
Initiative	.26	.74	.22	.69	.28	.75	.24	.71
Optimism	.59	.92	.56	.91	.68	.95	.67	.94
Perseverance	.18	.64	.14	.57	.31	.78	.27	.74

Table 14. Interrater Reliability and Agreement for WC Linkage Ratings by Work Style

Work Style	Initial Ratings				Final Ratings			
	ICC (C,1)	ICC (C,8)	ICC (A,1)	ICC (A,8)	ICC (C,1)	ICC (C,8)	ICC (A,1)	ICC (A,8)
Conscientiousness								
Achievement Orientation	.51	.89	.48	.88	.62	.93	.59	.92
Attention to Detail	.60	.92	.57	.92	.68	.95	.65	.94
Cautiousness	.49	.89	.42	.85	.65	.94	.63	.93
Dependability	.54	.90	.51	.89	.62	.93	.60	.92
Self-Confidence	.67	.94	.60	.92	.77	.96	.71	.95
Extraversion								
Leadership Orientation	.63	.93	.61	.92	.73	.96	.70	.95
Social Orientation	.76	.96	.75	.96	.80	.97	.79	.97
Agreeableness								
Cooperation	.68	.94	.67	.94	.75	.96	.74	.96
Empathy	.62	.93	.60	.92	.73	.96	.71	.95
Humility-Honesty								
Humility	.30	.77	.29	.76	.43	.86	.42	.85
Integrity	.49	.88	.44	.86	.57	.91	.52	.90
Sincerity	.58	.92	.56	.91	.70	.95	.69	.95
Emotional Stability								
Self-Control	.54	.91	.48	.88	.68	.94	.62	.93
Stress Tolerance	.63	.93	.53	.90	.69	.95	.60	.92
Openness								
Adaptability	.49	.88	.47	.88	.58	.92	.56	.91
Innovation	.34	.80	.32	.79	.48	.88	.47	.88
Intellectual Curiosity	.27	.75	.25	.73	.34	.80	.32	.79
Tolerance for Ambiguity	.41	.85	.38	.83	.55	.91	.51	.89
Compounds								
Initiative	.45	.87	.43	.86	.57	.91	.55	.91
Optimism	.30	.77	.28	.76	.43	.86	.41	.85
Perseverance	.29	.76	.22	.69	.39	.84	.33	.79

Of primary interest in Tables 13 and 14 are the reliability and agreement values derived from SMEs' final ratings, as they index consistency and agreement of evaluations made after the reconciliation session. First, the ICC values are typically higher for these final ratings than the initial ratings, suggesting that the reconciliation session was successful in honing SMEs' policies about relations between the revised Work Styles and GWAs and Work Contexts. Second, the degree of consistency and agreement of the mean ratings for all Work Styles was strong (the lowest being .79) (LeBreton & Senter, 2008), which is of critical importance given that linkage values will ultimately be determined based on average ratings rather than those provided by any single rater.

Evaluating the Work Relevance of the Draft Work Styles

As noted earlier, the aim of this work was to establish an updated set of Work Styles that are relevant to the world of work in that they would be viewed by SMEs as beneficial or detrimental to the performance of work activities and performance in various work contexts. As such, for each Work Style, we examined (a) the mean and standard deviation of linkage ratings across GWA/WCs, (b) the percentage of GWA/WCs positively linked to the given Work Style by SMEs, (c) the number of GWA/WCs negatively linked to the given Work Style by SMEs, and (d) the percentage of GWA/WCs not linked to the given WS by SMEs (see Table 15). For purposes of linkages, we used the following rules:

- **Positively Linked:** At least 5 of 8 SMEs gave the Work Style-GWA/WC pair a positive rating and a mean rating greater than or equal to 1.0.
- **Negatively Linked:** At least 5 of 8 SMEs gave the Work Style-GWA/WC pair a negative rating and a mean rating less than or equal to -1.0.
- **Not Linked:** The given Work Style-GWA/WC pair did not meet positive/negative linkage criteria.

Note, the rules above were designed to mimic the standards O*NET used for considering Abilities/Skills linked to GWAs/WC (i.e., 5 of 8 SMEs who participated in the Abilities/Skills to GWA/WC linkage had to indicate a linkage; Fleisher & Tsacoumis, 2012), but also take advantage of the fact that unlike the Ability/Skill linkage efforts, we had a numeric rating scale on which to scale the strength of the linkage. As such, to consider the Work Style-GWA/WC pair as positively linked, we required not only that at least 5 of 8 SMEs gave the pair a positive rating but also that, on average, SMEs viewed the given Work Style as at least "somewhat beneficial" to the GWA/WC (i.e., mean rating greater than or equal to 1.0). Similarly, to consider a Work Style-GWA/WC pair as negatively linked, we required not only that at least 5 of 8 SMEs gave the pair a negative rating but also that, on average, SMEs viewed the given WS as at least "somewhat detrimental" to the GWA/WC (i.e., mean rating less than or equal to -1.0).

The Work Styles in Table 15 are sorted in descending order of the total number of times they were linked to a GWA or Work Context so that effectively, the most work-relevant Work Styles appear towards the top, and the least work-relevant ones appear towards the bottom.⁹ All Work Styles were linked to at least six GWAs and at least three Work Contexts (respectively), and all Work Styles were linked to at least 12 GWAs and Work Contexts combined. In all but three cases, the linkages between Work Styles and GWAs/WCs were positive. The three exceptions

⁹ The complete, final set of Work Style-GWA linkages and Work Style-Work Context linkages is provided in Appendix B.

were one negative linkage between Cooperation and a Work Context and two negative linkages between Humility and Work Contexts. These results indicate that, overall, all of the revised draft Work Styles are relevant to the world of work insofar as they benefit or detract from performing major types of work activities (GWAs) and performing within major types of work contexts.

Table 15. Summary of GWA and Work Context Linkages by Work Style

Work Styles	Generalized Work Activities					Work Contexts					N _{Total}
	M	SD	n _{Pos}	n _{Neg}	n _{No}	M	SD	n _{Pos}	n _{Neg}	n _{No}	
Attention to Detail	1.67	0.55	34	0	7	0.46	0.36	13	0	48	47
Dependability	1.32	0.69	33	0	8	0.68	0.54	14	0	47	47
Stress Tolerance	0.72	0.59	11	0	30	1.16	0.63	31	0	30	42
Self-Control	0.73	0.51	14	0	27	0.84	0.52	24	0	37	38
Perseverance	0.79	0.64	13	0	28	0.80	0.67	23	0	38	36
Cautiousness	0.78	0.72	18	0	23	0.73	0.57	17	0	44	35
Self-Confidence	1.00	0.75	17	0	24	0.6	0.39	17	0	44	34
Integrity	0.75	0.49	15	0	26	0.39	0.32	14	0	47	29
Adaptability	0.63	0.49	14	0	27	0.34	0.27	12	0	49	26
Cooperation	0.84	0.34	16	0	25	0.35	0.24	9	1	51	26
Empathy	0.65	0.23	13	0	28	0.36	0.23	12	0	49	25
Social Orientation	0.79	0.29	15	0	26	0.35	0.18	10	0	51	25
Leadership Orientation	0.77	0.43	12	0	29	0.44	0.28	12	0	49	24
Sincerity	0.65	0.32	13	0	28	0.34	0.23	11	0	50	24
Achievement Orientation	0.77	0.65	11	0	30	0.36	0.37	10	0	51	21
Optimism	0.56	0.39	12	0	29	0.40	0.44	9	0	52	21
Intellectual Curiosity	0.73	0.61	12	0	29	0.15	0.25	3	0	58	15
Tolerance for Ambiguity	0.55	0.63	6	0	35	0.31	0.35	9	0	52	15
Humility	0.32	0.32	9	0	32	0.09	0.25	3	2	56	14
Initiative	0.55	0.58	7	0	34	0.25	0.25	6	0	55	13
Innovation	0.47	0.46	8	0	33	0.11	0.15	4	0	57	12

Note. M = Average of SMEs' final mean ratings across all Work Style-GWA/WC pairs for a given Work Style. SD = Standard deviation of SMEs' final mean ratings across all Work Style-GWA/WC pairs for a given Work Style. n_{Pos} = Number of positively linked Work Style-GWA/WC pairs for a given Work Style. n_{Neg} = Number of negatively linked Work Style-GWA/WC pairs for a given Work Style. n_{No} = Number of unlinked Work Style-GWA/WC pairs for a given Work Style. n_{Total} = Number of linked Work Style-GWA and Work Style-WC pairs for a given Work Style. Cell values within a given column are highlighted such that larger numbers of linkages are more saturated with green, and smaller numbers of linkages are more saturated with red.

Evaluating the Draft Work Styles for Potential Redundancy

Another important factor to consider when establishing an updated set of Work Styles is whether they are distinct from one another with respect to their relations to GWAs and WCs. As such, for each pair of Work Styles, we examined (a) the correlation and absolute agreement among Work Style linkage rating profiles treating GWAs and WCs as targets of measurement (see Tables 16 and 18, respectively), and (b) the percentage of linkage statuses (i.e., positive, negative, no link) that were the same for each pair of Work Styles across GWAs and WCs (see Tables 17 and 19, respectively).

Table 16. Intercorrelation and Absolute Agreement among Work Style-GWA Linkage Rating Profiles

Work Style	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Leadership Orientation	Social Orientation	Cooperation	Empathy	Humility	Integrity	Sincerity	Self-Control	Stress Tolerance	Adaptability	Innovation	Intellectual Curiosity	Tolerance for Ambiguity	Initiative	Optimism	Perseverance
Conscientiousness																					
Achievement Orientation	--	.00	-.29	.00	.32	.36	-.01	-.03	-.02	-.09	-.12	-.07	-.13	-.10	.40	.44	.47	.36	.50	.09	.07
Attention to Detail	.00	--	.28	.09	-.20	-.26	-.37	-.37	-.32	-.16	-.11	-.30	-.34	-.20	-.28	-.08	.03	-.05	-.10	-.29	-.14
Cautiousness	-.28	.51	--	.13	-.36	-.47	-.53	-.48	-.44	-.32	-.11	-.42	-.26	-.03	-.69	-.43	-.30	-.27	-.46	-.51	-.06
Dependability	-.01	.13	.22	--	.09	.16	.17	.24	.21	.15	.18	.20	.22	.18	.01	-.12	-.09	-.07	.10	.14	.09
Self-Confidence	.34	-.28	-.37	.12	--	.60	.53	.48	.46	.15	.47	.49	.54	.49	.55	.34	.31	.47	.24	.61	.42
Extraversion																					
Leadership Orientation	.41	-.38	-.50	.28	.67	--	.72	.72	.68	.37	.50	.63	.62	.43	.52	.16	.09	.26	.36	.68	.22
Social Orientation	-.02	-.52	-.58	.30	.61	.72	--	.95	.90	.56	.63	.88	.78	.49	.53	.01	-.03	.13	.33	.85	.27
Agreeableness																					
Cooperation	-.04	-.51	-.53	.41	.54	.72	.95	--	.93	.60	.66	.91	.78	.50	.51	.00	-.05	.12	.34	.81	.24
Empathy	-.03	-.53	-.47	.41	.54	.68	.92	.96	--	.68	.69	.96	.85	.57	.57	.02	-.05	.18	.38	.89	.33
Humility-Honesty																					
Humility	-.12	-.45	-.40	.45	.24	.47	.74	.82	.80	--	.46	.71	.55	.25	.38	-.12	-.03	.02	.40	.61	.03
Integrity	-.12	-.18	-.11	.31	.50	.51	.66	.70	.71	.56	--	.74	.65	.49	.31	-.12	-.09	.18	.25	.62	.19
Sincerity	-.07	-.49	-.44	.37	.57	.64	.90	.94	.96	.84	.75	--	.83	.53	.51	-.01	-.02	.18	.34	.86	.23
Emotional Stability																					
Self-Control	-.13	-.56	-.26	.39	.58	.64	.83	.83	.87	.66	.65	.85	--	.82	.55	.01	-.13	.22	.26	.87	.51
Stress Tolerance	-.10	-.41	-.03	.34	.55	.50	.60	.61	.66	.31	.51	.60	.87	--	.43	.03	-.21	.33	.09	.64	.69
Openness																					
Adaptability	.42	-.56	-.68	.02	.64	.55	.59	.58	.59	.43	.31	.53	.56	.44	--	.70	.46	.56	.62	.72	.44
Innovation	.50	-.20	-.47	-.30	.46	.18	.02	.01	.02	-.12	-.13	-.01	.01	.04	.72	--	.66	.66	.35	.22	.28
Intellectual Curiosity	.48	.05	-.29	-.15	.34	.09	-.04	-.05	-.05	-.04	-.09	-.02	-.13	-.21	.46	.71	--	.38	.46	.06	.17
Tolerance for Ambiguity	.39	-.13	-.29	-.17	.64	.32	.17	.17	.21	.02	.20	.21	.24	.35	.59	.68	.42	--	.17	.30	.35
Compounds																					
Initiative	.55	-.30	-.52	.25	.34	.49	.48	.50	.49	.46	.30	.44	.31	.10	.67	.37	.53	.17	--	.40	.19
Optimism	.10	-.55	-.53	.29	.74	.71	.91	.89	.91	.66	.64	.88	.89	.70	.72	.23	.06	.32	.46	--	.43
Perseverance	.07	-.31	-.07	.15	.47	.28	.35	.31	.41	.04	.21	.29	.56	.70	.48	.33	.18	.39	.22	.52	--

Note. Values below the diagonal reflect intercorrelations among Work Style-GWA linkage profiles ($n = 41$, units of analysis for correlations are GWAs). Values above the diagonal reflect absolute agreement indices (ICC[A,1]) among Work Style-GWA linkage profiles ($n = 41$, units of analysis for correlations are GWAs). Cell values are highlighted such that more positive correlations/agreement indices are more saturated with green, and more negative correlations/agreement indices are more saturated with red.

Table 17. Percentage of Identical Linkage Statuses among Work Style Pairs Across GWAs

Work Style	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Leadership Orientation	Social Orientation	Cooperation	Empathy	Humility	Integrity	Sincerity	Self-Control	Stress Tolerance	Adaptability	Innovation	Intellectual Curiosity	Tolerance for Ambiguity	Initiative	Optimism	Perseverance
Conscientiousness																					
Achievement Orientation	--																				
Attention to Detail	34.2	--																			
Cautiousness	34.2	51.2	--																		
Dependability	31.7	78.1	39.0	--																	
Self-Confidence	70.7	39.0	34.2	46.3	--																
Extraversion																					
Leadership Orientation	78.1	31.7	31.7	43.9	73.2	--															
Social Orientation	61.0	34.2	24.4	51.2	80.5	78.1	--														
Agreeableness																					
Cooperation	58.5	36.6	22.0	53.7	78.1	80.5	97.6	--													
Empathy	65.9	29.3	29.3	46.3	80.5	78.1	95.1	92.7	--												
Humility-Honesty																					
Humility	65.9	24.4	39.0	41.5	75.6	68.3	85.4	82.9	90.2	--											
Integrity	56.1	34.2	43.9	46.3	80.5	63.4	80.5	78.1	85.4	80.5	--										
Sincerity	61.0	29.3	34.2	46.3	80.5	73.2	90.2	87.8	95.1	90.2	85.4	--									
Emotional Stability																					
Self-Control	68.3	31.7	31.7	48.8	82.9	80.5	92.7	90.2	97.6	87.8	82.9	92.7	--								
Stress Tolerance	70.7	29.3	39.0	41.5	80.5	82.9	85.4	82.9	90.2	80.5	75.6	85.4	92.7	--							
Openness																					
Adaptability	78.1	26.8	31.7	39.0	78.1	80.5	82.9	80.5	87.8	78.1	73.2	82.9	90.2	87.8	--						
Innovation	87.8	26.8	41.5	24.4	73.2	80.5	63.4	61.0	68.3	63.4	58.5	63.4	70.7	78.1	80.5	--					
Intellectual Curiosity	82.9	36.6	46.3	34.2	63.4	65.9	58.5	56.1	58.5	63.4	48.8	58.5	61.0	63.4	70.7	75.6	--				
Tolerance for Ambiguity	78.1	22.0	51.2	24.4	73.2	75.6	58.5	56.1	63.4	63.4	63.4	68.3	65.9	73.2	70.7	90.2	70.7	--			
Compounds																					
Initiative	80.5	24.4	43.9	31.7	61.0	68.3	70.7	68.3	75.6	80.5	65.9	75.6	73.2	75.6	78.1	78.1	78.1	73.2	--		
Optimism	68.3	26.8	31.7	43.9	82.9	75.6	92.7	90.2	97.6	92.7	87.8	92.7	95.1	87.8	85.4	70.7	61.0	65.9	78.1	--	
Perseverance	70.7	34.2	53.7	36.6	65.9	63.4	61.0	58.5	65.9	61.0	61.0	61.0	68.3	75.6	73.2	78.1	73.2	73.2	70.7	68.3	--

Note. Values reflect the percentage of Work Style-GWA linkage statuses for a given pair of Work Styles that were identical (i.e., percentage of GWAs [out of 41] for which both Work Styles were either both positively linked, both negatively linked, or both not linked). Cell values are highlighted such that higher percentages of agreement are more saturated with green, and lower percentages of agreement are more saturated with red.

Table 18. Intercorrelation and Absolute Agreement among Work Style-Work Context Linkage Rating Profiles

Work Style	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Leadership Orientation	Social Orientation	Cooperation	Empathy	Humility	Integrity	Sincerity	Self-Control	Stress Tolerance	Adaptability	Innovation	Intellectual Curiosity	Tolerance for Ambiguity	Initiative	Optimism	Perseverance
Conscientiousness																					
Achievement Orientation	--	.65	.04	.67	.64	.64	.09	.10	.09	-.15	.52	.16	.28	.21	.54	.54	.60	.55	.86	.28	.27
Attention to Detail	.65	--	.33	.81	.60	.60	.18	.29	.32	.16	.70	.40	.27	.19	.32	.23	.44	.36	.49	.25	.17
Cautiousness	.05	.36	--	.25	.14	.13	-.14	-.03	.06	-.06	.17	-.01	.27	.52	-.10	-.02	.06	.04	-.03	.00	.42
Dependability	.76	.85	.25	--	.72	.69	.30	.42	.38	.14	.64	.42	.46	.32	.45	.23	.33	.43	.56	.36	.31
Self-Confidence	.70	.62	.14	.72	--	.86	.58	.54	.60	.04	.79	.65	.76	.49	.71	.34	.45	.60	.61	.68	.32
Extraversion																					
Leadership Orientation	.66	.60	.14	.72	.88	--	.46	.58	.67	.02	.86	.65	.60	.39	.70	.42	.47	.68	.68	.60	.25
Social Orientation	.09	.18	-.16	.32	.61	.46	--	.87	.82	.45	.60	.87	.51	.15	.62	.07	.22	.33	.29	.79	.00
Agreeableness																					
Cooperation	.10	.29	-.03	.46	.57	.58	.87	--	.93	.53	.71	.90	.52	.17	.63	.08	.21	.45	.36	.75	.04
Empathy	.09	.32	.07	.42	.64	.67	.82	.93	--	.39	.80	.91	.59	.26	.65	.15	.25	.54	.32	.79	.09
Humility-Honesty																					
Humility	-.18	.21	-.12	.24	.07	.03	.56	.65	.48	--	.26	.52	.04	-.07	.14	-.16	-.02	.06	-.01	.28	-.11
Integrity	.52	.71	.20	.72	.85	.89	.61	.73	.81	.32	--	.82	.54	.28	.74	.40	.57	.72	.63	.71	.15
Sincerity	.16	.41	-.01	.48	.71	.67	.87	.91	.91	.62	.83	--	.52	.19	.65	.16	.31	.50	.37	.82	.01
Emotional Stability																					
Self-Control	.35	.31	.27	.46	.79	.67	.61	.62	.71	.08	.68	.66	--	.78	.52	.16	.20	.41	.30	.62	.56
Stress Tolerance	.34	.27	.58	.37	.60	.54	.22	.26	.40	-.19	.46	.30	.84	--	.24	.10	.12	.24	.16	.30	.67
Openness																					
Adaptability	.54	.33	-.12	.54	.80	.74	.64	.65	.66	.16	.74	.65	.69	.42	--	.53	.57	.85	.75	.79	.16
Innovation	.74	.36	-.03	.48	.65	.69	.11	.12	.21	-.17	.56	.22	.39	.36	.69	--	.82	.60	.71	.27	.10
Intellectual Curiosity	.78	.65	.13	.64	.80	.72	.31	.29	.34	-.02	.74	.40	.46	.38	.71	.82	--	.61	.75	.39	.10
Tolerance for Ambiguity	.55	.38	.05	.52	.70	.73	.34	.47	.55	.07	.72	.50	.56	.43	.85	.76	.73	--	.73	.58	.19
Compounds																					
Initiative	.89	.54	-.05	.75	.77	.78	.32	.39	.35	-.01	.66	.38	.46	.33	.77	.82	.83	.74	--	.48	.18
Optimism	.28	.26	.00	.44	.80	.67	.86	.82	.84	.35	.72	.85	.86	.56	.80	.36	.49	.59	.50	--	.24
Perseverance	.35	.19	.45	.33	.35	.30	.00	.05	.11	-.23	.18	.02	.60	.82	.20	.26	.23	.26	.27	.30	--

Note. Values below the diagonal reflect intercorrelations among Work Style-Work Context linkage profiles ($n = 61$, units of analysis for correlations are Work Contexts). Values above the diagonal reflect absolute agreement indices (ICC[A,1]) among Work Style-Work Context linkage profiles ($n = 61$, units of analysis for correlations are Work Contexts). Cell values are highlighted such that more positive correlations/agreement indices are more saturated with green, and more negative correlations/agreement indices are more saturated with red.

Table 19. Percentage of Identical Linkage Statuses among Work Style Pairs Across Work Contexts

Work Style	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Leadership Orientation	Social Orientation	Cooperation	Empathy	Humility	Integrity	Sincerity	Self-Control	Stress Tolerance	Adaptability	Innovation	Intellectual Curiosity	Tolerance for Ambiguity	Initiative	Optimism	Perseverance
Conscientiousness																					
Achievement Orientation	--																				
Attention to Detail	91.8	--																			
Cautiousness	72.1	67.2	--																		
Dependability	90.2	95.1	65.6	--																	
Self-Confidence	85.3	83.6	60.7	88.5	--																
Extraversion																					
Leadership Orientation	86.9	85.3	65.6	86.9	91.8	--															
Social Orientation	70.5	72.1	55.7	77.1	82.0	80.3	--														
Agreeableness																					
Cooperation	75.4	75.4	59.0	77.1	83.6	85.3	93.4	--													
Empathy	73.8	75.4	62.3	77.1	85.3	86.9	93.4	93.4	--												
Humility-Honesty																					
Humility	77.1	77.1	65.6	75.4	77.1	82.0	85.3	88.5	83.6	--											
Integrity	83.6	85.3	65.6	86.9	95.1	93.4	83.6	86.9	90.2	80.3	--										
Sincerity	75.4	77.1	60.7	82.0	86.9	85.3	95.1	95.1	91.8	83.6	88.5	--									
Emotional Stability																					
Self-Control	70.5	68.9	65.6	73.8	85.3	77.1	73.8	75.4	77.1	65.6	80.3	78.7	--								
Stress Tolerance	59.0	57.4	63.9	62.3	70.5	65.6	59.0	57.4	62.3	50.8	65.6	60.7	82.0	--							
Openness																					
Adaptability	77.1	75.4	55.7	77.1	88.5	90.2	86.9	88.5	86.9	85.3	90.2	85.3	73.8	59.0	--						
Innovation	86.9	78.7	65.6	80.3	78.7	86.9	80.3	82.0	77.1	86.9	80.3	78.7	63.9	52.5	86.9	--					
Intellectual Curiosity	88.5	80.3	67.2	78.7	77.1	85.3	78.7	80.3	75.4	88.5	78.7	77.1	62.3	50.8	85.3	98.4	--				
Tolerance for Ambiguity	82.0	80.3	67.2	82.0	83.6	91.8	78.7	78.7	82.0	82.0	88.5	80.3	68.9	57.4	88.5	88.5	86.9	--			
Compounds																					
Initiative	90.2	85.3	65.6	83.6	82.0	90.2	80.3	82.0	77.1	86.9	83.6	82.0	67.2	55.7	86.9	93.4	95.1	85.3	--		
Optimism	72.1	73.8	60.7	78.7	86.9	85.3	95.1	91.8	91.8	88.5	88.5	93.4	75.4	60.7	91.8	82.0	80.3	83.6	82.0	--	
Perseverance	62.3	60.7	70.5	62.3	63.9	65.6	55.7	57.4	59.0	60.7	62.3	57.4	75.4	80.3	59.0	62.3	60.7	67.2	59.0	60.7	--

Note. Values reflect the percentage of Work Style-Work Context linkage statuses for a given pair of Work Styles that were identical (i.e., percentage of Work Contexts [out of 61] for which both Work Styles were either both positively linked, both negatively linked, or both not linked). Cell values are highlighted such that higher percentages of agreement are more saturated with green, and lower percentages of agreement are more saturated with red.

A review of Tables 16 through 19 revealed there was a constellation of three interpersonally oriented Work Styles that exhibited substantial degrees of overlap with respect to their GWA *and* WC linkage rating profiles (correlations *and* agreement values .90 or above) *and* pattern of identical GWA *and* WC linkages and non-linkages (percentages of identical linkage status 87% or above for GWAs and WCs);, namely Cooperation, Empathy, and Sincerity.

Cooperation had GWA and WC linkage rating profiles that correlated .90 or above with both GWA and WC linkage rating profiles for Empathy and Sincerity. Absolute agreement among these profiles was also at .90 or above. Cooperation had linkage statuses that matched with Empathy and Sincerity linkage statuses between 87.8% (Cooperation-Sincerity WC linkages) and 95.1% (Cooperation-Sincerity WC linkages) of the time. Empathy had GWA and WC linkage rating profiles that correlated .90 or above with both GWA and WC linkage rating profiles for Sincerity. Absolute agreement values among these profiles were also all .90 or above. Empathy had linkage statuses that matched with Sincerity linkage statuses between 91.8% (Empathy-Sincerity WC linkages) and 95.1% (Empathy-Sincerity GWA linkages) of the time.

It is not surprising to see the high extent of overlap among these dimensions, given they all represent positive interpersonal attributes that fall under the general related domains of Agreeableness and Honesty-Humility. Upon discussion of these results, we recommended retaining all three of these dimensions for three reasons. First, the dimensions tie back to distinct elements of established personality models (e.g., Cooperation and Empathy having a nexus to the Politeness and Compassion aspects of the Big Five Agreeableness domain, and Sincerity having a nexus to the Sincerity facet of the HEXACO Honesty-Humility domain). Second, though the linkage rating profiles and patterns for these looked similar with respect to differentiating GWAs and Work Contexts, the project team could envision occupations where being cooperative vs. being empathetic vs. being sincere could be differentially related to job performance. Indeed, even with a correlation of .90 between linkage profiles, it is important to remember that correlation translates into 19% unique variance in the linkage profiles. As such, we felt it important to carry all three forward for evaluation and rating for actual O*NET occupations. As part of a future effort, we recommend that the Center gather a representative sample of all O*NET occupations and revisit the potential redundancy of this set of Work Styles for uniquely differentiating those occupations. Lastly, there was interest from the Center at the outset of the effort in avoiding having higher-order Work Styles defined by a single lower-order dimension (as was the case with the current set of Work Styles reflected in O*NET in early 2024). Eliminating Cooperation or Empathy would have dropped the Agreeableness higher-order dimension down to one, so there was a desire to retain both for this reason and their clear nexus to the Big Five Agreeableness aspects noted above.

Beyond the constellation of interpersonally oriented Work Styles above, there were no other pairs of Work Styles that met the full set of “substantial degrees of overlap” threshold with respect to their GWA *and* WC linkage rating profiles (correlations *and* agreement values .90 or above) *and* pattern of identical GWA *and* WC linkages and non-linkages (percentages of identical linkage status 87% or above for GWAs and WCs). As such, we were reluctant to recommend the combination or dropping of any of the remaining revised Work Styles based on the results above, as we felt there was sufficient evidence that they were not empirically redundant.

Finalizing Work Styles for the O*NET Content Model

Upon completing the analyses summarized above, HumRRO recommended all 21 draft Work Styles considered above be retained as the final set of Work Styles for the O*NET Content Model with no modifications. All Work Styles were linked to at least six GWAs, and at least three Work Contexts (respectively), and all Work Styles were linked to at least 12 GWAs and Work Contexts combined. To the extent such GWAs are important to the performance of a given O*NET occupation, it would imply that the given Work Style would be relevant to performance in that occupation as well. Thus, we were reluctant to cut any of the 21 Work Styles considered. Furthermore, though analyses of the Work Styles for potential empirical redundancy revealed very high levels of overlap among linkage rating profiles and linkage patterns for a constellation of three interpersonally oriented Work Styles (Cooperation, Empathy, and Sincerity) for the reasons noted earlier, we recommended that the Center move forward with all three of them, but revisit them in a future effort that gathers ratings for them for a representative sample of O*NET occupations. Doing so would allow the Center to revisit whether each of these Work Styles has value for uniquely differentiating occupations. Given no adjustments were made to the draft revised set of Work Style based on the analyses above the final set of revised Work Styles reflects the draft set shown earlier in Table 9.

Lastly, we prepared five data files that were delivered with this report. The first three files below are designed for potential future publication to the O*NET Database, and the last two files below are research datasets designed for publication along with this report on the O*NET Resource Center. All of these files are based on SMEs' final post-reconciliation ratings.

1. **Work Style Names and Descriptions for O*NET Content Model Reference:** Rows in this file reflect the names and descriptions of the revised higher-order and lower-order O*NET Work Style dimensions for addition to the O*NET Content Model.
2. **Work Styles to Work Activities:** Rows in this file are limited to Work Style-GWA pairs that were positively or negatively linked by SMEs based on the criteria above (i.e., at least 5/8^{ths} of SMEs rated as positive and a mean linkage rating greater than or equal to 1.0, or at least 5/8^{ths} of SMEs rated as negative and a mean linkage rating less than or equal to -1.0). Columns include (a) the direction of the linkage (positive, negative), (b) the mean rating across all SMEs, (c) the standard error of the mean rating across all SMEs, and (d) the percentage of SMEs who linked the pair in the given direction.
3. **Work Styles to Work Contexts:** Rows in this file are limited to Work Style-Work Context pairs that were positively or negatively linked by SMEs based on the criteria above. Columns include (a) the direction of the linkage (positive, negative), (b) the mean rating across all SMEs, (c) the standard error of the mean rating across all SMEs, and (c) the percentage of SMEs who linked the pair in the given direction.

In addition to the three files above, we are also providing the following two research datasets to be published alongside this report on the O*NET Resource Center. The purpose of these research datasets is to provide future researchers with more complete linkage rating data to support future research and exploration of additional potential use cases for these data.

4. **Work Style-Work Activity Linkage Research Dataset:** Unlike the Work Style-Generalized Work Activity Linkages file, rows in this file reflect all Work Style-GWA pairs (i.e., it is not limited to linked pairs only). Columns include (a) linkage status (positive, negative, no linkage), (b) the mean rating across all SMEs, (c) the standard error of the

mean rating across all SMEs, and (d) the percentages of SMEs who gave the pair a positive, negative, and zero rating (respectively).

5. **Work Style-Work Context Linkage Research Dataset:** Unlike the Work Style-Work Context Linkages file, rows in this file reflect all WS-WC pairs (i.e., it is not limited to linked pairs only). Columns include (a) linkage status (positive, negative, no linkage), (b) the mean rating across all SMEs, (c) the standard error of the mean rating across all SMEs, and (d) the percentages of SMEs who gave the pair a positive, negative, and zero rating (respectively).

References

*References with an asterisk included personality dimensions that were embedded for purposes of cluster analyses.

- *Ashton, M. C., Lee, K., & De Vries, R. E. (2014). The HEXACO honesty-humility, agreeableness, and emotionality factors: A review of research and theory. *Personality and Social Psychology Review, 18*(2), 139-152. <https://doi.org/10.1177/1088868314523838>
- *Bader, M., Hartung, J., Hilbig, B. E., Zettler, I., Moshagen, M., & Wilhelm, O. (2021). Themes of the dark core of personality. *Psychological Assessment, 33*(6), 511–525. <https://doi.org/10.1037/pas0001006>
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology, 44*(1), 1-26. <https://doi.org/10.1111/j.1744-6570.1991.tb00688.x>
- Bono, J. E., & Judge, T. A. (2004). Personality and transformational and transactional leadership: A meta-analysis. *Journal of Applied Psychology, 89*(5), 901–910. <https://doi.org/10.1037/0021-9010.89.5.901>
- Borman, W. C., Jeanneret, P. R., Kubisiak, U. C., & Hanson, M. A. (1997). Work contexts: Evidence for the reliability and validity of the measures. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, E. A. Fleishman, & K. Y. Levin (Eds.), *O*NET final technical report* (pp. 472-618). <https://www.onetcenter.org/reports/Final.html>
- Borman, W. C., Kubisiak, U. C., & Schneider, R. J. (1999). Work styles. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, & E. A. Fleishman (Eds.), *An occupational information system for the 21st century: The development of O*NET* (pp. 213–226). American Psychological Association.
- Borman, W. C., McKee, A. S., & Schneider, R. J. (1995). Work styles. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, & E. A. Fleishman (Eds.), *Development of prototype Occupational Information Network (O*NET) Content Model*. (Vol. 1, pp. 619-670). Utah Department of Workforce Services.
- Card, N. A. (2011). *Applied meta-analysis for social science research*. Guilford Press.
- Choi, D., Oh, I.-S., & Colbert, A. E. (2015). Understanding organizational commitment: A meta-analytic examination of the roles of the five-factor model of personality and culture. *Journal of Applied Psychology, 100*(5), 1542–1567. <https://doi.org/10.1037/apl0000014>
- Condon, D. M. (2017). The SAPA Personality Inventory: An empirically-derived, hierarchically-organized self-report personality assessment model. *Scholars' Bank, University of Oregon*. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/27238>
- Dahlke, J. A., Putka, D. J., Shewach, O. R., & Lewis, P. (2022). *Developing related occupations for the O*NET program*. National Center for O*NET Development. https://www.onetcenter.org/reports/Related_2022.html

- Deming, D. J. (2022). Four facts about human capital. *Journal of Economic Perspectives*, 36(3), 75-102. <https://doi.org/10.1257/jep.36.3.75>
- DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology*, 91(6), 1138–1151. <https://doi.org/10.1037/0022-3514.91.6.1138>
- DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology*, 93(5), 880-896. <https://doi.org/10.1037/0022-3514.93.5.880>
- DeYoung, C. G., Quilty, L. C., Peterson, J. B., & Gray, J. R. (2014). Openness to experience, intellect, and cognitive ability. *Journal of Personality Assessment*, 96(1), 46-52. <https://doi.org/10.1080/00223891.2013.806327>
- Devlin, J., Chang, M.-W., Lee, K., & Toutanova, K. (2019). *BERT: Pre-training of deep bidirectional transformers for language understanding*. ArXiv:1810.04805 [Cs]. <http://arxiv.org/abs/1810.04805>
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology*, 73(6), 1246–1256. <https://doi.org/10.1037/0022-3514.73.6.1246>
- *Dragow, F., Chernyshenko, O. S., Stark, S., & Nye, C. D. (2023). *Tailored Adaptive Personality Assessment System (TAPAS) pre-implementation documentation (AFRL-RH-WP-TR-2023-0014)*. Air Force Research Laboratory. <https://apps.dtic.mil/sti/trecms/pdf/AD1201233.pdf>
- Feher, A., & Vernon, P. A. (2021). Looking beyond the Big Five: A selective review of alternatives to the Big Five model of personality. *Personality and Individual Differences*, 169, 110002. <https://doi.org/10.1016/j.paid.2020.110002>
- Fleisher, M. S., & Tsacoumis, S. (2012). *O*NET analyst occupational abilities ratings: Procedures update*. National Center for O*NET Development. <https://www.onetcenter.org/reports/AnalystProcUpdate.html>
- Fleisher, M. S., & Tsacoumis, S. (2018). *O*NET analyst occupational skills ratings: Procedures update*. National Center for O*NET Development. https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html
- Fraboni, M. F. (1995). *Personality-oriented job analysis* (Doctoral dissertation). University of Western Ontario.
- Goffin, R. D., Rothstein, M. G., Rieder, M. J., Poole, A., Krajewski, H. T., Powell, D. M., & Mestdagh, T. (2011). Choosing job-related personality traits: Developing valid personality-oriented job analysis. *Personality and Individual Differences*, 51(5), 646-651. <https://doi.org/10.1016/j.paid.2011.06.012>
- Goldberg, L. R. (2006). Doing it all bass-ackwards: The development of hierarchical factor structures from the top down. *Journal of Research in Personality*, 40(4), 347-358. <https://doi.org/10.1016/j.jrp.2006.01.001>

- Haaland, S., & Christiansen, N. D. (2002). Implications of trait-activation theory for evaluating the construct validity of assessment center ratings. *Personnel Psychology*, 55(1), 137-163. <https://doi.org/10.1111/j.1744-6570.2002.tb00106.x>
- *He, Y., Donnellan, M. B., & Mendoza, A. M. (2019). Five-factor personality domains and job performance: A second order meta-analysis. *Journal of Research in Personality*, 82, 103848. <https://doi.org/10.1016/j.jrp.2019.103848>
- Hogan, J., & Holland, B. (2002, April). *Evaluating personality-based job requirements* [Paper presentation]. Society for Industrial and Organizational Psychology 2019 Conference, Toronto, Canada.
- Hough, L. M., Oswald, F. L., & Ock, J. (2015). Beyond the Big Five: New directions for personality research and practice in organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 183-209. <https://doi.org/10.1146/annurev-orgpsych-032414-111441>
- Hough, L. M., & Schneider, R. J. (1996). Personality traits, taxonomies, and applications in organizations. In K. R. Murphy (Ed.), *Individuals and behavior in organizations* (pp. 31-88). Jossey-Bass.
- Hubbard, M., McCloy, R., Campbell, J., Nottingham, J., Lewis, P., Rivkin, D., & Levine, J. (2000). *Revision of O*NET data collection instruments*. National Center for O*NET Development. https://www.onetcenter.org/reports/Data_appnd.html
- *Irwing, P., Hughes, D. J., Tokarev, A., & Booth, T. (2023). Towards a taxonomy of personality facets. *European Journal of Personality*, 38(3), 494-515. <https://doi.org/10.1177/08902070231200919>
- James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69(1), 85–98. <https://doi.org/10.1037/0021-9010.69.1.85>
- Jiang, A. Q., Sablayrolles, A., Mensch, A., Bamford, C., Chaplot, D. S., Casas, D. D. L., , & Sayed, W. E. (2023). *Mistral 7B*. <https://doi.org/10.48550/arXiv.2310.06825>
- Johnson, J. W. (2001). The relative importance of task and contextual performance dimensions to supervisor judgments of overall performance. *Journal of Applied Psychology*, 86(5), 984–996. <https://doi.org/10.1037/0021-9010.86.5.984>
- *Judge, T. A., Rodell, J. B., Klinger, R. L., Simon, L. S., & Crawford, E. R. (2013). Hierarchical representations of the five-factor model of personality in predicting job performance: Integrating three organizing frameworks with two theoretical perspectives. *Journal of Applied Psychology*, 98(6), 875–925. <https://doi.org/10.1037/a0033901>
- Judge, T. A., & Zapata, C. P. (2015). The person–situation debate revisited: Effect of situation strength and trait activation on the validity of the Big Five personality traits in predicting job performance. *Academy of Management Journal*, 58(4), 1149-1179. <https://doi.org/10.5465/amj.2010.0837>

- *Kantrowitz, T., Kingry, D., Madaj, C., & Nye, C. (2019). *Navy Computerized Adaptive Personality Scales (NCAPS) and Self Description Inventory (SDI) wind down and merger with Tailored Adaptive Personality Assessment System (TAPAS)*. Personnel Decisions Research Institutes. <https://apps.dtic.mil/sti/pdfs/AD1091172.pdf>
- Kautz, T., Heckman, J. J., Diris, R., ter Weel, B., & Borghans, L. (2014). Fostering and measuring skills: Improving cognitive and non-cognitive skills to promote lifetime success. *National Bureau of Economic Research*. <https://doi.org/10.3386/w20749>
- Lang, J. W., Kersting, M., & Beauducel, A. (2016). Hierarchies of factor solutions in the intelligence domain: Applying methodology from personality psychology to gain insights into the nature of intelligence. *Learning and Individual Differences*, 47, 37-50. <https://doi.org/10.1016/j.lindif.2015.12.003>
- Le, H., Oh, I.-S., Robbins, S. B., Ilies, R., Holland, E., & Westrick, P. (2011). Too much of a good thing: Curvilinear relationships between personality traits and job performance. *Journal of Applied Psychology*, 96(1), 113–133. <https://doi.org/10.1037/a0021016>
- Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes*, 112(2), 112-125. <https://doi.org/10.1016/j.obhdp.2010.02.003>
- LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*, 11(4), 815-852. <https://doi.org/10.1177/1094428106296642>
- *Lee, K., & Ashton, M. C. (2009). Scale descriptions. *The HEXACO Personality Inventory - Revised*. <https://www.hexaco.org/scaledescriptions>
- Lievens, F., Chasteen, C. S., Day, E. A., & Christiansen, N. D. (2006). Large-scale investigation of the role of trait activation theory for understanding assessment center convergent and discriminant validity. *Journal of Applied Psychology*, 91(2), 247-258. <https://doi.org/10.1037/0021-9010.91.2.247>
- MacCann, C., Duckworth, A. L., & Roberts, R. D. (2009). Empirical identification of the major facets of conscientiousness. *Learning and Individual Differences*, 19(4), 451-458. <https://doi.org/10.1016/j.lindif.2009.03.007>
- McCrae, R. R. (2015). A more nuanced view of reliability: Specificity in the trait hierarchy. *Personality and Social Psychology Review*, 19(2), 97-112.
- *Moshagen, M., Hilbig, B. E., & Zettler, I. (2018). The dark core of personality. *Psychological Review*, 125(5), 656–688. <https://doi.org/10.1037/rev0000111>
- *Moshagen, M., Zettler, I., & Hilbig, B. E. (2020). Measuring the dark core of personality. *Psychological Assessment*, 32(2), 182– 196. <https://doi.org/10.1037/pas0000778>

- *Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science*, 12(2), 183-204. <https://doi.org/10.1177/174569161666660>
- Mussel, P., & Spengler, M. (2015). Investigating intellect from a trait activation perspective: Identification of situational moderators for the correlation with work-related criteria. *Journal of Research in Personality*, 55, 51-60. <https://doi.org/10.1016/j.jrp.2015.01.002>
- *National Center for O*NET Development (2024). *O*NET 28.3 Database*. O*NET Resource Center. Retrieved June 13, 2024, from <https://www.onetcenter.org/database.html>
- Ng, T. W., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Predictors of objective and subjective career success: A meta-analysis. *Personnel Psychology*, 58(2), 367-408. <https://doi.org/10.1111/j.1744-6570.2005.00515.x>
- *Nye, C. D., Omori, C. L., Drasgow, F., Chernyshenko, O. S., & Stark, S. (2023). *Non-cognitive predictors of performance in close combat jobs* (Research Note 2023-17). United States Army Research Institute for the Behavioral and Social Sciences. <https://apps.dtic.mil/sti/trecms/pdf/AD1211414.pdf>
- O'Neill, T. A., Goffin, R. D., & Rothstein, M. (2013). Personality and the need for personality-oriented work analysis. In N. Christiansen & R. Tett (Eds.), *Handbook of personality at work* (pp. 264–290). Taylor & Francis.
- Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. *Journal of Applied Psychology*, 78(4), 679–703. <https://doi.org/10.1037/0021-9010.78.4.679>
- Parker, J. D., Bagby, R. M., & Summerfeldt, L. J. (1993). Confirmatory factor analysis of the Revised NEO Personality Inventory. *Personality and Individual Differences*, 15(4), 463-466. [https://doi.org/10.1016/0191-8869\(93\)90074-D](https://doi.org/10.1016/0191-8869(93)90074-D)
- *Paunonen, S. V., Haddock, G., Forsterling, F., & Keinonen, M. (2003). Broad versus narrow personality measures and the prediction of behaviour across cultures. *European Journal of Personality*, 17(6), 413-433. <https://doi.org/10.1002/per.496>
- *Pletzer, J. L., Oostrom, J. K., Bentvelzen, M., & de Vries, R. E. (2020). Comparing domain-and facet-level relations of the HEXACO personality model with workplace deviance: A meta-analysis. *Personality and Individual Differences*, 152, 109539. <https://doi.org/10.1016/j.paid.2019.109539>
- Pletzer, J. L., Oostrom, J. K., & de Vries, R. E. (2021). HEXACO personality and organizational citizenship behavior: A domain-and facet-level meta-analysis. *Human Performance*, 34(2), 126-147. <https://doi.org/10.1080/08959285.2021.1891072>
- Raymark, P. H., Schmit, M. J., & Guion, R. M. (1997). Identifying potentially useful personality constructs for employee selection. *Personnel Psychology*, 50(3), 723-736. <https://doi.org/10.1111/j.1744-6570.1997.tb00712.x>

- Reimers, N., & Gurevych, I. (2019). Sentence-BERT: Sentence embeddings using Siamese BERT-networks. *arXiv preprint arXiv:1908.10084*. <http://arxiv.org/abs/1908.10084>
- Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, 47(5), 667-696. <https://doi.org/10.1080/00273171.2012.715555>
- Revelle, W., & Wilt, J. (2013). The general factor of personality: A general critique. *Journal of Research in Personality*, 47(5), 493-504. <https://doi.org/10.1016/j.jrp.2013.04.012>
- Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science*, 2(4), 313-345. <https://doi.org/10.1111/j.1745-6916.2007.000>
- Sackett, P. R., & Walmsley, P. T. (2014). Which personality attributes are most important in the workplace? *Perspectives on Psychological Science*, 9(5), 538–551. <https://doi.org/10.1177/1745691614543972>
- Sackett, P. R., Zhang, C., Berry, C. M., & Lievens, F. (2022). Revisiting meta-analytic estimates of validity in personnel selection: Addressing systematic overcorrection for restriction of range. *Journal of Applied Psychology*, 107(11), 2040–2068. <https://doi.org/10.1037/apl0000994>
- Saucier, G., & Srivastava, S. (2015). What makes a good structural model of personality? Evaluating the big five and alternatives. In M. Mikulincer, P. R. Shaver, M. L. Cooper, & R. J. Larsen (Eds.), *APA handbook of personality and social psychology, Vol. 4. Personality processes and individual differences* (pp. 283–305). American Psychological Association. <https://doi.org/10.1037/14343-013>
- *Schreiber, A., & Marcus, B. (2020). The place of the “Dark Triad” in general models of personality: Some meta-analytic clarification. *Psychological Bulletin*, 146(11), 1021–1041. <https://doi.org/10.1037/bul0000299>
- Schwaba, T., Rhemtulla, M., Hopwood, C. J., & Bleidorn, W. (2020). A facet atlas: Visualizing networks that describe the blends, cores, and peripheries of personality structure. *PLOS ONE*, 15(7), e0236893. <https://doi.org/10.1371/journal.pone.0236893>
- *Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113(1), 117–143. <https://doi.org/10.1037/pspp0000096>
- *Stanek, K. C. & Ones, D. S. (2018). Taxonomies and compendia of cognitive ability and personality constructs and measures relevant to industrial, work and organizational psychology. In D. S. Ones, N. Anderson, C. Viswesvaran, & H. K. Sinangil (Eds.), *The SAGE handbook of industrial, work and organizational psychology: Personnel Psychology and Employee Performance* (pp. 366-407). SAGE Publications Ltd.
- Stanek, K. C., & Ones, D. S. (2023). Meta-analytic relations between personality and cognitive ability. *Proceedings of the National Academy of Sciences*, 120(23), e2212794120. <https://doi.org/10.1073/pnas.2212794120>

- Steel, P., Schmidt, J., Bosco, F., & Uggerslev, K. (2019). The effects of personality on job satisfaction and life satisfaction: A meta-analytic investigation accounting for bandwidth-fidelity and commensurability. *Human Relations*, *72*(2), 217-247. <https://doi.org/10.1177/0018726718771465>
- Strong, M. H., Jeanneret, P. R., McPhail, S. M., Blakley, B. R., & D'Egidio, E. L. (1997). Work contexts: Evidence for the reliability and validity of the measures. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, E. A. Fleishman, & K. Y. Levin (Eds.), *O*NET final technical report* (pp. 628-774). U.S. Department of Labor. [O*NET Final Technical Report at O*NET Resource Center \(onetcenter.org\)](https://www.onetcenter.org)
- Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, *88*(3), 500-517. <https://doi.org/10.1037/0021-9010.88.3.500>
- Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, *34*(4), 397-423. <https://doi.org/10.1006/jrpe.2000.2292>
- Tett, R. P., Jackson, D. N., Rothstein, M., & Reddon, J. R. (1999). Meta-analysis of bidirectional relations in personality-job performance research. *Human Performance*, *12*(1), 1-29. https://doi.org/10.1207/s15327043hup1201_1
- Tett, R. P., Steele, J. R., & Beauregard, R. S. (2003). Broad and narrow measures on both sides of the personality-job performance relationship. *Journal of Organizational Behavior*, *24*(3), 335-356. <https://doi.org/10.1002/job.191>
- Tett, R. P., Toich, M. J., & Ozkum, S. B. (2021). Trait activation theory: A review of the literature and applications to five lines of personality dynamics research. *Annual Review of Organizational Psychology and Organizational Behavior*, *8*, 199-233. <https://doi.org/10.1146/annurev-orgpsych-012420-055611>
- Thielmann, I., Moshagen, M., Hilbig, B. E., & Zettler, I. (2022). On the comparability of basic personality models: Meta-analytic correspondence, scope, and orthogonality of the Big Five and HEXACO dimensions. *European Journal of Personality*, *36*(6), 870-900. <https://doi.org/10.1002/per.2332>
- Widiger, T. A. (Ed.). (2017). *The Oxford handbook of the Five Factor Model*. Oxford University Press.
- Wilmot, M. P. (2017). *Personality and its impacts across the behavioral sciences: A quantitative review of meta-analytic findings*. Doctoral dissertation. University of Minnesota
- Wilmot, M. P., & Ones, D. S. (2019). A century of research on conscientiousness at work. *Proceedings of the National Academy of Sciences*, *116*(46), 23004-23010. <https://doi.org/10.1073/pnas.1908430116>
- Wilmot, M. P., & Ones, D. S. (2021). Occupational characteristics moderate personality-performance relations in major occupational groups. *Journal of Vocational Behavior*, *131*, 103655. <https://doi.org/10.1016/j.jvb.2021.103655>

- Wilmot, M. P., Wanberg, C. R., Kammeyer-Mueller, J. D., & Ones, D. S. (2019). Extraversion advantages at work: A quantitative review and synthesis of the meta-analytic evidence. *Journal of Applied Psychology, 104*(12), 1447–1470. <https://doi.org/10.1037/apl0000415>
- *Woods, S. A., & Anderson, N. R. (2016). Toward a periodic table of personality: Mapping personality scales between the five-factor model and the circumplex model. *Journal of Applied Psychology, 101*(4), 582–604. <https://doi.org/10.1037/apl0000062>
- Zell, E., & Lesick, T. L. (2022). Big five personality traits and performance: A quantitative synthesis of 50+ meta-analyses. *Journal of Personality, 90*(4), 559-573. <https://doi.org/10.1111/jopy.12683>
- Zimmerman, R. D. (2008). Understanding the impact of personality traits on individuals' turnover decisions: A meta-analytic path model. *Personnel Psychology, 61*(2), 309-348. <https://doi.org/10.1111/j.1744-6570.2008.00115.x>

Appendix A: Linkage Exercise Materials

Linkage Exercise Instructions and Rating Scales

Linking O*NET Work Styles to O*NET Work Activities and Work Contexts

Instructions

Background

As you know, the Occupational Information Network (O*NET) is a comprehensive conceptual framework that helps provide a foundation for a variety of human resource programs, such as school curriculum development, job placement, and training. The National Center for O*NET Development has contracted with HumRRO to revise the Work Styles domain of the O*NET Content Model. Work Styles are heretofore defined as “personality tendencies exhibited at work that can affect how well someone performs a job.”

Via a comprehensive review of the work-oriented personality literature published since the original Work Styles were established in 1995, analysis of personality taxonomies contained in that literature, and in consultation with the National Center for O*NET Development, HumRRO has composed a preliminary updated set of 21 Work Styles. The next step in the development process is to obtain subject matter expert (SME) linkage ratings between the updated Work Styles and O*NET Generalized Work Activities (GWAs) and Work Contexts (WCs). The linkage ratings will be used to...

- Identify Work Styles that we may want to cull or combine based on their pattern of linkages with GWAs and WCs—effectively finalize the updated set of Work Styles.
- Provide a foundation for use by future SMEs or automated approaches to draw inferences about Work Styles that are beneficial/detrimental for O*NET occupations based on the GWAs and WCs an occupation involves.
- Provide WS-GWA and WS-WC linkage data that will be published to the O*NET Database

Your task, along with **seven** of your colleagues, will be to evaluate the relevance of each update to each of the 41 O*NET GWAs and 61 Work Contexts.

Materials

1. Linkage Instructions and Rating Scale (this document)
2. Work Style Definitions
3. GWA Definitions
4. Work Context Definitions
5. Master Rating Booklet

The Master Rating Booklet is an Excel file where your linkage judgments are to be entered. One tab is for the GWA judgments, one tab is for the Work Contexts judgments. A final tab is

intended for you to enter any comments you might have about specific Work Style-GWA or Work Style-Work Context linkages.

Linkage Rating Scales

We have adapted rating scales from the personality-oriented job analysis literature to guide your judgments about the relevance of the Work Styles for each of the GWAs and Work Contexts. You will use the response options from these scales to make your linkage evaluations.

Work Style-GWA Linkage Ratings

-3	-2	-1	0	+1	+2	+3
Very detrimental to the performance of this work activity	Detrimental to the performance of this work activity	Somewhat detrimental to the performance of this work activity	Little or no impact on the performance of this work activity	Somewhat beneficial to the performance of this work activity	Beneficial to the performance of this work activity	Very beneficial to the performance of this work activity

When making your ratings, you should think of a person who has relatively high standing on the given trait, and whether that high standing is beneficial or detrimental to performing the given GWA.

Work Style-Work Context Linkage Ratings

-3	-2	-1	0	+1	+2	+3
Very detrimental to performance in this work context	Detrimental to performance in this work context	Somewhat detrimental to performance in this work context	Little or no impact on performance in this work context	Somewhat beneficial to performance in this work context	Beneficial to performance in this work context	Very beneficial to performance in this work context

When making your ratings, you should think of a person who has relatively high standing on the given trait, and whether that high standing is beneficial or detrimental to performing work in the given Work Context.

When making your ratings, we encourage you to aim to *use all points on the rating scale* to aid in differentiating GWAs and Work Contexts according to the Work Styles

Steps for Completing Your Ratings

1. Start by carefully reviewing and familiarizing yourself with the Work Style Definitions, GWA Definitions, and Work Contexts Definitions files. We advise having these files open for ease of reference as you work through your ratings in the Master Rating Booklet. You will need to reference the definitions frequently, as only the Work Style, GWA, and Work Context labels appear in the Master Rating Booklet.
2. Enter your ratings in the Master Rating Booklet. Note we have imposed validation scripts on the cells in the WS-GWA Links and WS-WC Links tabs so you will only be enter whole number ratings between -3 and 3 for each pair.

3. If you want to document any notes about your ratings for a given pair or given GWA, Work Context, or Work Style in general, please add those notes to the Notes tab in the Maser Rating Booklet. The only edits you should make to the WS-GWA Links and WS-WC links tabs are entering your linkage ratings.
4. Once you are done with your ratings, please email a copy of your completed Master Rating Booklet to Harrison Kell no later than 5 pm ET on **May 14, 2024**. Append the file name with your initials (e.g., Master Rating Booklet_XX.xlsx).

Tips for Completing Your Ratings and Important Things to Keep in Mind

1. For each WS-GWA and WS-WC pair, think of this as a two-part judgment:
 - a. Is the Work Style even “relevant” to the given GWA or Work Context? Does GWA or Work Context offer the opportunity for the Work Style to manifest, and if so, would you expect it to have any impact on the performance of that GWA or in that context? If “no,” then rate the linkage a 0.
 - b. If the Work Style is relevant to the given GWA or Work Context, to what extent does having a relatively high standing on the given Work Style benefit (e.g., facilitate) or detract from (e.g., inhibit) performance?

Detrimental, inhibiting			Beneficial, facilitating			
-3	-2	-1	0	+1	+2	+3
Very detrimental to the performance of this work activity	Detrimental to the performance of this work activity	Somewhat detrimental to the performance of this work activity	Little or no impact on the performance of this work activity	Somewhat beneficial to the performance of this work activity	Beneficial to the performance of this work activity	Very beneficial to the performance of this work activity
-3	-2	-1	0	+1	+2	+3
Very detrimental to performance in this work context	Detrimental to performance in this work context	Somewhat detrimental to performance in this work context	Little or no impact on performance in this work context	Somewhat beneficial to performance in this work context	Beneficial to performance in this work context	Very beneficial to performance in this work context

2. Try to rate each Work Style-GWA pair and each Work Style-Work Context pair largely independently of all other pairs. However, also realize that some linkage judgments will inevitably be more related than others and use this interrelation to check your consistency across judgments and where you believe there should be similarities and differences. For example, linkage judgments about Work Contexts that feature hazardous conditions are more likely to resemble each other, on average, than they are linkage judgments about Work Contexts that feature social interactions. Similarly, linkage judgments about Work Styles that are manifestations of Conscientiousness are more likely to resemble each other, on average, than they are judgments about Work Styles that are manifestations of Emotional Stability.

3. Complete your ratings independently from the other SMEs. Do not discuss them with your colleagues until we hold our reconciliation meeting after all SMEs have made their ratings.
4. Don't overthink things—especially when it comes to making judgments about GWA/WCs for which a given Work Style is clearly irrelevant—don't dwell on it, rate the pair as “0” and move on to the next. Keep in mind you are allotted up to 16 hours to make your WS-GWA linkages and 16 hours to make your WS-WC linkages, so pace yourself, be mindful of time, and work efficiently.
5. Focus only on what is explicitly specified in the definitions. For example, Handling and Moving Objects *could* trigger Empathy if others are nearby, but the presence of other individuals is not part of the definition itself.
6. Don't get hung up on “edge cases” that can be imagined but, if they exist, likely have low base rates. For example, “Being high on *Stress Tolerance* could be detrimental when *Exposed to Radiation* because such workers will be so relaxed that they won't take proper safety precautions.”
7. Don't make undue assumptions. For example, “Being high on *Integrity* could be detrimental to *Public Speaking* because public speakers are more likely to be effective when they embellish and exaggerate.”
8. When making the linkages, ask yourself whether a Work Style is beneficial or detrimental to performing a given GWA *in general* or performance in a given Work Context *in general*, not tied to any specific job but on average across all jobs where that GWA or Work Context may manifest.

Post-Rating Reconciliation

After you and your colleagues have completed your ratings we will analyze the results of the ratings, including assessing interrater agreement. During a reconciliation group meeting including you and the other SMES we will review these results and we will come to a reasonable level of agreement where there are discrepancies in the linkage judgments.

Questions

Please email Harrison Kell and Dan Putka

with any questions you may have regarding this exercise.

Table A.1. List of GWA Descriptions Included in the Linkage Exercise

	O*NET Content Model ID	GWA Label	GWA Definition
1	4.A.1.a.1	Getting Information	Observing, receiving, and otherwise obtaining information from all relevant sources.
2	4.A.1.a.2	Monitor Processes, Materials, or Surroundings	Monitoring and reviewing information from materials, events, or the environment to detect or assess problems.
3	4.A.1.b.1	Identifying Objects, Actions, and Events	Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
4	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
5	4.A.1.b.3	Estimating the Quantifiable Characteristics of Products, Events, or Information	Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.
6	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Assessing the value, importance, or quality of things or people.
7	4.A.2.a.2	Processing Information	Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
8	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
9	4.A.2.a.4	Analyzing Data or Information	Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
10	4.A.2.b.1	Making Decisions and Solving Problems	Analyzing information and evaluating results to choose the best solution and solve problems.
11	4.A.2.b.2	Thinking Creatively	Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.
12	4.A.2.b.3	Updating and Using Relevant Knowledge	Keeping up-to-date technically and applying new knowledge to your job.
13	4.A.2.b.4	Developing Objectives and Strategies	Establishing long-range objectives and specifying the strategies and actions to achieve them.
14	4.A.2.b.5	Scheduling Work and Activities	Scheduling events, programs, and activities, as well as the work of others.
15	4.A.2.b.6	Organizing, Planning, and Prioritizing Work	Developing specific goals and plans to prioritize, organize, and accomplish your work.
16	4.A.3.a.1	Performing General Physical Activities	Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling materials.

	O*NET Content Model ID	GWA Label	GWA Definition
17	4.A.3.a.2	Handling and Moving Objects	Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
18	4.A.3.a.3	Controlling Machines and Processes	Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
19	4.A.3.a.4	Operating Vehicles, Mechanized Devices, or Equipment	Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or watercraft.
20	4.A.3.b.1	Working with Computers	Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
21	4.A.3.b.2	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Providing documentation, detailed instructions, drawings, or specifications to tell others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used.
22	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
23	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.
24	4.A.3.b.6	Documenting/Recording Information	Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
25	4.A.4.a.1	Interpreting the Meaning of Information for Others	Translating or explaining what information means and how it can be used.
26	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
27	4.A.4.a.3	Communicating with People Outside the Organization	Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
28	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Developing constructive and cooperative working relationships with others, and maintaining them over time.
29	4.A.4.a.5	Assisting and Caring for Others	Providing personal assistance, medical attention, emotional support, or other personal care to others such as coworkers, customers, or patients.
30	4.A.4.a.6	Selling or Influencing Others	Convincing others to buy merchandise/goods or to otherwise change their minds or actions.

	O*NET Content Model ID	GWA Label	GWA Definition
31	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.
32	4.A.4.a.8	Performing for or Working Directly with the Public	Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.
33	4.A.4.b.1	Coordinating the Work and Activities of Others	Getting members of a group to work together to accomplish tasks.
34	4.A.4.b.2	Developing and Building Teams	Encouraging and building mutual trust, respect, and cooperation among team members.
35	4.A.4.b.3	Training and Teaching Others	Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.
36	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
37	4.A.4.b.5	Coaching and Developing Others	Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills.
38	4.A.4.b.6	Provide Consultation and Advice to Others	Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.
39	4.A.4.c.1	Performing Administrative Activities	Performing day-to-day administrative tasks such as maintaining information files and processing paperwork.
40	4.A.4.c.2	Staffing Organizational Units	Recruiting, interviewing, selecting, hiring, and promoting employees in an organization.
41	4.A.4.c.3	Monitoring and Controlling Resources	Monitoring and controlling resources and overseeing the spending of money.

Table A.2. List of Work Context Descriptions Included in the Linkage Exercise

	O*NET Content Model ID	Work Context Label	Work Context Definition
1	4.C.1.a.2.c	Public Speaking	Speaking in public
2	4.C.1.a.2.f	Telephone	Having telephone conversations
3	4.C.1.a.2.h	Electronic Mail	Using electronic mail
4	4.C.1.a.2.j	Letters and Memos	Writing letters and memos
5	4.C.1.a.2.l	Face-to-Face Discussions	Having face-to-face discussions with individuals and within teams
6	4.C.1.a.4	Contact With Others	Having contact with others (by telephone, face-to-face, or otherwise)
7	4.C.1.b.1.e	Work With Work Group or Team	Working with or contributing to a work group or team
8	4.C.1.b.1.f	Deal With External Customers	Dealing with external customers (as in retail sales) or the public in general (as in police work)
9	4.C.1.b.1.g	Coordinate or Lead Others	Coordinating or leading others in accomplishing work activities
10	4.C.1.c.1	Responsible for Others' Health and Safety	Being responsible for the health and safety of other workers
11	4.C.1.c.2	Responsibility for Outcomes and Results	Being responsible for work outcomes and results of other workers
12	4.C.1.d.1	Frequency of Conflict Situations	Being in conflict situations
13	4.C.1.d.2	Deal With Unpleasant or Angry People	Dealing with unpleasant, angry, or discourteous people
14	4.C.1.d.3	Deal With Physically Aggressive People	Dealing with violent or physically aggressive people
15	4.C.2.a.1.a	Indoors, Environmentally Controlled	Working indoors in an environmentally controlled environment (like a warehouse with air conditioning)
16	4.C.2.a.1.b	Indoors, Not Environmentally Controlled	Working in an environment that is not environmentally controlled (like a warehouse without air conditioning)
17	4.C.2.a.1.c	Outdoors, Exposed to Weather	Working outdoors, exposed to all weather conditions
18	4.C.2.a.1.d	Outdoors, Under Cover	Working outdoors, under cover (like in an open shed)
19	4.C.2.a.1.e	In an Open Vehicle or Equipment	Working in an open vehicle or operating equipment (like a tractor)
20	4.C.2.a.1.f	In an Enclosed Vehicle or Equipment	Working in a closed vehicle or operating enclosed equipment (like a car)
21	4.C.2.a.3	Physical Proximity	Being physically close to other people
22	4.C.2.b.1.a	Sounds, Noise Levels Are Distracting or Uncomfortable	Being exposed to sounds and noise levels that are distracting and uncomfortable
23	4.C.2.b.1.b	Very Hot or Cold Temperatures	Being exposed to very hot (above 90° F) or very cold (under 32° F) temperatures
24	4.C.2.b.1.c	Extremely Bright or Inadequate Lighting	Being exposed to extremely bright or inadequate lighting conditions
25	4.C.2.b.1.d	Exposed to Contaminants	Being exposed to contaminants (such as pollutants, gases, dust, or odors)
26	4.C.2.b.1.e	Cramped Work Space, Awkward Positions	Being exposed to cramped work space that requires getting into awkward positions

	O*NET Content Model ID	Work Context Label	Work Context Definition
27	4.C.2.b.1.f	Exposed to Whole Body Vibration	Being exposed to whole body vibration (like operating a jackhammer or earth moving equipment)
28	4.C.2.c.1.a	Exposed to Radiation	Being exposed to radiation
29	4.C.2.c.1.b	Exposed to Disease or Infections	Being exposed to diseases or infection (This can happen with workers in patient care, some laboratory work, sanitation control, etc.)
30	4.C.2.c.1.c	Exposed to High Places	Being exposed to high places (This can happen for workers who work on poles, scaffolding, catwalks, or ladders longer than 8 feet in length.)
31	4.C.2.c.1.d	Exposed to Hazardous Conditions	Being exposed to hazardous conditions (This can happen when working with high voltage electricity, flammable material, explosives, or chemicals. Do not include working with hazardous equipment.)
32	4.C.2.c.1.e	Exposed to Hazardous Equipment	Being exposed to hazardous equipment (This includes working with saws, close to machinery with exposed moving parts, or working near vehicular traffic, but not including driving a vehicle.)
33	4.C.2.c.1.f	Exposed to Minor Burns, Cuts, Bites, or Stings	Being exposed to minor burns, cuts, bites, or stings
34	4.C.2.d.1.a	Spend Time Sitting	Sitting
35	4.C.2.d.1.b	Spend Time Standing	Standing
36	4.C.2.d.1.c	Spend Time Climbing Ladders, Scaffolds, or Poles	Climbing ladders, scaffolds, poles, etc.
37	4.C.2.d.1.d	Spend Time Walking and Running	Walking or running
38	4.C.2.d.1.e	Spend Time Kneeling, Crouching, Stooping, or Crawling	Kneeling, crouching, stooping, or crawling
39	4.C.2.d.1.f	Spend Time Keeping or Regaining Balance	Keeping or regaining balance
40	4.C.2.d.1.g	Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls	Using hands to handle, control, or feel objects, tools, or controls
41	4.C.2.d.1.h	Spend Time Bending or Twisting the Body	Bending or twisting body
42	4.C.2.d.1.i	Spend Time Making Repetitive Motions	Making repetitive motions
43	4.C.2.e.1.d	Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets	Wearing common protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, hard hats, or life jacket
44	4.C.2.e.1.e	Wear Specialized Protective or Safety Equipment such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection	Wearing specialized protective or safety equipment such as breathing apparatus, safety harness, full protection suits, or radiation protection
45	4.C.3.a.1	Consequence of Error	Performing work where the consequences of error are serious

	O*NET Content Model ID	Work Context Label	Work Context Definition
46	4.C.3.a.2.a*	Impact of Decisions on Co-workers or Company Results	Making decisions that affect other people or the image or reputation or financial resources of employer
47	4.C.3.a.4	Freedom to Make Decisions	Being free to make decisions without supervision
48	4.C.3.b.2	Degree of Automation	Performing work that is highly automated
49	4.C.3.b.4	Importance of Being Exact or Accurate	Being very exact or highly accurate
50	4.C.3.b.7	Importance of Repeating Same Tasks	Performing continuous, repetitious physical activities (like key entry) or mental activities (like checking entries in a ledger)
51	4.C.3.b.8a**	Structured Work	Being in a structured work environment where one is not free to determine their tasks, priorities, or goals
52	4.C.3.b.8b**	Unstructured Work	Being in an unstructured work environment where one is free to determine their tasks, priorities, or goals
53	4.C.3.c.1	Level of Competition	Being in a competitive environment
54	4.C.3.d	Time Pressure	Meeting strict deadlines
55	4.C.3.d.1	Pace Determined by Speed of Equipment	Keeping a pace set by machinery or equipment
56	4.C.3.d.4a***	Work Schedule – Regular	Keeping a regular work schedule (established routine, set schedule)
57	4.C.3.d.4b***	Work Schedule – Irregular	Keeping an irregular work schedule (changes with weather conditions, production demands, or contract duration)
58	4.C.3.d.4c***	Work Schedule – Seasonal	Keeping a seasonal work schedule (only during certain times of the year)
59	4.C.3.d.8a****	Duration of Typical Work Week - Less Than 40 HRS	Working less than 40 hours in a typical week
60	4.C.3.d.8b****	Duration of Typical Work Week - Typically 40 HRS	Working 40 hours in a typical week
61	4.C.3.d.8c****	Duration of Typical Work Week - More Than 40 HRS	Working more than 40 hours in a typical week

Note. *The O*NET Content Model includes a Work Context labeled *Frequency of Decision Making* (4.C.3.a.2.b) defined as “How frequently is the worker required to make decisions that affect other people, the financial resources, and/or the image and reputation of the organization?”. We excluded this Work Context from the linkage exercise because the core of its definition (i.e., “making decisions that affect other people, the financial resources, and/or the image and reputation of the organization”) is effectively identical to the Work Context labeled *Impact of Decisions on Co-workers or Company Results* (4.C.3.a.2.a) which is included in the list of Work Context rated by SMEs. **The O*NET Content Model definition of *Structured versus Unstructured Work* is “To what extent is this job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals?”, upon discussion with the Center, we split this Work Context into two, reflecting Structured Work, and Unstructured Work respectively as we believed SMEs link these two contexts to Work Styles differently. ***The O*NET Content Model definition of *Work Schedules* is “How regular are the work schedules for this job?” Following [Fleisher and Tsacoumis \(2012\)](#), we split this definition into three more specific types of Work Schedule, reasoning that the degree and direction of associations with the Work Styles may differ across the three types of this Work Context. ****The O*NET Content Model definition of *Duration of Typical Work Week* is “Number of hours typically worked in one week.” Following [Fleisher and Tsacoumis \(2012\)](#), we split this definition into three types of Typical Work Week that were more specific, reasoning that the degree and direction of associations with the Work Styles may differ across the three types of this Work Context.

Figure A.1. Partial Screenshot of Rating Table Used by SMEs to Enter Linkage Ratings for GWAs

GWA Label		Work Style-GWA Linkage Rating Scale														
		-3=Very Detrimental; -2=Detrimental; -1=Somewhat Detrimental; 0=Little or No Impact; 1=Somewhat Beneficial														
		Agreeableness		Humility-Honesty			Conscientiousness					Emotional Stability		Extraversion		Adaptability
Cooperation	Empathy	Humility	Integrity	Sincerity	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Self-Control	Stress Tolerance	Leadership Orientation	Social Orientation			
1	Getting Information															
2	Monitoring Processes, Materials, or Surroundings															
3	Identifying Objects, Actions, and Events															
4	Inspecting Equipment, Structures, or Materials															
5	Estimating the Quantifiable Characteristics of Products, Events, or Information															
6	Judging the Qualities of Objects, Services, or People															
7	Processing Information															
8	Evaluating Information to Determine Compliance with Standards															
9	Analyzing Data or Information															
10	Making Decisions and Solving Problems															
11	Thinking Creatively															
12	Updating and Using Relevant Knowledge															
13	Developing Objectives and Strategies															
14	Scheduling Work and Activities															
15	Organizing, Planning, and Prioritizing Work															
16	Performing General Physical Activities															
17	Handling and Moving Objects															
18	Controlling Machines and Processes															
19	Operating Vehicles, Mechanized Devices, or Equipment															
20	Working with Computers															
21	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment															

Figure A.2. Partial Screenshot of Rating Table Used by SMEs to Enter Linkage Ratings for Work Contexts

Work Context Label		Work Style-Work Context Linkage Rating Scale												
		-3=Very Detrimental; -2=Detrimental; -1=Somewhat Detrimental; 0=Little or No Impact; 1=Somewhat B												
		Agreeableness		Humility-Honesty			Conscientiousness					Emotional Stability		Extraversion
Cooperation	Empathy	Humility	Integrity	Sincerity	Achievement Orientation	Attention to Detail	Cautiousness	Dependability	Self-Confidence	Self-Control	Stress Tolerance	Leadership Orientation	Social Orientation	
1	Public Speaking													
2	Telephone													
3	Electronic Mail													
4	Letters and Memos													
5	Face-to-Face Discussions													
6	Contact With Others													
7	Work With Work Group or Team													
8	Deal With External Customers													
9	Coordinate or Lead Others													
10	Responsible for Others' Health and Safety													
11	Responsibility for Outcomes and Results													
12	Conflict Situations													
13	Deal With Unpleasant or Angry People													
14	Deal With Physically Aggressive People													
15	Indoors, Environmentally Controlled													
16	Indoors, Not Environmentally Controlled													
17	Outdoors, Exposed to Weather													
18	Outdoors, Under Cover													
19	In an Open Vehicle or Equipment													
20	In an Enclosed Vehicle or Equipment													
21	Physical Proximity													

Appendix B: Final Work Style-GWA and Work-Style-Work Context Linkages

Tables B.1 and B.2 provides final Work Style-GWA linkages and Work Style-Work Context linkages, respectively. The “Direction of Linkage” column in each table reflects whether the linkages was “Positive” (indicating SMEs believed there was a positive relation between the given Work Style and the given GWA/Work Context), or “Negative” (indicating SMEs believed there was a negative relation between the given Work Style and the given GWA/Work Context). The “*M*” column in each table reflects the mean linkage rating SMEs on the -3 to +3 scale used for the linkage rating exercise (i.e., mean across the eight participating SMEs). The “*SE*” column in each table reflects the standard error of the mean linkage ratings across SMEs. Lastly, the “% Linked in Given Direction” in each table reflects the percentage of SMEs (out of eight) who linked the given Work Style and given GWA/Work Context in the given direction. Within each table, rows are first sorted by Work Activity (or Work Context) ID (ascending), and then by Work Styles Element ID (ascending).

Table B.1. Final Work-Style-GWA Linkages

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.a	Achievement Orientation	4.A.1.a.1	Getting Information	Positive	1.00	0.27	75.0
1.D.1.b	Attention to Detail	4.A.1.a.1	Getting Information	Positive	1.88	0.23	100.0
1.D.1.d	Dependability	4.A.1.a.1	Getting Information	Positive	1.00	0.19	87.5
1.D.6.c	Intellectual Curiosity	4.A.1.a.1	Getting Information	Positive	2.00	0.33	100.0
1.D.7.a	Initiative	4.A.1.a.1	Getting Information	Positive	1.13	0.35	75.0
1.D.7.c	Perseverance	4.A.1.a.1	Getting Information	Positive	1.13	0.13	100.0
1.D.1.b	Attention to Detail	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings	Positive	2.63	0.26	100.0
1.D.1.c	Cautiousness	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings	Positive	1.00	0.19	87.5
1.D.1.d	Dependability	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings	Positive	1.25	0.25	87.5
1.D.1.b	Attention to Detail	4.A.1.b.1	Identifying Objects, Actions, and Events	Positive	2.88	0.13	100.0
1.D.1.d	Dependability	4.A.1.b.1	Identifying Objects, Actions, and Events	Positive	1.00	0.19	87.5
1.D.1.b	Attention to Detail	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Positive	3.00	0.00	100.0
1.D.1.c	Cautiousness	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Positive	2.00	0.27	100.0
1.D.1.d	Dependability	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Positive	1.38	0.32	87.5
1.D.4.b	Integrity	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Positive	1.25	0.31	87.5
1.D.7.c	Perseverance	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	Positive	1.25	0.25	87.5
1.D.1.b	Attention to Detail	4.A.1.b.3	Estimating the Quantifiable Characteristics of Products, Events, or Information	Positive	2.38	0.18	100.0
1.D.1.c	Cautiousness	4.A.1.b.3	Estimating the Quantifiable Characteristics of Products, Events, or Information	Positive	1.00	0.27	75.0
1.D.1.b	Attention to Detail	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	2.00	0.19	100.0
1.D.1.c	Cautiousness	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	1.00	0.27	75.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.1.e	Self-Confidence	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	1.25	0.31	75.0
1.D.4.b	Integrity	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	1.38	0.26	87.5
1.D.4.c	Sincerity	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	1.00	0.33	62.5
1.D.6.d	Tolerance for Ambiguity	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	Positive	1.25	0.25	87.5
1.D.1.b	Attention to Detail	4.A.2.a.2	Processing Information	Positive	2.75	0.25	100.0
1.D.1.c	Cautiousness	4.A.2.a.2	Processing Information	Positive	1.25	0.37	75.0
1.D.1.d	Dependability	4.A.2.a.2	Processing Information	Positive	1.25	0.25	87.5
1.D.1.b	Attention to Detail	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Positive	2.88	0.13	100.0
1.D.1.c	Cautiousness	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Positive	1.75	0.37	87.5
1.D.1.d	Dependability	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Positive	1.13	0.23	87.5
1.D.1.e	Self-Confidence	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Positive	1.13	0.30	75.0
1.D.4.b	Integrity	4.A.2.a.3	Evaluating Information to Determine Compliance with Standards	Positive	1.63	0.38	87.5
1.D.1.b	Attention to Detail	4.A.2.a.4	Analyzing Data or Information	Positive	2.38	0.26	100.0
1.D.1.c	Cautiousness	4.A.2.a.4	Analyzing Data or Information	Positive	1.13	0.30	75.0
1.D.6.c	Intellectual Curiosity	4.A.2.a.4	Analyzing Data or Information	Positive	1.25	0.31	75.0
1.D.1.a	Achievement Orientation	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.13	0.30	75.0
1.D.1.b	Attention to Detail	4.A.2.b.1	Making Decisions and Solving Problems	Positive	2.00	0.27	100.0
1.D.1.c	Cautiousness	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.38	0.32	87.5

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.d	Dependability	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.50	0.19	100.0
1.D.1.e	Self-Confidence	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.88	0.30	100.0
1.D.2.a	Leadership Orientation	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.00	0.38	62.5
1.D.5.a	Self-Control	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.25	0.37	75.0
1.D.5.b	Stress Tolerance	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.50	0.33	87.5
1.D.6.a	Adaptability	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.25	0.25	87.5
1.D.6.b	Innovation	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.50	0.19	100.0
1.D.6.c	Intellectual Curiosity	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.38	0.26	87.5
1.D.6.d	Tolerance for Ambiguity	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.88	0.30	87.5
1.D.7.c	Perseverance	4.A.2.b.1	Making Decisions and Solving Problems	Positive	1.25	0.31	87.5
1.D.1.a	Achievement Orientation	4.A.2.b.2	Thinking Creatively	Positive	1.00	0.19	87.5
1.D.1.e	Self-Confidence	4.A.2.b.2	Thinking Creatively	Positive	1.25	0.31	75.0
1.D.6.a	Adaptability	4.A.2.b.2	Thinking Creatively	Positive	2.50	0.27	100.0
1.D.6.b	Innovation	4.A.2.b.2	Thinking Creatively	Positive	3.00	0.00	100.0
1.D.6.c	Intellectual Curiosity	4.A.2.b.2	Thinking Creatively	Positive	1.88	0.30	87.5
1.D.6.d	Tolerance for Ambiguity	4.A.2.b.2	Thinking Creatively	Positive	1.88	0.35	100.0
1.D.7.c	Perseverance	4.A.2.b.2	Thinking Creatively	Positive	1.00	0.27	75.0
1.D.1.a	Achievement Orientation	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	2.00	0.27	100.0
1.D.1.b	Attention to Detail	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	1.00	0.33	62.5
1.D.6.a	Adaptability	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	1.75	0.25	100.0
1.D.6.b	Innovation	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	1.50	0.33	87.5
1.D.6.c	Intellectual Curiosity	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	2.75	0.16	100.0
1.D.7.a	Initiative	4.A.2.b.3	Updating and Using Relevant Knowledge	Positive	2.00	0.33	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.1.a	Achievement Orientation	4.A.2.b.4	Developing Objectives and Strategies	Positive	2.38	0.38	87.5
1.D.1.b	Attention to Detail	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.25	0.16	100.0
1.D.1.d	Dependability	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.00	0.19	87.5
1.D.1.e	Self-Confidence	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.75	0.37	87.5
1.D.2.a	Leadership Orientation	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.50	0.33	87.5
1.D.6.b	Innovation	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.13	0.23	87.5
1.D.6.d	Tolerance for Ambiguity	4.A.2.b.4	Developing Objectives and Strategies	Positive	1.25	0.16	100.0
1.D.1.b	Attention to Detail	4.A.2.b.5	Scheduling Work and Activities	Positive	2.13	0.13	100.0
1.D.1.d	Dependability	4.A.2.b.5	Scheduling Work and Activities	Positive	1.63	0.26	100.0
1.D.2.a	Leadership Orientation	4.A.2.b.5	Scheduling Work and Activities	Positive	1.25	0.31	87.5
1.D.3.a	Cooperation	4.A.2.b.5	Scheduling Work and Activities	Positive	1.13	0.30	87.5
1.D.1.a	Achievement Orientation	4.A.2.b.6	Organizing, Planning, and Prioritizing Work	Positive	2.25	0.37	87.5
1.D.1.b	Attention to Detail	4.A.2.b.6	Organizing, Planning, and Prioritizing Work	Positive	2.13	0.30	100.0
1.D.1.d	Dependability	4.A.2.b.6	Organizing, Planning, and Prioritizing Work	Positive	1.75	0.31	87.5
1.D.1.c	Cautiousness	4.A.3.a.1	Performing General Physical Activities	Positive	1.13	0.35	75.0
1.D.7.c	Perseverance	4.A.3.a.1	Performing General Physical Activities	Positive	1.13	0.35	75.0
1.D.1.c	Cautiousness	4.A.3.a.2	Handling and Moving Objects	Positive	1.38	0.32	87.5
1.D.1.b	Attention to Detail	4.A.3.a.3	Controlling Machines and Processes	Positive	1.25	0.37	75.0
1.D.1.c	Cautiousness	4.A.3.a.3	Controlling Machines and Processes	Positive	1.38	0.32	87.5
1.D.1.d	Dependability	4.A.3.a.3	Controlling Machines and Processes	Positive	1.13	0.23	87.5
1.D.1.b	Attention to Detail	4.A.3.a.4	Operating Vehicles, Mechanized Devices, or Equipment	Positive	1.00	0.00	100.0
1.D.1.c	Cautiousness	4.A.3.a.4	Operating Vehicles, Mechanized Devices, or Equipment	Positive	1.63	0.32	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.1.d	Dependability	4.A.3.a.4	Operating Vehicles, Mechanized Devices, or Equipment	Positive	1.63	0.26	100.0
1.D.1.b	Attention to Detail	4.A.3.b.1	Working with Computers	Positive	2.13	0.13	100.0
1.D.1.d	Dependability	4.A.3.b.1	Working with Computers	Positive	1.00	0.19	87.5
1.D.1.b	Attention to Detail	4.A.3.b.2	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Positive	3.00	0.00	100.0
1.D.1.c	Cautiousness	4.A.3.b.2	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Positive	1.00	0.38	62.5
1.D.1.d	Dependability	4.A.3.b.2	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Positive	1.50	0.19	100.0
1.D.1.b	Attention to Detail	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Positive	2.25	0.16	100.0
1.D.1.c	Cautiousness	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Positive	1.50	0.27	87.5
1.D.1.d	Dependability	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Positive	1.75	0.25	100.0
1.D.6.c	Intellectual Curiosity	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Positive	1.13	0.35	62.5
1.D.7.c	Perseverance	4.A.3.b.4	Repairing and Maintaining Mechanical Equipment	Positive	1.50	0.19	100.0
1.D.1.b	Attention to Detail	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Positive	2.25	0.16	100.0
1.D.1.c	Cautiousness	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Positive	1.38	0.26	87.5
1.D.1.d	Dependability	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Positive	1.75	0.25	100.0
1.D.6.c	Intellectual Curiosity	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Positive	1.13	0.35	62.5
1.D.7.c	Perseverance	4.A.3.b.5	Repairing and Maintaining Electronic Equipment	Positive	1.50	0.19	100.0
1.D.1.b	Attention to Detail	4.A.3.b.6	Documenting/Recording Information	Positive	3.00	0.00	100.0
1.D.1.c	Cautiousness	4.A.3.b.6	Documenting/Recording Information	Positive	1.13	0.35	75.0
1.D.1.d	Dependability	4.A.3.b.6	Documenting/Recording Information	Positive	1.38	0.26	87.5
1.D.1.b	Attention to Detail	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.50	0.27	100.0
1.D.1.d	Dependability	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.00	0.27	75.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.e	Self-Confidence	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.25	0.31	75.0
1.D.2.b	Social Orientation	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.13	0.30	75.0
1.D.3.a	Cooperation	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.25	0.25	87.5
1.D.6.c	Intellectual Curiosity	4.A.4.a.1	Interpreting the Meaning of Information for Others	Positive	1.25	0.37	75.0
1.D.1.b	Attention to Detail	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.50	0.27	87.5
1.D.1.d	Dependability	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.38	0.26	87.5
1.D.1.e	Self-Confidence	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.25	0.25	87.5
1.D.2.b	Social Orientation	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	2.00	0.27	100.0
1.D.3.a	Cooperation	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.88	0.13	100.0
1.D.3.b	Empathy	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.25	0.16	100.0
1.D.4.a	Humility	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.25	0.16	100.0
1.D.4.b	Integrity	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.38	0.18	100.0
1.D.4.c	Sincerity	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.63	0.18	100.0
1.D.5.a	Self-Control	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.13	0.35	75.0
1.D.7.b	Optimism	4.A.4.a.2	Communicating with Supervisors, Peers, or Subordinates	Positive	1.00	0.27	75.0
1.D.1.b	Attention to Detail	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.38	0.26	87.5

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.d	Dependability	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.25	0.25	87.5
1.D.1.e	Self-Confidence	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.63	0.32	87.5
1.D.2.b	Social Orientation	4.A.4.a.3	Communicating with People Outside the Organization	Positive	2.38	0.26	100.0
1.D.3.a	Cooperation	4.A.4.a.3	Communicating with People Outside the Organization	Positive	2.13	0.23	100.0
1.D.3.b	Empathy	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.13	0.13	100.0
1.D.4.a	Humility	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.00	0.19	87.5
1.D.4.b	Integrity	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.25	0.16	100.0
1.D.4.c	Sincerity	4.A.4.a.3	Communicating with People Outside the Organization	Positive	2.13	0.30	100.0
1.D.5.a	Self-Control	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.50	0.27	100.0
1.D.5.b	Stress Tolerance	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.13	0.23	87.5
1.D.7.b	Optimism	4.A.4.a.3	Communicating with People Outside the Organization	Positive	1.38	0.32	87.5
1.D.1.d	Dependability	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.75	0.25	100.0
1.D.2.b	Social Orientation	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	2.63	0.26	100.0
1.D.3.a	Cooperation	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	2.75	0.16	100.0
1.D.3.b	Empathy	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	2.63	0.18	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.4.a	Humility	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.88	0.30	100.0
1.D.4.b	Integrity	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	2.13	0.23	100.0
1.D.4.c	Sincerity	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	2.63	0.18	100.0
1.D.5.a	Self-Control	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.88	0.30	100.0
1.D.6.a	Adaptability	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.25	0.25	87.5
1.D.7.a	Initiative	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.25	0.25	87.5
1.D.7.b	Optimism	4.A.4.a.4	Establishing and Maintaining Interpersonal Relationships	Positive	1.63	0.32	87.5
1.D.1.b	Attention to Detail	4.A.4.a.5	Assisting and Caring for Others	Positive	1.00	0.27	75.0
1.D.1.c	Cautiousness	4.A.4.a.5	Assisting and Caring for Others	Positive	1.13	0.35	75.0
1.D.1.d	Dependability	4.A.4.a.5	Assisting and Caring for Others	Positive	2.25	0.37	100.0
1.D.1.e	Self-Confidence	4.A.4.a.5	Assisting and Caring for Others	Positive	1.00	0.33	62.5
1.D.2.b	Social Orientation	4.A.4.a.5	Assisting and Caring for Others	Positive	2.13	0.23	100.0
1.D.3.a	Cooperation	4.A.4.a.5	Assisting and Caring for Others	Positive	2.75	0.16	100.0
1.D.3.b	Empathy	4.A.4.a.5	Assisting and Caring for Others	Positive	3.00	0.00	100.0
1.D.4.a	Humility	4.A.4.a.5	Assisting and Caring for Others	Positive	1.38	0.26	87.5
1.D.4.b	Integrity	4.A.4.a.5	Assisting and Caring for Others	Positive	1.63	0.26	100.0
1.D.4.c	Sincerity	4.A.4.a.5	Assisting and Caring for Others	Positive	2.50	0.19	100.0
1.D.5.a	Self-Control	4.A.4.a.5	Assisting and Caring for Others	Positive	2.00	0.27	100.0
1.D.5.b	Stress Tolerance	4.A.4.a.5	Assisting and Caring for Others	Positive	1.63	0.32	87.5

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.6.a	Adaptability	4.A.4.a.5	Assisting and Caring for Others	Positive	1.13	0.23	87.5
1.D.7.a	Initiative	4.A.4.a.5	Assisting and Caring for Others	Positive	1.00	0.33	75.0
1.D.7.b	Optimism	4.A.4.a.5	Assisting and Caring for Others	Positive	1.88	0.30	100.0
1.D.7.c	Perseverance	4.A.4.a.5	Assisting and Caring for Others	Positive	1.63	0.32	87.5
1.D.1.a	Achievement Orientation	4.A.4.a.6	Selling or Influencing Others	Positive	1.25	0.31	75.0
1.D.1.b	Attention to Detail	4.A.4.a.6	Selling or Influencing Others	Positive	1.00	0.27	75.0
1.D.1.e	Self-Confidence	4.A.4.a.6	Selling or Influencing Others	Positive	2.63	0.18	100.0
1.D.2.a	Leadership Orientation	4.A.4.a.6	Selling or Influencing Others	Positive	1.88	0.35	100.0
1.D.2.b	Social Orientation	4.A.4.a.6	Selling or Influencing Others	Positive	2.63	0.26	100.0
1.D.3.a	Cooperation	4.A.4.a.6	Selling or Influencing Others	Positive	1.13	0.30	75.0
1.D.3.b	Empathy	4.A.4.a.6	Selling or Influencing Others	Positive	1.13	0.13	100.0
1.D.4.b	Integrity	4.A.4.a.6	Selling or Influencing Others	Positive	1.13	0.30	87.5
1.D.5.a	Self-Control	4.A.4.a.6	Selling or Influencing Others	Positive	1.25	0.16	100.0
1.D.5.b	Stress Tolerance	4.A.4.a.6	Selling or Influencing Others	Positive	1.13	0.23	87.5
1.D.6.a	Adaptability	4.A.4.a.6	Selling or Influencing Others	Positive	1.50	0.38	75.0
1.D.6.b	Innovation	4.A.4.a.6	Selling or Influencing Others	Positive	1.13	0.35	75.0
1.D.7.b	Optimism	4.A.4.a.6	Selling or Influencing Others	Positive	2.00	0.27	100.0
1.D.7.c	Perseverance	4.A.4.a.6	Selling or Influencing Others	Positive	1.75	0.37	87.5
1.D.1.d	Dependability	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.00	0.27	75.0
1.D.1.e	Self-Confidence	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.88	0.30	100.0
1.D.2.a	Leadership Orientation	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.00	0.27	100.0
1.D.2.b	Social Orientation	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.88	0.35	87.5
1.D.3.a	Cooperation	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.50	0.19	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.3.b	Empathy	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.25	0.16	100.0
1.D.4.b	Integrity	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.88	0.30	100.0
1.D.4.c	Sincerity	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.00	0.19	100.0
1.D.5.a	Self-Control	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.50	0.27	100.0
1.D.5.b	Stress Tolerance	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.63	0.26	100.0
1.D.6.a	Adaptability	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.50	0.38	75.0
1.D.6.b	Innovation	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.00	0.27	75.0
1.D.6.d	Tolerance for Ambiguity	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	1.13	0.30	75.0
1.D.7.b	Optimism	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.00	0.33	100.0
1.D.7.c	Perseverance	4.A.4.a.7	Resolving Conflicts and Negotiating with Others	Positive	2.00	0.33	100.0
1.D.1.b	Attention to Detail	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.13	0.30	75.0
1.D.1.d	Dependability	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.75	0.25	100.0
1.D.1.e	Self-Confidence	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.63	0.32	87.5
1.D.2.b	Social Orientation	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	2.75	0.16	100.0
1.D.3.a	Cooperation	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	2.63	0.26	100.0
1.D.3.b	Empathy	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	2.00	0.19	100.0
1.D.4.a	Humility	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.38	0.18	100.0
1.D.4.b	Integrity	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.38	0.26	87.5
1.D.4.c	Sincerity	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.75	0.25	100.0
1.D.5.a	Self-Control	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	2.13	0.30	100.0
1.D.5.b	Stress Tolerance	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.63	0.26	100.0
1.D.6.a	Adaptability	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.50	0.33	87.5
1.D.7.b	Optimism	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	2.13	0.35	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.7.c	Perseverance	4.A.4.a.8	Performing for or Working Directly with the Public	Positive	1.25	0.37	75.0
1.D.1.b	Attention to Detail	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.25	0.25	87.5
1.D.1.d	Dependability	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.50	0.38	87.5
1.D.2.a	Leadership Orientation	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	2.63	0.26	100.0
1.D.2.b	Social Orientation	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	2.13	0.13	100.0
1.D.3.a	Cooperation	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.88	0.23	100.0
1.D.3.b	Empathy	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.50	0.27	100.0
1.D.4.c	Sincerity	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.13	0.23	87.5
1.D.5.a	Self-Control	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.50	0.33	87.5
1.D.5.b	Stress Tolerance	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.13	0.23	87.5
1.D.6.a	Adaptability	4.A.4.b.1	Coordinating the Work and Activities of Others	Positive	1.13	0.30	75.0
1.D.1.d	Dependability	4.A.4.b.2	Developing and Building Teams	Positive	1.00	0.19	87.5
1.D.1.e	Self-Confidence	4.A.4.b.2	Developing and Building Teams	Positive	1.00	0.19	87.5
1.D.2.a	Leadership Orientation	4.A.4.b.2	Developing and Building Teams	Positive	2.63	0.26	100.0
1.D.2.b	Social Orientation	4.A.4.b.2	Developing and Building Teams	Positive	2.13	0.13	100.0
1.D.3.a	Cooperation	4.A.4.b.2	Developing and Building Teams	Positive	2.38	0.26	100.0
1.D.3.b	Empathy	4.A.4.b.2	Developing and Building Teams	Positive	2.00	0.27	100.0
1.D.4.a	Humility	4.A.4.b.2	Developing and Building Teams	Positive	1.63	0.26	100.0
1.D.4.b	Integrity	4.A.4.b.2	Developing and Building Teams	Positive	2.00	0.27	100.0
1.D.4.c	Sincerity	4.A.4.b.2	Developing and Building Teams	Positive	2.00	0.19	100.0
1.D.5.a	Self-Control	4.A.4.b.2	Developing and Building Teams	Positive	1.63	0.26	100.0
1.D.5.b	Stress Tolerance	4.A.4.b.2	Developing and Building Teams	Positive	1.00	0.19	87.5
1.D.6.a	Adaptability	4.A.4.b.2	Developing and Building Teams	Positive	1.25	0.25	87.5

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.7.b	Optimism	4.A.4.b.2	Developing and Building Teams	Positive	1.50	0.27	87.5
1.D.1.a	Achievement Orientation	4.A.4.b.3	Training and Teaching Others	Positive	1.38	0.26	87.5
1.D.1.b	Attention to Detail	4.A.4.b.3	Training and Teaching Others	Positive	1.63	0.32	87.5
1.D.1.d	Dependability	4.A.4.b.3	Training and Teaching Others	Positive	1.75	0.25	100.0
1.D.1.e	Self-Confidence	4.A.4.b.3	Training and Teaching Others	Positive	1.75	0.25	100.0
1.D.2.a	Leadership Orientation	4.A.4.b.3	Training and Teaching Others	Positive	2.25	0.31	100.0
1.D.2.b	Social Orientation	4.A.4.b.3	Training and Teaching Others	Positive	2.25	0.16	100.0
1.D.3.a	Cooperation	4.A.4.b.3	Training and Teaching Others	Positive	1.88	0.30	100.0
1.D.3.b	Empathy	4.A.4.b.3	Training and Teaching Others	Positive	1.75	0.16	100.0
1.D.4.a	Humility	4.A.4.b.3	Training and Teaching Others	Positive	1.00	0.19	87.5
1.D.4.c	Sincerity	4.A.4.b.3	Training and Teaching Others	Positive	1.75	0.25	100.0
1.D.5.a	Self-Control	4.A.4.b.3	Training and Teaching Others	Positive	1.38	0.18	100.0
1.D.5.b	Stress Tolerance	4.A.4.b.3	Training and Teaching Others	Positive	1.00	0.19	87.5
1.D.6.a	Adaptability	4.A.4.b.3	Training and Teaching Others	Positive	1.25	0.25	87.5
1.D.6.b	Innovation	4.A.4.b.3	Training and Teaching Others	Positive	1.13	0.35	62.5
1.D.6.c	Intellectual Curiosity	4.A.4.b.3	Training and Teaching Others	Positive	1.63	0.26	100.0
1.D.7.a	Initiative	4.A.4.b.3	Training and Teaching Others	Positive	1.00	0.33	62.5
1.D.7.b	Optimism	4.A.4.b.3	Training and Teaching Others	Positive	1.50	0.19	100.0
1.D.7.c	Perseverance	4.A.4.b.3	Training and Teaching Others	Positive	1.13	0.30	75.0
1.D.1.a	Achievement Orientation	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.25	0.31	75.0
1.D.1.b	Attention to Detail	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.00	0.33	62.5
1.D.1.d	Dependability	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.75	0.16	100.0
1.D.1.e	Self-Confidence	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	2.00	0.33	100.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.2.a	Leadership Orientation	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	3.00	0.00	100.0
1.D.2.b	Social Orientation	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.88	0.23	100.0
1.D.3.a	Cooperation	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	2.00	0.27	100.0
1.D.3.b	Empathy	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.88	0.23	100.0
1.D.4.a	Humility	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.00	0.19	87.5
1.D.4.b	Integrity	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.50	0.19	100.0
1.D.4.c	Sincerity	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.88	0.30	100.0
1.D.5.a	Self-Control	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.75	0.31	100.0
1.D.6.a	Adaptability	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.13	0.30	75.0
1.D.6.c	Intellectual Curiosity	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.00	0.33	62.5
1.D.7.b	Optimism	4.A.4.b.4	Guiding, Directing, and Motivating Subordinates	Positive	1.88	0.30	100.0
1.D.1.a	Achievement Orientation	4.A.4.b.5	Coaching and Developing Others	Positive	1.25	0.31	75.0
1.D.1.d	Dependability	4.A.4.b.5	Coaching and Developing Others	Positive	1.75	0.16	100.0
1.D.1.e	Self-Confidence	4.A.4.b.5	Coaching and Developing Others	Positive	2.13	0.35	100.0
1.D.2.a	Leadership Orientation	4.A.4.b.5	Coaching and Developing Others	Positive	2.75	0.16	100.0
1.D.2.b	Social Orientation	4.A.4.b.5	Coaching and Developing Others	Positive	2.13	0.23	100.0
1.D.3.a	Cooperation	4.A.4.b.5	Coaching and Developing Others	Positive	2.63	0.18	100.0
1.D.3.b	Empathy	4.A.4.b.5	Coaching and Developing Others	Positive	2.25	0.25	100.0
1.D.4.a	Humility	4.A.4.b.5	Coaching and Developing Others	Positive	1.38	0.26	100.0
1.D.4.b	Integrity	4.A.4.b.5	Coaching and Developing Others	Positive	1.63	0.18	100.0
1.D.4.c	Sincerity	4.A.4.b.5	Coaching and Developing Others	Positive	2.25	0.16	100.0
1.D.5.a	Self-Control	4.A.4.b.5	Coaching and Developing Others	Positive	1.88	0.35	100.0
1.D.5.b	Stress Tolerance	4.A.4.b.5	Coaching and Developing Others	Positive	1.00	0.19	87.5

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	M	SE	% Linked in Given Direction
1.D.6.a	Adaptability	4.A.4.b.5	Coaching and Developing Others	Positive	1.75	0.31	87.5
1.D.6.c	Intellectual Curiosity	4.A.4.b.5	Coaching and Developing Others	Positive	1.63	0.32	87.5
1.D.7.a	Initiative	4.A.4.b.5	Coaching and Developing Others	Positive	1.25	0.37	75.0
1.D.7.b	Optimism	4.A.4.b.5	Coaching and Developing Others	Positive	1.88	0.30	100.0
1.D.1.a	Achievement Orientation	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.25	0.31	75.0
1.D.1.b	Attention to Detail	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.63	0.26	100.0
1.D.1.d	Dependability	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.88	0.23	100.0
1.D.1.e	Self-Confidence	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	2.25	0.31	100.0
1.D.2.a	Leadership Orientation	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	2.25	0.25	100.0
1.D.2.b	Social Orientation	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.75	0.31	100.0
1.D.3.a	Cooperation	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	2.13	0.30	100.0
1.D.3.b	Empathy	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.38	0.18	100.0
1.D.4.b	Integrity	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.75	0.25	100.0
1.D.4.c	Sincerity	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.75	0.25	100.0
1.D.5.a	Self-Control	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.13	0.23	87.5
1.D.5.b	Stress Tolerance	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.00	0.19	87.5
1.D.6.a	Adaptability	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.00	0.33	62.5
1.D.6.b	Innovation	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.25	0.37	75.0
1.D.6.c	Intellectual Curiosity	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	2.25	0.25	100.0
1.D.6.d	Tolerance for Ambiguity	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.25	0.25	87.5
1.D.7.a	Initiative	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.00	0.38	62.5
1.D.7.b	Optimism	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.25	0.25	87.5
1.D.7.c	Perseverance	4.A.4.b.6	Providing Consultation and Advice to Others	Positive	1.00	0.27	75.0

Work Styles Element ID	Work Styles Element Name	Work Activities Element ID	Work Activities Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.b	Attention to Detail	4.A.4.c.1	Performing Administrative Activities	Positive	2.50	0.19	100.0
1.D.1.d	Dependability	4.A.4.c.1	Performing Administrative Activities	Positive	1.63	0.26	100.0
1.D.1.b	Attention to Detail	4.A.4.c.2	Staffing Organizational Units	Positive	1.13	0.13	100.0
1.D.1.d	Dependability	4.A.4.c.2	Staffing Organizational Units	Positive	1.25	0.16	100.0
1.D.2.a	Leadership Orientation	4.A.4.c.2	Staffing Organizational Units	Positive	1.50	0.33	87.5
1.D.2.b	Social Orientation	4.A.4.c.2	Staffing Organizational Units	Positive	1.25	0.31	87.5
1.D.3.a	Cooperation	4.A.4.c.2	Staffing Organizational Units	Positive	1.50	0.27	87.5
1.D.1.b	Attention to Detail	4.A.4.c.3	Monitoring and Controlling Resources	Positive	2.75	0.16	100.0
1.D.1.c	Cautiousness	4.A.4.c.3	Monitoring and Controlling Resources	Positive	2.13	0.30	100.0
1.D.1.d	Dependability	4.A.4.c.3	Monitoring and Controlling Resources	Positive	1.88	0.23	100.0
1.D.4.b	Integrity	4.A.4.c.3	Monitoring and Controlling Resources	Positive	2.25	0.31	100.0

Table B.2. Final Work-Style-Work Context Linkages

Work Styles Element ID	Work Styles Element Name	Work Contexts Element ID	Work Contexts Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.d	Dependability	4.C.1.a.2.c	Public Speaking	Positive	1.00	0.27	75.0
1.D.1.e	Self-Confidence	4.C.1.a.2.c	Public Speaking	Positive	2.75	0.16	100.0
1.D.2.b	Social Orientation	4.C.1.a.2.c	Public Speaking	Positive	2.00	0.33	100.0
1.D.4.c	Sincerity	4.C.1.a.2.c	Public Speaking	Positive	1.63	0.38	87.5
1.D.5.a	Self-Control	4.C.1.a.2.c	Public Speaking	Positive	1.88	0.30	100.0
1.D.5.b	Stress Tolerance	4.C.1.a.2.c	Public Speaking	Positive	1.88	0.30	100.0
1.D.7.b	Optimism	4.C.1.a.2.c	Public Speaking	Positive	1.50	0.27	87.5
1.D.2.b	Social Orientation	4.C.1.a.2.f	Telephone	Positive	1.50	0.19	100.0
1.D.3.a	Cooperation	4.C.1.a.2.f	Telephone	Positive	1.13	0.13	100.0
1.D.3.b	Empathy	4.C.1.a.2.f	Telephone	Positive	1.13	0.13	100.0
1.D.4.c	Sincerity	4.C.1.a.2.f	Telephone	Positive	1.25	0.16	100.0
1.D.5.a	Self-Control	4.C.1.a.2.f	Telephone	Positive	1.25	0.25	87.5
1.D.1.b	Attention to Detail	4.C.1.a.2.j	Letters and Memos	Positive	1.00	0.19	87.5
1.D.1.e	Self-Confidence	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.25	0.16	100.0
1.D.2.b	Social Orientation	4.C.1.a.2.l	Face-to-Face Discussions	Positive	2.38	0.18	100.0
1.D.3.a	Cooperation	4.C.1.a.2.l	Face-to-Face Discussions	Positive	2.00	0.33	100.0
1.D.3.b	Empathy	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.50	0.27	100.0
1.D.4.b	Integrity	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.25	0.31	75.0
1.D.4.c	Sincerity	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.88	0.23	100.0
1.D.5.a	Self-Control	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.63	0.18	100.0
1.D.5.b	Stress Tolerance	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.00	0.00	100.0
1.D.6.a	Adaptability	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.00	0.27	75.0
1.D.7.b	Optimism	4.C.1.a.2.l	Face-to-Face Discussions	Positive	1.00	0.27	75.0
1.D.1.e	Self-Confidence	4.C.1.a.4	Contact With Others	Positive	1.25	0.16	100.0

Work Styles Element ID	Work Styles Element Name	Work Contexts Element ID	Work Contexts Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.2.b	Social Orientation	4.C.1.a.4	Contact With Others	Positive	2.63	0.18	100.0
1.D.3.a	Cooperation	4.C.1.a.4	Contact With Others	Positive	1.75	0.25	100.0
1.D.3.b	Empathy	4.C.1.a.4	Contact With Others	Positive	1.50	0.27	100.0
1.D.4.a	Humility	4.C.1.a.4	Contact With Others	Positive	1.13	0.35	75.0
1.D.4.b	Integrity	4.C.1.a.4	Contact With Others	Positive	1.13	0.30	75.0
1.D.4.c	Sincerity	4.C.1.a.4	Contact With Others	Positive	1.63	0.18	100.0
1.D.5.a	Self-Control	4.C.1.a.4	Contact With Others	Positive	1.63	0.26	100.0
1.D.6.a	Adaptability	4.C.1.a.4	Contact With Others	Positive	1.13	0.30	75.0
1.D.7.b	Optimism	4.C.1.a.4	Contact With Others	Positive	1.13	0.23	87.5
1.D.1.b	Attention to Detail	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.13	0.23	87.5
1.D.1.d	Dependability	4.C.1.b.1.e	Work With Work Group or Team	Positive	2.75	0.16	100.0
1.D.1.e	Self-Confidence	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.50	0.19	100.0
1.D.2.a	Leadership Orientation	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.00	0.42	75.0
1.D.2.b	Social Orientation	4.C.1.b.1.e	Work With Work Group or Team	Positive	2.25	0.31	100.0
1.D.3.a	Cooperation	4.C.1.b.1.e	Work With Work Group or Team	Positive	2.75	0.16	100.0
1.D.3.b	Empathy	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.88	0.30	100.0
1.D.4.a	Humility	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.38	0.18	100.0
1.D.4.b	Integrity	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.25	0.25	87.5
1.D.4.c	Sincerity	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.75	0.25	100.0
1.D.5.a	Self-Control	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.88	0.30	100.0
1.D.5.b	Stress Tolerance	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.13	0.23	87.5
1.D.6.a	Adaptability	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.63	0.38	87.5
1.D.7.a	Initiative	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.38	0.18	100.0
1.D.7.b	Optimism	4.C.1.b.1.e	Work With Work Group or Team	Positive	1.63	0.32	87.5
1.D.1.b	Attention to Detail	4.C.1.b.1.f	Deal With External Customers	Positive	1.00	0.27	75.0

Work Styles Element ID	Work Styles Element Name	Work Contexts Element ID	Work Contexts Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
1.D.1.d	Dependability	4.C.1.b.1.f	Deal With External Customers	Positive	1.63	0.18	100.0
1.D.1.e	Self-Confidence	4.C.1.b.1.f	Deal With External Customers	Positive	2.00	0.19	100.0
1.D.2.a	Leadership Orientation	4.C.1.b.1.f	Deal With External Customers	Positive	1.00	0.38	62.5
1.D.2.b	Social Orientation	4.C.1.b.1.f	Deal With External Customers	Positive	2.63	0.18	100.0
1.D.3.a	Cooperation	4.C.1.b.1.f	Deal With External Customers	Positive	2.50	0.19	100.0
1.D.3.b	Empathy	4.C.1.b.1.f	Deal With External Customers	Positive	2.13	0.23	100.0
1.D.4.a	Humility	4.C.1.b.1.f	Deal With External Customers	Positive	1.13	0.23	87.5
1.D.4.b	Integrity	4.C.1.b.1.f	Deal With External Customers	Positive	1.38	0.32	87.5
1.D.4.c	Sincerity	4.C.1.b.1.f	Deal With External Customers	Positive	1.88	0.23	100.0
1.D.5.a	Self-Control	4.C.1.b.1.f	Deal With External Customers	Positive	2.25	0.25	100.0
1.D.5.b	Stress Tolerance	4.C.1.b.1.f	Deal With External Customers	Positive	1.63	0.38	87.5
1.D.6.a	Adaptability	4.C.1.b.1.f	Deal With External Customers	Positive	1.50	0.38	87.5
1.D.6.d	Tolerance for Ambiguity	4.C.1.b.1.f	Deal With External Customers	Positive	1.38	0.42	75.0
1.D.7.b	Optimism	4.C.1.b.1.f	Deal With External Customers	Positive	1.75	0.31	100.0
1.D.7.c	Perseverance	4.C.1.b.1.f	Deal With External Customers	Positive	1.13	0.35	62.5
1.D.1.a	Achievement Orientation	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.25	0.45	62.5
1.D.1.b	Attention to Detail	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.38	0.32	87.5
1.D.1.d	Dependability	4.C.1.b.1.g	Coordinate or Lead Others	Positive	2.13	0.30	100.0
1.D.1.e	Self-Confidence	4.C.1.b.1.g	Coordinate or Lead Others	Positive	2.38	0.18	100.0
1.D.2.a	Leadership Orientation	4.C.1.b.1.g	Coordinate or Lead Others	Positive	3.00	0.00	100.0
1.D.2.b	Social Orientation	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.75	0.25	100.0
1.D.3.a	Cooperation	4.C.1.b.1.g	Coordinate or Lead Others	Positive	2.25	0.16	100.0
1.D.3.b	Empathy	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.50	0.27	100.0
1.D.4.b	Integrity	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.50	0.38	87.5
1.D.4.c	Sincerity	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.88	0.23	100.0

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1.D.5.a	Self-Control	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.63	0.26	100.0
1.D.5.b	Stress Tolerance	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.38	0.26	100.0
1.D.6.a	Adaptability	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.25	0.25	87.5
1.D.7.a	Initiative	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.38	0.18	100.0
1.D.7.b	Optimism	4.C.1.b.1.g	Coordinate or Lead Others	Positive	1.38	0.26	87.5
1.D.1.a	Achievement Orientation	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	1.00	0.33	75.0
1.D.1.b	Attention to Detail	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.00	0.38	87.5
1.D.1.c	Cautiousness	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.50	0.27	100.0
1.D.1.d	Dependability	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.38	0.26	100.0
1.D.1.e	Self-Confidence	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	1.63	0.42	75.0
1.D.2.a	Leadership Orientation	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.50	0.27	100.0
1.D.3.a	Cooperation	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	1.38	0.38	75.0
1.D.3.b	Empathy	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.13	0.30	100.0
1.D.4.b	Integrity	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.00	0.33	100.0
1.D.4.c	Sincerity	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	1.25	0.37	62.5
1.D.5.a	Self-Control	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	1.63	0.26	100.0
1.D.5.b	Stress Tolerance	4.C.1.c.1	Responsible for Others' Health and Safety	Positive	2.25	0.25	100.0
1.D.1.a	Achievement Orientation	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	2.00	0.33	87.5
1.D.1.b	Attention to Detail	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.88	0.40	87.5
1.D.1.c	Cautiousness	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.38	0.32	87.5
1.D.1.d	Dependability	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	2.75	0.16	100.0
1.D.1.e	Self-Confidence	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	2.00	0.27	100.0
1.D.2.a	Leadership Orientation	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	2.75	0.16	100.0
1.D.4.b	Integrity	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.75	0.31	100.0
1.D.4.c	Sincerity	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.00	0.27	75.0

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1.D.5.a	Self-Control	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.50	0.27	100.0
1.D.5.b	Stress Tolerance	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	2.13	0.23	100.0
1.D.6.d	Tolerance for Ambiguity	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.13	0.23	87.5
1.D.7.a	Initiative	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.50	0.19	100.0
1.D.7.c	Perseverance	4.C.1.c.2	Responsibility for Outcomes and Results	Positive	1.50	0.19	100.0
1.D.1.d	Dependability	4.C.1.d.1	Conflict Situations	Positive	1.13	0.30	75.0
1.D.1.e	Self-Confidence	4.C.1.d.1	Conflict Situations	Positive	1.88	0.23	100.0
1.D.2.a	Leadership Orientation	4.C.1.d.1	Conflict Situations	Positive	2.13	0.30	100.0
1.D.2.b	Social Orientation	4.C.1.d.1	Conflict Situations	Positive	1.25	0.37	75.0
1.D.3.a	Cooperation	4.C.1.d.1	Conflict Situations	Positive	1.50	0.27	100.0
1.D.3.b	Empathy	4.C.1.d.1	Conflict Situations	Positive	2.25	0.16	100.0
1.D.4.b	Integrity	4.C.1.d.1	Conflict Situations	Positive	1.75	0.31	87.5
1.D.4.c	Sincerity	4.C.1.d.1	Conflict Situations	Positive	1.63	0.26	100.0
1.D.5.a	Self-Control	4.C.1.d.1	Conflict Situations	Positive	3.00	0.00	100.0
1.D.5.b	Stress Tolerance	4.C.1.d.1	Conflict Situations	Positive	3.00	0.00	100.0
1.D.6.a	Adaptability	4.C.1.d.1	Conflict Situations	Positive	1.75	0.37	87.5
1.D.6.b	Innovation	4.C.1.d.1	Conflict Situations	Positive	1.00	0.38	62.5
1.D.6.d	Tolerance for Ambiguity	4.C.1.d.1	Conflict Situations	Positive	1.63	0.38	87.5
1.D.7.b	Optimism	4.C.1.d.1	Conflict Situations	Positive	1.63	0.26	100.0
1.D.7.c	Perseverance	4.C.1.d.1	Conflict Situations	Positive	1.63	0.32	87.5
1.D.1.e	Self-Confidence	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.88	0.23	100.0
1.D.2.a	Leadership Orientation	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.63	0.26	100.0
1.D.2.b	Social Orientation	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.25	0.37	75.0
1.D.3.a	Cooperation	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.75	0.31	100.0
1.D.3.b	Empathy	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	2.13	0.23	100.0

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1.D.4.b	Integrity	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.13	0.40	62.5
1.D.4.c	Sincerity	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.50	0.19	100.0
1.D.5.a	Self-Control	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	3.00	0.00	100.0
1.D.5.b	Stress Tolerance	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	3.00	0.00	100.0
1.D.6.a	Adaptability	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.50	0.38	87.5
1.D.6.d	Tolerance for Ambiguity	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.25	0.41	75.0
1.D.7.b	Optimism	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.63	0.26	100.0
1.D.7.c	Perseverance	4.C.1.d.2	Deal With Unpleasant or Angry People	Positive	1.38	0.32	87.5
1.D.1.c	Cautiousness	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.63	0.32	87.5
1.D.1.e	Self-Confidence	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.63	0.26	100.0
1.D.2.a	Leadership Orientation	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.38	0.32	87.5
1.D.3.b	Empathy	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.50	0.42	87.5
1.D.4.a	Humility	4.C.1.d.3	Deal With Physically Aggressive People	Negative	-1.13	0.35	88.0
1.D.4.b	Integrity	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.00	0.38	62.5
1.D.5.a	Self-Control	4.C.1.d.3	Deal With Physically Aggressive People	Positive	3.00	0.00	100.0
1.D.5.b	Stress Tolerance	4.C.1.d.3	Deal With Physically Aggressive People	Positive	3.00	0.00	100.0
1.D.6.a	Adaptability	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.25	0.45	62.5
1.D.6.d	Tolerance for Ambiguity	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.25	0.41	75.0
1.D.7.b	Optimism	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.13	0.30	75.0
1.D.7.c	Perseverance	4.C.1.d.3	Deal With Physically Aggressive People	Positive	1.38	0.32	87.5
1.D.5.b	Stress Tolerance	4.C.2.a.1.c	Outdoors, Exposed to Weather	Positive	1.13	0.35	62.5
1.D.1.c	Cautiousness	4.C.2.a.1.e	In an Open Vehicle or Equipment	Positive	1.50	0.33	87.5
1.D.2.b	Social Orientation	4.C.2.a.3	Physical Proximity	Positive	1.25	0.31	75.0
1.D.3.b	Empathy	4.C.2.a.3	Physical Proximity	Positive	1.00	0.38	62.5
1.D.5.b	Stress Tolerance	4.C.2.a.3	Physical Proximity	Positive	1.00	0.19	87.5

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1.D.5.a	Self-Control	4.C.2.b.1.a	Sounds, Noise Levels Are Distracting or Uncomfortable	Positive	1.00	0.19	87.5
1.D.5.b	Stress Tolerance	4.C.2.b.1.a	Sounds, Noise Levels Are Distracting or Uncomfortable	Positive	2.13	0.23	100.0
1.D.7.c	Perseverance	4.C.2.b.1.a	Sounds, Noise Levels Are Distracting or Uncomfortable	Positive	1.50	0.27	100.0
1.D.5.b	Stress Tolerance	4.C.2.b.1.b	Very Hot or Cold Temperatures	Positive	1.50	0.38	87.5
1.D.7.c	Perseverance	4.C.2.b.1.b	Very Hot or Cold Temperatures	Positive	1.50	0.27	100.0
1.D.5.b	Stress Tolerance	4.C.2.b.1.c	Extremely Bright or Inadequate Lighting	Positive	1.50	0.38	87.5
1.D.7.c	Perseverance	4.C.2.b.1.c	Extremely Bright or Inadequate Lighting	Positive	1.50	0.33	87.5
1.D.1.c	Cautiousness	4.C.2.b.1.d	Exposed to Contaminants	Positive	2.13	0.30	100.0
1.D.5.a	Self-Control	4.C.2.b.1.d	Exposed to Contaminants	Positive	1.00	0.38	62.5
1.D.5.b	Stress Tolerance	4.C.2.b.1.d	Exposed to Contaminants	Positive	1.88	0.30	100.0
1.D.7.c	Perseverance	4.C.2.b.1.d	Exposed to Contaminants	Positive	1.50	0.38	75.0
1.D.5.a	Self-Control	4.C.2.b.1.e	Cramped Work Space, Awkward Positions	Positive	1.00	0.33	75.0
1.D.5.b	Stress Tolerance	4.C.2.b.1.e	Cramped Work Space, Awkward Positions	Positive	1.38	0.38	87.5
1.D.7.c	Perseverance	4.C.2.b.1.e	Cramped Work Space, Awkward Positions	Positive	1.63	0.26	100.0
1.D.5.b	Stress Tolerance	4.C.2.b.1.f	Exposed to Whole Body Vibration	Positive	1.50	0.46	75.0
1.D.7.c	Perseverance	4.C.2.b.1.f	Exposed to Whole Body Vibration	Positive	1.63	0.32	87.5
1.D.1.c	Cautiousness	4.C.2.c.1.a	Exposed to Radiation	Positive	2.25	0.25	100.0
1.D.5.b	Stress Tolerance	4.C.2.c.1.a	Exposed to Radiation	Positive	2.13	0.30	100.0
1.D.7.c	Perseverance	4.C.2.c.1.a	Exposed to Radiation	Positive	1.38	0.42	62.5
1.D.1.c	Cautiousness	4.C.2.c.1.b	Exposed to Disease or Infections	Positive	2.25	0.16	100.0
1.D.5.a	Self-Control	4.C.2.c.1.b	Exposed to Disease or Infections	Positive	1.00	0.33	75.0
1.D.5.b	Stress Tolerance	4.C.2.c.1.b	Exposed to Disease or Infections	Positive	2.25	0.31	100.0
1.D.7.c	Perseverance	4.C.2.c.1.b	Exposed to Disease or Infections	Positive	1.38	0.42	62.5

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1.D.1.c	Cautiousness	4.C.2.c.1.c	Exposed to High Places	Positive	2.50	0.27	100.0
1.D.5.a	Self-Control	4.C.2.c.1.c	Exposed to High Places	Positive	1.00	0.33	75.0
1.D.5.b	Stress Tolerance	4.C.2.c.1.c	Exposed to High Places	Positive	2.13	0.30	100.0
1.D.7.c	Perseverance	4.C.2.c.1.c	Exposed to High Places	Positive	1.38	0.38	75.0
1.D.1.c	Cautiousness	4.C.2.c.1.d	Exposed to Hazardous Conditions	Positive	2.50	0.19	100.0
1.D.5.a	Self-Control	4.C.2.c.1.d	Exposed to Hazardous Conditions	Positive	1.25	0.31	87.5
1.D.5.b	Stress Tolerance	4.C.2.c.1.d	Exposed to Hazardous Conditions	Positive	2.38	0.26	100.0
1.D.7.c	Perseverance	4.C.2.c.1.d	Exposed to Hazardous Conditions	Positive	1.38	0.38	75.0
1.D.1.c	Cautiousness	4.C.2.c.1.e	Exposed to Hazardous Equipment	Positive	2.50	0.19	100.0
1.D.5.a	Self-Control	4.C.2.c.1.e	Exposed to Hazardous Equipment	Positive	1.00	0.33	75.0
1.D.5.b	Stress Tolerance	4.C.2.c.1.e	Exposed to Hazardous Equipment	Positive	2.25	0.25	100.0
1.D.7.c	Perseverance	4.C.2.c.1.e	Exposed to Hazardous Equipment	Positive	1.38	0.38	75.0
1.D.1.c	Cautiousness	4.C.2.c.1.f	Exposed to Minor Burns, Cuts, Bites, or Stings	Positive	1.00	0.27	75.0
1.D.5.b	Stress Tolerance	4.C.2.c.1.f	Exposed to Minor Burns, Cuts, Bites, or Stings	Positive	1.13	0.35	75.0
1.D.7.c	Perseverance	4.C.2.c.1.f	Exposed to Minor Burns, Cuts, Bites, or Stings	Positive	1.38	0.38	75.0
1.D.1.c	Cautiousness	4.C.2.d.1.c	Spend Time Climbing Ladders, Scaffolds, or Poles	Positive	1.38	0.26	87.5
1.D.5.b	Stress Tolerance	4.C.2.d.1.c	Spend Time Climbing Ladders, Scaffolds, or Poles	Positive	1.13	0.30	75.0
1.D.7.c	Perseverance	4.C.2.d.1.i	Spend Time Making Repetitive Motions	Positive	1.00	0.33	62.5
1.D.1.c	Cautiousness	4.C.2.e.1.d	Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets	Positive	1.50	0.27	100.0
1.D.1.c	Cautiousness	4.C.2.e.1.e	Wear Specialized Protective or Safety Equipment such as Breathing Apparatus,	Positive	1.75	0.25	100.0

Work Styles Element ID	Work Styles Element Name	Work Contexts Element ID	Work Contexts Element Name	Direction of Linkage	<i>M</i>	<i>SE</i>	% Linked in Given Direction
			Safety Harness, Full Protection Suits, or Radiation Protection				
1.D.1.a	Achievement Orientation	4.C.3.a.1	Consequence of Error	Positive	1.13	0.35	75.0
1.D.1.b	Attention to Detail	4.C.3.a.1	Consequence of Error	Positive	2.50	0.27	100.0
1.D.1.c	Cautiousness	4.C.3.a.1	Consequence of Error	Positive	2.63	0.18	100.0
1.D.1.d	Dependability	4.C.3.a.1	Consequence of Error	Positive	2.38	0.26	100.0
1.D.1.e	Self-Confidence	4.C.3.a.1	Consequence of Error	Positive	1.75	0.31	100.0
1.D.4.b	Integrity	4.C.3.a.1	Consequence of Error	Positive	1.25	0.41	62.5
1.D.5.a	Self-Control	4.C.3.a.1	Consequence of Error	Positive	2.25	0.25	100.0
1.D.5.b	Stress Tolerance	4.C.3.a.1	Consequence of Error	Positive	2.63	0.18	100.0
1.D.7.c	Perseverance	4.C.3.a.1	Consequence of Error	Positive	1.50	0.27	100.0
1.D.1.a	Achievement Orientation	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.38	0.32	87.5
1.D.1.b	Attention to Detail	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	2.25	0.37	87.5
1.D.1.c	Cautiousness	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.88	0.30	100.0
1.D.1.d	Dependability	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	2.13	0.30	100.0
1.D.1.e	Self-Confidence	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.88	0.30	100.0
1.D.2.a	Leadership Orientation	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	2.13	0.35	87.5
1.D.3.b	Empathy	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.13	0.35	75.0
1.D.4.b	Integrity	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.63	0.32	100.0
1.D.5.a	Self-Control	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.38	0.32	87.5

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1.D.5.b	Stress Tolerance	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	2.75	0.16	100.0
1.D.6.d	Tolerance for Ambiguity	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.13	0.35	62.5
1.D.7.c	Perseverance	4.C.3.a.2.a	Impact of Decisions on Co-workers or Company Results	Positive	1.25	0.31	87.5
1.D.1.a	Achievement Orientation	4.C.3.a.4	Freedom to Make Decisions	Positive	1.63	0.32	100.0
1.D.1.b	Attention to Detail	4.C.3.a.4	Freedom to Make Decisions	Positive	1.38	0.38	75.0
1.D.1.d	Dependability	4.C.3.a.4	Freedom to Make Decisions	Positive	2.13	0.23	100.0
1.D.1.e	Self-Confidence	4.C.3.a.4	Freedom to Make Decisions	Positive	2.13	0.23	100.0
1.D.2.a	Leadership Orientation	4.C.3.a.4	Freedom to Make Decisions	Positive	1.63	0.32	100.0
1.D.4.b	Integrity	4.C.3.a.4	Freedom to Make Decisions	Positive	1.38	0.38	75.0
1.D.5.a	Self-Control	4.C.3.a.4	Freedom to Make Decisions	Positive	1.00	0.27	75.0
1.D.5.b	Stress Tolerance	4.C.3.a.4	Freedom to Make Decisions	Positive	1.25	0.25	87.5
1.D.6.a	Adaptability	4.C.3.a.4	Freedom to Make Decisions	Positive	1.00	0.27	75.0
1.D.6.b	Innovation	4.C.3.a.4	Freedom to Make Decisions	Positive	1.00	0.33	75.0
1.D.6.c	Intellectual Curiosity	4.C.3.a.4	Freedom to Make Decisions	Positive	1.13	0.30	75.0
1.D.6.d	Tolerance for Ambiguity	4.C.3.a.4	Freedom to Make Decisions	Positive	1.75	0.37	87.5
1.D.7.a	Initiative	4.C.3.a.4	Freedom to Make Decisions	Positive	1.50	0.38	75.0
1.D.1.a	Achievement Orientation	4.C.3.b.4	Importance of Being Exact or Accurate	Positive	1.00	0.33	62.5
1.D.1.b	Attention to Detail	4.C.3.b.4	Importance of Being Exact or Accurate	Positive	3.00	0.00	100.0
1.D.1.c	Cautiousness	4.C.3.b.4	Importance of Being Exact or Accurate	Positive	2.25	0.16	100.0
1.D.1.d	Dependability	4.C.3.b.4	Importance of Being Exact or Accurate	Positive	1.88	0.30	100.0
1.D.1.b	Attention to Detail	4.C.3.b.7	Importance of Repeating Same Tasks	Positive	1.00	0.19	87.5
1.D.1.d	Dependability	4.C.3.b.7	Importance of Repeating Same Tasks	Positive	1.25	0.16	100.0
1.D.7.c	Perseverance	4.C.3.b.7	Importance of Repeating Same Tasks	Positive	1.25	0.16	100.0

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1.D.1.a	Achievement Orientation	4.C.3.b.8b	Unstructured Work	Positive	2.25	0.31	100.0
1.D.1.b	Attention to Detail	4.C.3.b.8b	Unstructured Work	Positive	1.13	0.30	75.0
1.D.1.d	Dependability	4.C.3.b.8b	Unstructured Work	Positive	1.63	0.42	75.0
1.D.1.e	Self-Confidence	4.C.3.b.8b	Unstructured Work	Positive	1.38	0.26	100.0
1.D.2.a	Leadership Orientation	4.C.3.b.8b	Unstructured Work	Positive	1.13	0.35	75.0
1.D.4.b	Integrity	4.C.3.b.8b	Unstructured Work	Positive	1.00	0.33	62.5
1.D.6.a	Adaptability	4.C.3.b.8b	Unstructured Work	Positive	1.75	0.25	100.0
1.D.6.b	Innovation	4.C.3.b.8b	Unstructured Work	Positive	1.25	0.31	87.5
1.D.6.c	Intellectual Curiosity	4.C.3.b.8b	Unstructured Work	Positive	1.13	0.30	75.0
1.D.6.d	Tolerance for Ambiguity	4.C.3.b.8b	Unstructured Work	Positive	2.50	0.27	100.0
1.D.7.a	Initiative	4.C.3.b.8b	Unstructured Work	Positive	2.00	0.27	100.0
1.D.1.a	Achievement Orientation	4.C.3.c.1	Level of Competition	Positive	2.50	0.27	100.0
1.D.1.e	Self-Confidence	4.C.3.c.1	Level of Competition	Positive	2.13	0.13	100.0
1.D.2.a	Leadership Orientation	4.C.3.c.1	Level of Competition	Positive	1.38	0.32	87.5
1.D.3.a	Cooperation	4.C.3.c.1	Level of Competition	Negative	-1.13	0.30	75.0
1.D.4.a	Humility	4.C.3.c.1	Level of Competition	Negative	-1.50	0.27	87.5
1.D.5.a	Self-Control	4.C.3.c.1	Level of Competition	Positive	1.63	0.26	100.0
1.D.5.b	Stress Tolerance	4.C.3.c.1	Level of Competition	Positive	2.13	0.30	100.0
1.D.6.a	Adaptability	4.C.3.c.1	Level of Competition	Positive	1.38	0.26	87.5
1.D.6.b	Innovation	4.C.3.c.1	Level of Competition	Positive	1.25	0.31	75.0
1.D.6.c	Intellectual Curiosity	4.C.3.c.1	Level of Competition	Positive	1.00	0.33	62.5
1.D.7.a	Initiative	4.C.3.c.1	Level of Competition	Positive	1.63	0.38	87.5
1.D.7.c	Perseverance	4.C.3.c.1	Level of Competition	Positive	1.38	0.26	87.5
1.D.1.a	Achievement Orientation	4.C.3.d.1	Time Pressure	Positive	1.75	0.16	100.0
1.D.1.b	Attention to Detail	4.C.3.d.1	Time Pressure	Positive	1.00	0.19	87.5

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1.D.1.d	Dependability	4.C.3.d.1	Time Pressure	Positive	2.38	0.32	100.0
1.D.1.e	Self-Confidence	4.C.3.d.1	Time Pressure	Positive	1.13	0.35	75.0
1.D.5.a	Self-Control	4.C.3.d.1	Time Pressure	Positive	2.13	0.23	100.0
1.D.5.b	Stress Tolerance	4.C.3.d.1	Time Pressure	Positive	2.25	0.25	100.0
1.D.7.c	Perseverance	4.C.3.d.1	Time Pressure	Positive	2.00	0.33	100.0
1.D.5.b	Stress Tolerance	4.C.3.d.3	Pace Determined by Speed of Equipment	Positive	1.13	0.35	75.0
1.D.6.a	Adaptability	4.C.3.d.4b	Work Schedule - Irregular	Positive	1.38	0.32	87.5
1.D.6.d	Tolerance for Ambiguity	4.C.3.d.4b	Work Schedule - Irregular	Positive	1.25	0.31	75.0