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Toward a Dimensional Model of Vocational Interests

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Growing evidence on the predictive validity of vocational interests for job performance calls for greater consideration of interest assessment in organizations. However, a consensus on the fundamental dimensions of interests that are aligned with the contemporary world of work is still lacking. In the current research, we developed an organizing framework of vocational interests and empirically validated an 8-dimension model (SETPOINT: Health *S*cience, Creative *E*xpression, *T*echnology, *P*eople, *O*rganization, *I*nfluence, *N*ature, and *T*hings). We propose that interests are structured hierarchically, with preferences for specific work activities at the lowest level (assessed using interest items), basic interests for homogeneous classes of activities at the intermediate level (assessed using basic interest scales), and broad-band interest dimensions describing general tendencies of individuals to be drawn to or motivated by broad types of work environments at the top. To derive broad-band interest dimensions, it is necessary to base it on a comprehensive range of content-specific basic interest constructs. In Study 1, we conducted an extensive review of existing basic interest scales and developed a new assessment of basic interests with 41 homogeneous scales across two samples. In Study 2, we demonstrated the structural validity of the proposed dimensional model using second-order confirmatory factor analysis and exploratory structural equation modeling with a large, diverse sample of working adults and supported its predictive validity for occupational membership in new and traditional sectors of work. We discuss implications from the current findings for building interest theory, using interest assessment for organizational research, and evaluating interest structure with appropriate methods.

Keywords: vocational interests, basic interests, broad-band interest dimensions, second-order confirmatory factor analysis (CFA), exploratory structural equation modeling (ESEM)

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There has been a resurgence in the study of interests in industrial−organizational (I-O) psychology in recent years. Meta-analyses conducted by two independent research teams (Nye, Su, Rounds, & Drasgow, 2012, 2017; Van Iddekinge, Roth, Putka, & Lanivich, 2011) have linked vocational interests and the fit between individual interests and their environments to various criteria of job performance. Interests have also been shown to have incremental validity over cognitive ability and personality traits in predicting job performance (Van Iddekinge, Putka, & Campbell, 2011) and career success (Rounds & Su, 2014; Stoll et al., 2017). This burgeoning evidence on the validity of interests for predicting performance behaviors, along with long-established findings that interests drive educational and occupational choices (Kuder, 1977; Lubinski, 2000; Strong, 1943), highlights the importance of interests for work-related outcomes and calls the field toward greater attention to and consideration of interest assessment in personnel selection and beyond (Van Iddekinge, Putka, et al., 2011).

Despite the increasing need for understanding and assessing interests in organizational research, a clear consensus on the fundamental structure of vocational interests is still lacking. A recent study of I-O psychologists' professional opinions on interest inventories (Mandelke, Shoenfelt, & Brown, 2016) reported that, although most I-O psychologists surveyed agreed that interest assessment is valuable for employee selection, development, and

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other organizational functions, almost all the participants (89%) believed that further research on interest assessment is warranted. Unlike personality research, where the five-factor model (FFM; Costa & McCrae, 1992; Goldberg, 1993) of personality traits serves as an organizing framework (for dissent, see Ashton et al., 2004, and Saucier, 2009), the field of vocational interests does not have a dimensional model. Early factor-analytic studies that attempted to reveal the dimensional structure of interests (Guilford, Christensen, Bond, & Sutton, 1954; Jackson, 1977; Kuder, 1977; Thurstone, 1931; Torr, 1953) were mostly empirical in nature and were rarely guided by well-developed theories on what interests are and what items or scales should be analyzed, leading to divergent findings. As a result, existing interest inventories often assess different numbers and types of interest constructs. Su, Rounds, and Armstrong (2009, pp. 866–867) made an attempt to classify these scales, providing a glimpse of the broad range and diversity of constructs used in interest research. For example, the Self-Directed Search (Holland, Fritzsche, & Powell, 1994) measures six interest types based on Holland's (1959, 1997) model, the most commonly adopted interest structure. Holland proposed that people can be characterized based on their similarity to six vocational personality types—*R*ealistic, *I*nvestigative, *A*rtistic, *S*ocial, *E*nterprising, and *C*onventional, collectively referred to as RIASEC. These six types are arranged in a hexagonal structure, reflecting two underlying interest dimensions: Data−Ideas and People−Things (Prediger, 1982). In contrast, the Campbell Interest and Skill Survey (CISS; Campbell, Hyne, & Nilsen, 1992) measures interests that are grouped into seven "orientations." The Vocational Interest Inventory—Revised edition (Lunneborg, 1993) measures interests in eight occupational clusters based on Anne Roe's (1956) theory of occupational classification. The sheer number of interest inventories and scales using different structural models is overwhelming.

The lack of consensus on the dimensional structure of vocational interests hinders the communication and accumulation of research findings and impedes the advancement of interest theory. The measurement tradition from which interest research stemmed and the availability of myriad interest inventories assessing different constructs have deterred the establishment of a unifying theoretical framework. Many scholars in the field lament this dustbowl empiricism and the underdevelopment of conceptual understandings of interests (e.g., Dawis, 1980; Savickas, 1999; Silvia, 2001). The importance of consensus on a fundamental dimensional model is well observed in other fields of psychological sciences. The introduction of the FFM, for example, has enabled meaningful meta-analytic synthesis of empirical findings without comparing "apples and oranges" and greatly facilitated the accumulation of scientific knowledge about the role of personality in the work context (e.g., Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991). Similarly, a unifying dimensional model of interests is critically needed for the synthesis of interest research and further advancement of interest theory. As demonstrated by recent meta-analytic findings (Nye et al., 2012, 2017; Van Iddekinge, Roth, et al., 2011), interest congruence, or the fit between employees' vocational interests and their jobs, is a key predictor of job performance. Establishing a unifying dimensional model of interests is even more critical in congruence research because a corresponding organizing framework of individual differences and work environments is needed for assessing commensurate person and environment characteristics and evaluating the effect of person−environment fit.

There is another reason why a renewed understanding about fundamental dimensions of interests is necessary. Interests are contextualized and describe individuals *in relation to* their environments (Rounds & Su, 2014). The assumption of correspondence between interest types and occupational clusters serves as the foundation for career guidance. However, the RIASEC model and most other structural models of interests (e.g., Jackson, 1977; Kuder, 1977; Roe, 1956) were developed before the 1980s using limited and dated ranges of occupational titles and work tasks (cf. Deng, Armstrong, & Rounds, 2007). The world of work has undergone significant changes in the past four decades. New industries and occupations have emerged, the representation of various sectors of the economy has shifted, and the nature of jobs and work tasks has evolved, all of which may have resulted in changes in the structure of interests.

Two sectors of the economy that have witnessed the fastest development and expansion are healthcare and technology (U.S. Bureau of Labor Statistics [BLS], 2017, 2018). Healthcare occupations, for example, currently employ 12.6 million individuals in the United States, representing one of the largest sectors—nearly 9%—of total national employment. Science, technology, engineering, and mathematics (STEM) occupations employ nearly 8.9 million individuals and represent 6.2% of total U.S. employment (BLS, 2018). These two sectors are projected to account for the largest shares of new job creation from 2016 to 2026 and contain all 10 fastest growing occupations in the coming decade (BLS, 2017). However, interests in these two sectors are not well represented by existing interest models: Interests in healthcare are represented partially by the Social interest type in the Holland model (health service) and partially by the Investigative type (life science and medical science), and interests in STEM are represented partially by the Investigative type (science and mathematics) and partially by the Realistic type (engineering and technology) in the Holland model.

Another important shift in the economy over the past decade is the "greening of the world of work" (Dierdorff et al., 2009, p. 1; Dierdorff, Norton, Gregory, Rivkin, & Lewis, 2011). Increasing concerns about climate change and sustainability of the traditional economy has led to increased attention to environmental protection and Nature conservation and the emergence and growth of green occupations, such as climate change analysts (19–2041.01 in the Standard Occupational Classification [SOC] system; BLS, 2010), environmental restoration planners (SOC 19–2041.02), industrial ecologists (SOC 19–2041.03), and brownfield redevelopment specialists (SOC 11–9199.11). Traditional industries, such as agriculture and forestry, have transitioned to incorporate new work tasks and require new skills for employees. Additionally, traditional occupations related to nature and green space in the community, such as landscape architects (SOC 17–1012.00), have increased in demand. A line of research sponsored by the U.S. Department of Labor has been devoted to examining the green economy and its implications for occupational classification and worker requirements (Dierdorff et al., 2009, 2011). Interest profiles for new and emerging occupations in the SOC system—many of which are green occupations—have been developed (Rounds, Su, Lewis, & Rivkin, 2013). However, interest in the green sector is not well represented in existing interest models. In the Holland model, for example, interests related to

agriculture, forestry, and nature conservation activities have been grouped into the Realistic type along with interests in mechanics−electronics, construction, transportation, and manual and physical labor, many of which are within traditional sectors.

Therefore, a renewed look into the dimensional model of interests is warranted to capture the evolution in the world of work over the past decades and to allow successful development and application of interest assessment in organizational research. Identifying an updated, more comprehensive set of interest dimensions is of particular importance given the emerging discussions of using interest measures as tools for targeted recruitment, selection, and other areas of human resource management (K. S. Jones, Newman, & Jung, 2013; Nye et al., 2012, 2017; Van Iddekinge, Putka, et al., 2011).

The primary goal of the current research is to establish an integrative dimensional model of interests. To achieve this goal, we conducted two studies. In Study 1, we reviewed all the interest inventories currently available and developed the comprehensive assessment of basic interests (CABIN) as a foundation for identifying fundamental interest dimensions. CABIN improves upon the limitations of existing measures that led to past discrepant findings (Guilford et al., 1954; Jackson, 1977; Kuder, 1977; Thurstone, 1931; Torr, 1953) by providing a set of interest scales that (a) are content-specific and homogenous, allowing for precise assessment of latent interest in an area; (b) cover the full range of interest domains and SOC occupations; (c) reflect contemporary work tasks and emerging sectors of economy; and (d) are short and easy to use in an organizational setting. In Study 2, we used CABIN to critically evaluate a proposed eight-dimension interest model, which we titled SETPOINT: Health *S*cience, Creative *E*xpression, *T*echnology, *P*eople, *O*rganization, *I*nfluence, *N*ature, and *T*hings. Using second-order confirmatory factor analysis (CFA) and exploratory structural equation modeling (ESEM), we compared SETPOINT to an alternative six-dimension model akin to Holland's RIASEC types that are widely used by the interest research community. We also examined the validity of SETPOINT for predicting occupational membership in three fast-growing sectors of work (healthcare, STEM, and green occupations) and three traditional sectors of work (education, manual/skilled trades, and office/administrative occupations). Our results demonstrate that, compared with the six-dimension model, SETPOINT displays superior fit to interest data and is a better predictor of occupational membership.

In the following sections, we first present a definition of interests and provide a brief overview of the levels of specificity at which interests are typically assessed, because much of the terminology is familiar within only the specialized interest measurement tradition and not the broader field of organizational research. Clarifying the issue of specificity of interest assessment is important for establishing the conceptual understanding of interest dimensions and the basic units of interests that constitute these dimensions. We then outline key considerations for building a model of fundamental interest dimensions based on the hierarchical organization of interests. We propose a set of potential interest dimensions based on theoretical reasoning and empirical evidence from previous studies before presenting our analytical approach and findings.

Definition and Measurement of Vocational Interests

Vocational interests are defined as "trait-like preferences to engage in activities, contexts in which activities occur, or outcomes associated with preferred activities that motivate goal-oriented behaviors and orient individuals toward certain environments" (Rounds & Su, 2014, p. 98; Rounds, 1995). These preferences are not characterized by simply the experience of enjoyment but are more strongly associated with prolonged attention to the objects of interest, a sense of curiosity, and persistent engagement in activities, even when they are complex or perplexing (Silvia, 2008; Turner & Silvia, 2006). As such, interests serve as a source of intrinsic motivation that drives the direction, effort, and persistence of human behaviors, knowledge acquisition, and performance on tasks (Su & Nye, 2017).

At the core of this definition of interests, and what distinguishes interests from other individual-difference variables, is the idea that interests are contextualized and are captured in the target objects (Rounds & Su, 2014). These objects are often used as stimuli in interest measures. A typical interest inventory will ask respondents how they feel about various work activities (e.g., "repair a car engine") or work settings (e.g., "serve on a corporate board"). For each item, respondents may indicate their degree of liking or disliking using a Likert-type scale or a forced-choice scale. Responses to the items are then scored into scales. Table 1 presents a summary of various types of scales commonly used in interest inventories, their levels of specificity, homogeneity, scoring methods, and respective examples. Two methods for scoring interest scales are commonly used: items are either empirically keyed into *occupational interest scales* by comparing a person's interest profile against that of prototypical individuals within an occupation or aggregated by taking the sum or mean across a set of items that are theorized to measure the same construct. An example occupational interest scale, Social Workers, would include all the items in an interest inventory that maximally differentiate responses from the general population and those from a representative sample of social workers.

When interest item scores are aggregated arithmetically, they can be organized into *basic interest scales* or *general interest scales.* Basic interest scales are theorized to be specific, homogeneous units of interests that group together work activities that share similar properties and represent the same abstract object, such as mathematics, finance, or teaching (Campbell, Borgen, Eastes, Johansson, & Peterson, 1968; Clark, 1961). An example basic interest scale, Teaching, may include items pertinent to a variety of pedagogical activities at different sectors of education that reflect the same underlying interest—providing others with instructions to facilitate learning and development.

General interest scales describe broad-band interest dimensions that are of theoretical significance. Unlike basic interest scales, which reflect specific, homogeneous units of interests, general interest scales represent broad areas of preferences comprising a heterogeneous set of work activities and work settings and are usually organized according to a conceptual model. These work activities and work settings are grouped together not because they represent exactly the same underlying interest construct but because they are similar enough to signify a general theme. It is common for an interest inventory to include more than one type of scale at different levels of specificity. For example, the Strong

Table 1
Comparison of Occupational Interest Scales, Basic Interest Scales, and General Interest Scales

	Interest items	Occupational interest scales	Basic interest scales	General interest scales
Description	A specific work activity or work setting for which individuals indicate their levels of like or dislike	Scales that measure the similarity between an individual's interest profile and the interest profile of typical individuals in an occupation	Content-specific, homogeneous scales that assess interests in the same classes of activities	Scales that assess broad themes of preferences (broad-band interest dimensions) that include a heterogeneous set of work activities or settings
Corresponding examples	Interact with students in a classroom setting; Counsel clients with personal problems	High School Teachers; Post-Secondary Education Teachers; Counselors; Social Workers	Teaching; Social Service	Social
	Direct the business affairs of a university; Analyze financial information	Public Administrator; Marketing Managers; Banker; Accountants	Management; Finance & Accounting	Business
Level of specificity	Most specific	Intermediate (configural)	Intermediate	Most general
Homogeneity among items	N/A	No	Yes	No
Scoring methods across items	N/A	Typically empirically keyed against incumbents within an occupation	Typically scored under the assumptions of classical test theory	Typically scored under the assumptions of classical test theory

Interest Inventory (Donnay, Morris, Schaubhut, & Thompson, 2005), one of the most widely used interest measures, includes 328 items that can be scored into 244 gender-specific occupational interest scales, 30 basic interest scales, or six general interest scales based on Holland's interest types (referred to as "general occupational themes"). The Social general interest scale includes items that represent interests in teaching, counseling, and other community/social services with a common theme of working with or helping people.

Key Considerations for Establishing a Dimensional Model of Interests

To establish a dimensional model of vocational interests, we were seeking *broad-band interest factors* conceptualized at the breadth of general interest scales. These dimensions should (a) cut across a heterogeneous set of work activities or occupations to reflect a similar interest theme and (b) be derived from a comprehensive and contemporary range of objects that represent interests in the full span of work activities and environments. It is crucial to establish a dimensional model with these criteria of breadth and comprehensiveness because it will provide a parsimonious yet inclusive classification scheme for understanding the organization of interests and will facilitate the communication and accumulation of research findings.

Two additional issues are relevant for the current discussion: First, what are the basic units of interests that should be used for deriving interest dimensions? Are they interest items (work activities), occupational interest scales, basic interest scales, or something entirely new? Second, how can a comprehensive set of basic units of interests be assembled such that they represent the full interest domain?

Basic Units of Interests

We ruled out using occupational interest scales for establishing the dimensional model because these scales are scored with the empirical-keying method against characteristic interest profiles of job incumbents. As such, they describe patterns of preferences for a heterogeneous set of objects rather than single, homogeneous units of interests. Therefore, occupational interest scale scores are essentially configural and are not suitable for serving as basic units of analysis for deriving interest dimensions.

Instead, basic interests, positioned one conceptual level lower than broad-band interest dimensions (see Table 1), would be the most appropriate unit of analysis for deriving the fundamental dimensional model. As discussed before, basic interest scales group homogeneous sets of work activities. These homogeneous scales assess the core *mental units* or *schemata* that individuals use for storing affective and cognitive appraisals of objects in their environments (Su, Stoll, & Rounds, in press). For example, when individuals respond to a series of interest items in a Mechanics basic interest scale, such as "calibrate the timepieces in a watch," "repair a car engine," and "reassemble computer parts," they resort to their mental representation of mechanics-related activities. They may or may not have had the experience of performing a particular mechanical activity described in an interest item, but they can respond according to a general impression about the relatively homogeneous class of mechanical activities and infer the extent to which they would like to perform any activity under that class. In this sense, basic interest scales reflect the latent mental representations of interests and interest items are indicators of these latent constructs. One could possibly identify hundreds of different indicators for an area of basic interest and replace the items on a basic interest scale such as Mechanics and still measure the interest in that object reliably. It is the nature of the particular object, or latent construct, that is associated with meanings for each individual, not items.

Evidence from emotion research (e.g., Silvia, 2001; Tomkins, 1987, 1991) and cognitive psychology, particularly in the area of impression formation (e.g., Brewer, 1988; Fiske, 1993; Smith & Zárate, 1992), both support the idea that interests are organized hierarchically with abstract mental representations (basic interest

scales) drawn from specific experiences (interest items). Smith and Zárate (1992), for example, have shown that humans refer to specific accounts of experiences ("exemplars") as well as abstract schematic knowledge to form perception and social judgment. Tomkins (1987, 1991), in his script theory, proposed that individuals experience scenes, which are basic emotional elements of life as they are lived, and connect one affect-laden scene with another to form scripts. These scripts are groups of scenes based on shared features that provide rules (or meanings) to guide future behaviors. Informed by these streams of research, interest researchers have analogized experiences and activities in interest items to cognitive exemplars or emotional scenes and basic interest scales to schemata or scripts (Silvia, 2001; Su et al., in press).

As abstract mental representations, basic interest scales are more stable over time and across situations than are interest items (Day & Rounds, 1997). Content of interest items (work activities or settings) in a particular basic interest scale may change over time with the evolution of the workplace and may be adapted to suit respondents' age or educational background. However, the cognitive schema and emotional script about that area of basic interest would stay relatively consistent. In summary, basic interests are sufficiently fine-grained for describing individuals' differential preferences for external objects and yet stable enough to transcend specific situations or task descriptions, making them ideal building blocks for developing fundamental dimensions of interests.

A Comprehensive Set of Basic Interest Scales

In an effort to identify a comprehensive set of basic interest scales as the foundation for the dimensional model, we inspected all the basic interest scales from interest inventories that are currently available commercially or for research purposes. Our review revealed two critical limitations of the existing measures that indicate these scales are insufficient for the purpose of establishing fundamental interest dimensions. First, none of the existing interest measures cover the full range of the world of work. For example, the Strong Interest Inventory (Donnay et al., 2005), one of the more comprehensive and widely validated assessments, includes a Programming and Information Systems basic interest scale that captures interest in the use of computers, data, and information technology, which corresponds to the occupational group of computer specialists in the SOC (BLS, 2010). Most other interest inventories do not have any basic interest scale that represents this area of interest. On the other hand, the Strong Interest Inventory does not include scales that measure basic interests in transportation, physical/manual labor, engineering, or personal service. Interest in humanities and foreign language is almost entirely missing from existing interest measures.

Second, existing basic interest scales vary in their levels of specificity—some are too heterogeneous to qualify as basic interest scales, and some are too specific. For example, the Jackson Vocational Interest Survey (JVIS; Jackson, 2000) has three content-specific basic interest scales related to science (Physical Science, Life Science, and Social Science). Each of these three scales represents a basic unit of interest and corresponds to one relatively homogeneous group of occupations in the SOC. In contrast, many other interest measures (e.g., Career Assessment Inventory [CAI]—Vocational edition; Johansson, 2003) include a much broader Science scale, which is in fact at the level of a general interest scale instead of a basic interest scale. Similarly, the Basic Interest Markers (BIM; Liao, Armstrong, & Rounds, 2008) includes an Outdoor-Agriculture basic interest scale, which represents a diverse set of activities and is at the conceptual level of a general interest scale. Scales like these are not uncommon in existing interest inventories and are too broad to represent basic mental schemata/scripts of interests. Thus, to establish fundamental interest dimensions, it is necessary to develop a new set of basic interest scales that meet the requirement of content-specificity and homogeneity and that represent the full range of occupations, including traditional and emerging areas of work.

Previous Factor Analytic Studies of Interests and A Proposed Dimensional Model

The search for the dimensional structure of interests began with L. L. Thurstone's (1931) factor analysis of E. K. Strong's (1927) occupational scales. Later studies (e.g., Cottle, 1950; Guilford et al., 1954; Torr, 1953) began to use a variety of interest inventories. It is important to note that Torr (1953) and Guilford et al. (1954) used content-specific basic interest scales as the unit of analysis instead of occupational scales in their studies. The last generation of factor analytic studies (e.g., Droege & Hawk, 1977; Jackson, 1977; Kuder, 1977; Rounds & Dawis, 1979), spurred on by the use of computers and changes in the workforce in the late 1970s, used an extended number of interest scales and included both female and male participants. In Figure 1, we map out findings from four landmark factor analytic studies (Guilford et al., 1954; Jackson, 1977; Thurstone, 1931; Torr, 1953) and highlight their overlap and differences. As shown in Figure 1, previous studies diverged on the range and specificity of fundamental interest dimensions that they identified.

One of the most consistent findings among early factor analytic studies of interests was a People dimension. This dimension reflects a general preference for working with and helping people and subsumes interests in areas such as education and social services. Thurstone (1931) found that this factor explained variability among scores in the occupational scales of Y.M.C.A. Secretary, Teaching, Personnel, and Ministry. Guilford et al. (1954) labeled it *Social Welfare,* and Jackson (1977) labeled it *Helping*. We expected to identify this dimension in our study.

An important departure of later studies from Thurstone (1931) was the identification of a Things dimension in addition to the People dimension. Thurstone's (1931) People interest factor was in fact a bipolar dimension that captured high interest in people-oriented activities and low interest in activities related to working with things and gadgets. Later studies uncovered separate factors for the two ends of this People−Things dimension, in part due to their use of homogeneous basic interest scales as the unit of analysis as opposed to occupational scales with heterogeneous interest items. Torr (1953) and Guilford et al. (1954) both identified a factor characterized by activities related to mechanical manipulation, construction, and design, labeled *Mechanics* and *Mechanical,* respectively. More recent research using confirmatory factor analysis (CFA) and clustering methods provided additional evidence for unique People and Things factors instead of a bipolar dimension (Tay, Su, & Rounds, 2011). Therefore, we expected to identify a Things dimension that captures interest in mechanical and hands-on activities.

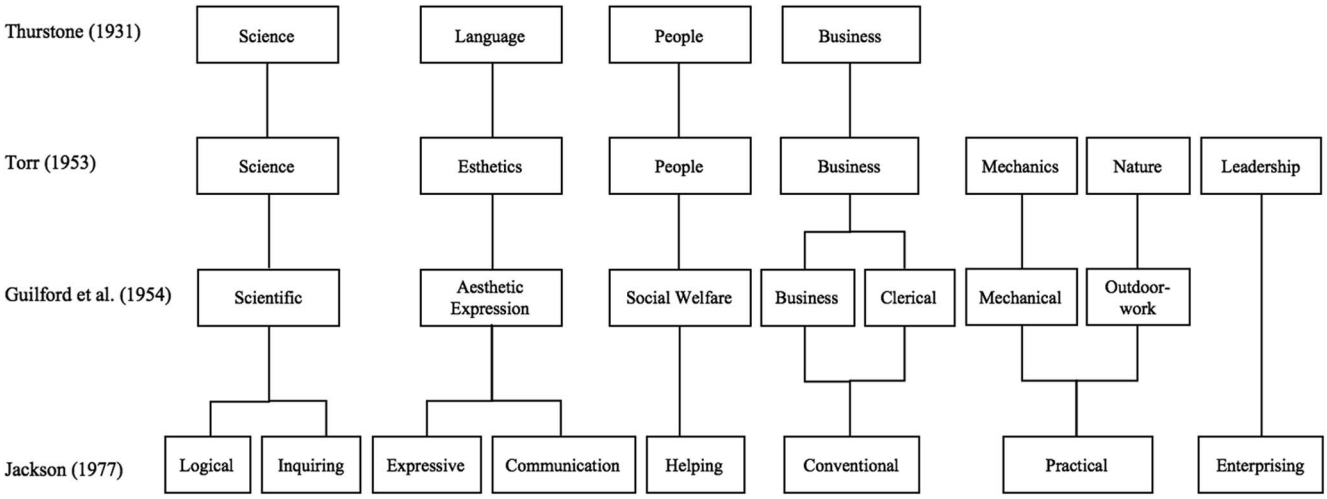

Figure 1. Convergent and divergent findings from previous factor analytic studies on fundamental dimensions of vocational interests.

Torr (1953) and Guilford et al. (1954) identified, in addition to the Things factor, a factor characterized by natural, agricultural, and outdoors activities and labeled it *Nature* and *Outdoor-work,* respectively. In more recent factor analytic studies, this Nature/Outdoor factor consistently emerged aside from the Mechanical/Technical factor (e.g., Droege & Hawk, 1977; Kuder, 1977; Rounds & Dawis, 1979), with the exception of Jackson's (1977) solution that subsumed the two into a broad factor, labeled *Practical*. One reason for this discrepancy was that, instead of using content-specific basic interest scales, Jackson's (1977) analysis started with a broad Skill Trades scale that included mechanics, construction, and manual labor activities and a broad Nature-Agriculture scale that included various agricultural and outdoors activities. Therefore, Jackson's solution was indeed a higher order factor of the two dimensions. We argue that interests in activities related to nature, agriculture, and outdoors are conceptually different from interests in things (mechanical or manual activities). Further, with the emergence of the green economy, the number of jobs in this area is expanding and the nature of work tasks in these jobs is shifting away from that in traditional industries such as mining and construction. Therefore, we expected to identify a Nature interest dimension separate from the Things dimension with the use of content-specific, homogeneous basic interest scales that sufficiently represent interests in both areas.

Another interest dimension that was consistently reported in prior factor analytic studies was Science. It represents interest in scientific research and intellectual activities in general. In Thurstone's (1931) study, the *Science* factor explained most of the variability among the scores of six occupational scales: Chemistry, Engineering, Architecture, Psychology, Medicine, and Farming. This factor was replicated in the other three studies and virtually all subsequent factor analytic investigations. Jackson (1977) reported two factors related to science, labeled *Logical* and *Inquiring,* respectively. The former explained basic interests in physical science, engineering, and mathematics; the latter explained basic interests in life science, medical service, and social science. This discrepancy was in part due to Jackson's inclusion of a range of content-specific basic interest scales related to science instead of one broad science scale. In this study, we expected to identify a new Technology dimension that captures basic interests in physical science, mathematics, engineering, and information technology and a new Health Science dimension that subsumes basic interests in life science, medical science, and medical service, mirroring the fast growth of the STEM and healthcare sectors (BLS, 2017, 2018).

We conceptualized the Technology and Health Science dimensions as much broader than merely two branches that split from the Science factor identified in previous factor analyses. The Technology dimension incorporates interest in science with interest in engineering, which is traditionally placed under the Things factor by existing interest models (e.g., Realistic in the Holland model), as well as interest in data and computation, traditionally placed under the Clerical factor by existing interest models (Conventional in the Holland model; Donnay et al., 2005). We argue that this division of science, engineering, and data is no longer valid in the current world of work. With the rise of the information age and new grand challenges faced by the human society, such as landing on Mars, producing sustainable resources, and building predictive models of natural phenomena, increasing collaborations among physical sciences, engineering, mathematics, and information technology (IT) is required. The Technology dimension reflects shifts of interests in these areas from narrowly focused science, engineering, or IT professions to broad occupational groups with shared goals and work tasks of innovation and problem-solving. Similarly, the Health Science dimension subsumes interests in biological and medical sciences and interests in healthcare practice and support, which is traditionally placed under the People factor by existing interest models (Social in the Holland model; Donnay et al., 2005). With the rising importance of health care in today's society and the great challenges facing medicine and health, such as curing cancer, tackling degenerative neurocognitive disorders at older age, and understanding and even editing the human genome, life sciences and medical services are integrated more than ever. The Health Science dimension reflects shifts of interests in these areas.

Additionally, we expected to identify a broad-band interest dimension involving Creative Expression, including various forms of the arts, literature, writing, and mass communication. Thurstone (1931)

labeled this dimension *Language,* because it explained variability among scores in Journalism, Law, Art, and Advertising occupational scales. A similar dimension, labeled *Esthetics* and *Aesthetic Expression,* respectively, was reported by Torr (1953) and Guilford et al. (1954). Jackson (1977) identified two factors at more specific levels, despite using similar basic interest scales as other studies: One was labeled *Expressive* and explained basic interests in creative arts and performing arts, and the other was labeled *Communication* and explained basic interests in author-journalism and technical writing. We argue that both factors reflect interest in the expression of creative ideas in nonstructured environments and both factors are associated with the outcome of creating aesthetically pleasing or functional products. They reflect the same underlying interest despite different channels through which individuals express their creativity.

The most discrepant findings from previous factor analytic studies were regarding how many and what dimensions represent business activities and activities of leading, persuading, and influencing people. Thurstone's (1931) analysis of 18 occupational scales led to one *Business* factor. Torr (1953) and Jackson (1977) replicated this finding. Jackson reported a factor that captures basic interests in business, sales, finance, office work, and supervision, labeled *Conventional*. Cottle (1950), instead, identified two interest factors associated with business activities: *Business Contact,* which describes interest in activities related to the generation of business profits, and *Business Detail,* which describes a preference for activities of a routine, concrete nature in office work requiring quantitative judgment. Similarly, Guilford et al. (1954) reported two factors labeled *Business* and *Clerical,* respectively. These factors became forerunners of Holland's (1959) *Enterprising* and *Conventional* vocational personality types. We argue that Business Detail or Clerical is conceptualized too narrowly to be a broad-band interest dimension. Clerical or office work represents one aspect of organizational activities that occur in a structured business environment. It reflects an underlying interest in planning, organizing, tracking and processing information, and computing, which are shared elements among many business activities, including finance, accounting, and human resource management. Therefore, we expected to identify a broad Organization dimension that captures this area of interest.

In addition, Torr (1953) reported a *Leadership* factor separate from the *Business* factor that explained interests in entrepreneurship and leading, persuading, and influencing people. This dimension was replicated by Jackson (1977) (labeled as *Enterprising*) and was described as "the practical arts of day-to-day interaction with people in a context in which persuasive motives predominate" (p. 78). A similar dimension has also emerged in newer factor analytic studies that used interest items as the unit of analysis, including Kuder's (1977) Influencing People−Social Approval; Droege and Hawk's (1977) Leading-Influencing; Rounds and Dawis's (1979) Meeting and Directing People; and most recently, Pozzebon, Visser, Ashton, Lee, and Goldberg's (2010) Leadership. This dimension is conceptually different from organizational activities with the goal of generating business revenue. It captures interests in influencing other people both in the business domain and in the political and legal domains and extends to persuasive and gregarious social activities in general as shown in Torr's study. We expected to identify an Influence dimension that represents interests in this area in our study. Table 2 presents a summary of the eight proposed dimensions (collectively referred to as the SETPOINT model: Health *S*cience, Creative *E*xpression, *T*echnology, *P*eople, *O*rganization, *I*nfluence, *N*ature, and *T*hings).

Analytical Methods for Testing a Dimensional Model of Interests

Finally, we considered what the most appropriate analytical methods are for deriving and testing a dimensional model of interests. Traditionally, research on interest structure has focused on testing the hexagonal configuration of the RIASEC model and the spatial constraints implied by this model (e.g., the Investigative type should be adjacent to the Realistic type in a two-dimensional space, followed by the Artistic type, and so on). Multidimensional scaling (MDS) was frequently used in these endeavors to describe the spatial configuration of interests based on relative sizes of intercorrelations among interest item scores or RIASEC scale scores. Although this research has in general supported the circumplex structure (Day & Rounds, 1998; Rounds & Tracey, 1993), MDS is descriptive in nature and is insufficient for testing the dimensionality of interests. Recent research has disconfirmed many constraints of the model, such as negative correlations between "opposite" types on the hexagon (e.g., Realistic and Social; Tay et al., 2011). Past factor analytic studies of interests, as

Table 2
Proposed Interest Dimensions in the SETPOINT Model

Interest dimension (D)	Description
D1. Health Science	Captures a general interest in activities related to life and medical sciences and the application of science to health care
D2. Creative Expression	Captures a general interest in activities involving the expression of imaginative and creative ideas in a variety of forms for the sake of art itself or for practical considerations
D3. Technology	Captures a general interest in activities involving problem-solving, innovation, and creation of new knowledge and technology
D4. People	Captures a general interest in activities involving working with people, helping people, and understanding human behaviors and the human society
D5. Organization	Captures a general interest in activities that occur in structured business environments involving planning, organizing, tracking and processing information, and computing
D6. Influence	Captures a general interest in leading, persuading, and influencing other people in business, political, legal, and social domains
D7. Nature	Captures a general interest in activities involving agriculture, outdoors, and nature (plants and animals)
D8. Things	Captures a general interest in mechanical, hands-on, and physical activities

Note. SETPOINT = Health *S*cience, Creative *E*xpression, *T*echnology, *P*eople, *O*rganization, *I*nfluence, *N*ature, and *T*hings.

previously reviewed, mostly used exploratory methods. CFA has had limited applications in interest research and, when conducted, has generally yielded poor model fit (e.g., Boyle & Fabris, 1992; L. L. Jones, 2001; Warlick, Ingram, Ternes, & Krieshok, 2017). Similarly, inadequate model fit has been reported in the personality literature when CFA was used to evaluate structural validity (see Hopwood & Donnellan, 2010, for a review). These findings are, in part, due to the inherent complexity of broad-band interest/personality dimensions and the restrictive assumption of CFA that each latent factor needs to be highly unidimensional. In view of this limitation, some researchers have questioned the appropriateness of CFA for testing comprehensive models of personality structure and argued in favor of the continuing use of exploratory methods (Church & Burke, 1994).

We argue that CFA can be useful in the study of interest structure and can contribute to theory building as the field moves toward a dimensional model of interests. For it to be useful, model specification needs to correctly reflect the organization of interests. We propose that interest structure is best represented using a hierarchical model, with interest items at the bottom as indicators of content-specific, homogeneous basic interest factors at the intermediate level, and broad-band interest dimensions at the top as correlated higher order factors. An illustrative example of this hierarchical model is depicted in Figure 2, with three broad-band interest dimensions, each composed of three basic interest constructs, which are then each measured by four interest items. The most appropriate analytical method for testing this model would be a second-order CFA (see Judge, Erez, Bono, & Thoresen, 2002, for an application of second-order factor analysis in organizational research).

One drawback of using CFA in evaluating interest structure is that it imposes a simple, unidimensional structure with each indicator allowed to load on only one latent factor, termed the *independent clusters model* (Asparouhov & Muthén, 2009; Marsh et al., 2009). However, secondary loadings are common in the interest and personality domains, and the impact of secondary loadings on model fit has been frequently discussed (Church & Burke, 1994; Guilford et al., 1954; Hopwood & Donnellan, 2010; Torr, 1953). Some basic interest scales may load on multiple broad-band interest dimensions, contributing to misfit of CFA models. For example, Athletics, a scale assessing basic interest in sports, has traditionally been classified under the Realistic/Things interest theme because it involves physical activities and requires working with one's hands or body. However, many athletic activities also embody a competitive spirit. Part of athletic activities, coaching, involves directing and influencing people. Therefore, Athletics may have a secondary loading on the Influence dimension. Other basic interest scales, such as Protective Service, Mathematics, and Information Technology, likely also have secondary loadings due to their multifaceted nature. Omitting secondary loadings like these and imposing zero nontarget cross-loadings may distort the factor structure, resulting in biased and inflated factor correlations among the latent factors and poorer model−data fit (Marsh et al., 2009). Recent development in ESEM (Asparouhov & Muthén, 2009; Marsh et al., 2009, 2010) provides an integration of confirmatory and exploratory approaches, making it viable for researchers to specify underlying factor structures while allowing secondary loadings to be freely estimated. In view of these advantages, researchers have proposed ESEM as a promising alternative in the investigations of complex dimensional structures (e.g., Hopwood & Donnellan, 2010). In this research, we conduct ESEM analyses to corroborate results from second-order CFA and to provide additional insights into the complexity of interest dimensions.

Study 1

To map out the full interest domain and develop a comprehensive set of content-specific basic interest scales, we reviewed all the interest inventories currently available and created a crosswalk of existing basic interest scales in these measures (see Table S1 in the

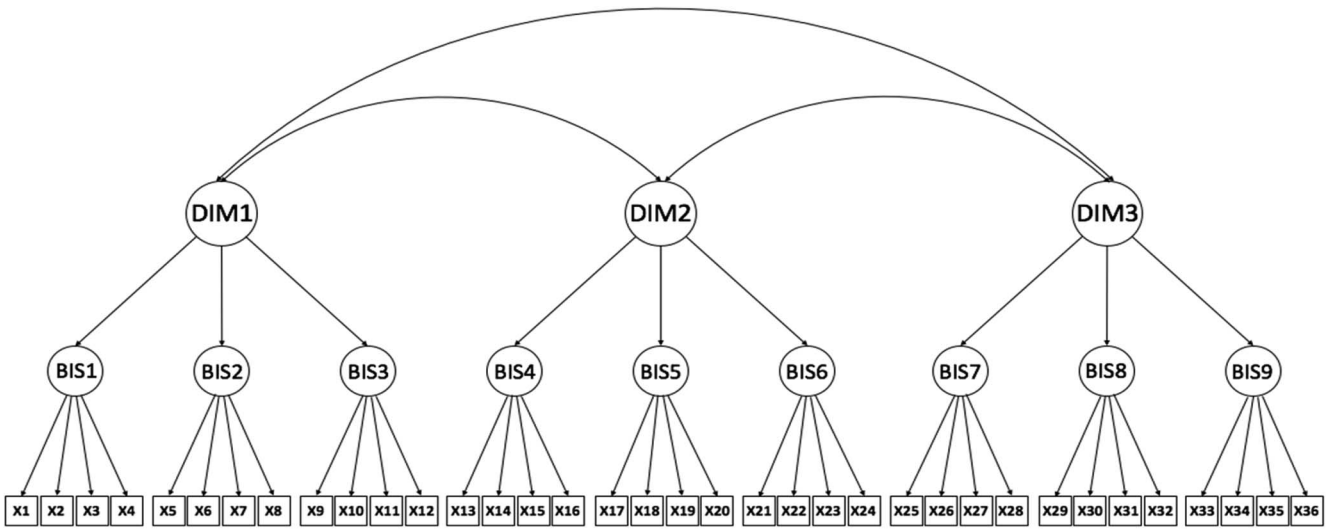

Figure 2. An illustrative example of hierarchical (second-order) model of interests. For the sake of clarity, residuals are not depicted in the figure. X denotes interest items; BIS denotes basic interest scales; DIM denotes broad-band interest dimensions.

online supplementary materials; Glutting & Wilkinson, 2003). In addition, we crosswalked all the basic interest scales with 23 major and 97 minor occupational groups from the SOC (BLS, 2010) to demonstrate the range of these scales and the correspondence between basic units of interests and the world of work. Three authors with extensive experience in interest measurement and occupational classification thoroughly examined all the items in each existing basic interest scale to determine whether they covered an area of interest with homogeneous work tasks or they needed to be split into more specific units. For example, the JVIS (Jackson, 2000) included a basic interest scale called Skilled Trades that combined several specific areas of interests in mechanics/electronics, construction/woodwork, and physical/manual labor. Each of these areas corresponds to a homogeneous set of occupations in the SOC: installation, maintenance, and repair occupations; construction and extraction occupations as well as wood, metal, and plastic workers; and material moving and production workers (see Table S1 in the online supplemental materials). Next, the authors reviewed existing scales that covered only one or two occupations rather than a group of occupations with shared underlying interest (e.g., the Carpentry scale in the CAI−Vocational edition; Johansson, 2003). These scales needed to be integrated with others to form an area of basic interest. Last, work sectors in the SOC that were not represented by existing basic interest scales were identified. For example, occupations related to the humanities and foreign languages were not covered by any of the existing basic interest scales, with the possible exception of an International Activities scale in the CISS (Campbell et al., 1992), which is limited in scope. Therefore, a new basic interest scale was needed to reflect this area of interest. Disagreements about these decisions were resolved by discussions among the authors. As a result, we determined a list of 40 basic interests as the basis for developing the new interest assessment,[1] each of which corresponds to a homogeneous group of occupations in the SOC (see Table S1 in the online supplemental materials).

A team of subject matter experts on interest assessment, led by the first author, developed items for the new set of basic interest scales. Items were written with the following guidelines:

1. Each basic interest scale should be content-specific and unidimensional.

2. Items should be representative of the occupations and work tasks covered by each scale. This criterion ensures that, at the item level, the new interest assessment covers the full range of the world of work. To achieve this goal, we thoroughly reviewed the SOC system (BLS, 2010), including 23 major groups, 97 minor groups, and 840 detailed occupations. We extracted information about work tasks for all the occupations from the Occupational Information Network database (O*NET; National Center for O*NET Development, 2016) to develop the items. For example, the Physical Science basic interest scale includes items that represent work tasks for every occupation in the SOC minor occupational group of 19–2000—Physical Scientists (astronomers and physicists, atmospheric and space scientists, chemists and materials scientists, and environmental scientists and geoscientists).

3. Items should be free of specialized terms and should be understandable to the general population.

4. Items should be written with gender-neutral language.

The initial item development led to eight items for each of the 40 basic interest scales, with 320 items in total. Next, all the items were reviewed by an independent panel of seven I-O psychologists and doctoral-level students to evaluate the readability of the items, the appropriateness of the items for assessing corresponding basic interest constructs, and the extent to which the items tapped into other constructs irrelevant to the targeted basic interests. Items were then revised or replaced based on the input of this panel. We administered the newly developed interest items to one sample of college students and one sample of working adults to evaluate the psychometric properties of the assessment and selected items for the final assessment.

Participants

Sample 1A included 447 college students from a midwestern university.[2] Only individuals 18 years and older were recruited to participate. Participants received course credit for completing the interest assessment and reporting basic demographic information. Five attention check questions were embedded in the survey. Only responses from participants who passed all five questions ("careful respondents") were included in the analysis. Mean age of the sample was 18.93 (SD = 1.27). Approximately two thirds of the sample were female (65.77%); 74.84% were White, 18.12% were Asian or Pacific Islanders, 2.68% were Black, and 3.13% identified as bi/multiracial or others. Among these, 4.03% of the participants reported being ethnically Latino/a. This sample represented students from 10 different colleges and 97 majors at the university and from diverse socioeconomic backgrounds, with annual household income ranging from less than $10,000 to above $150,000.

Sample 1B included 178 working adults ("careful respondents") recruited from Amazon Mechanical Turk. Screening criteria were set in the recruitment such that participants resided in the United States and had 95% or better acceptance rate in previous tasks. Participants ranged in age from 22 to 72 (M = 39.57, SD = 11.85). Approximately half of the sample were female (51.12%); 82.58% were White, 7.30% were Asian or Pacific Islanders, 6.18% were Black, and 3.93% were bi/multiracial or others. Among these, 6.18% reported being ethnically Latino/a. The majority of the participants had earned college degrees (46.63%) or graduate/professional degrees (7.87%) or had completed some graduate work (3.37%); 24.16% of the participants had completed some

[1] Two scales from existing interest inventories (Family Activity and Adventure/Risk-taking) were excluded from the current research because they are not measures of vocational interests. Family Activity scales assess interest in the nonwork domain. Adventure/Risk-taking scales often assess interest in a variety of avocational activities. We argue that a high score on this scale reflects a personality tendency, rather than vocational interests. Indeed, Risk Taking is included in the Strong Interest Inventory (Donnay, Morris, Schaubhut, & Thompson, 2005) as a personal style scale rather than an interest scale.

[2] Inclusion of human subjects in this article (Samples 1A and 1B in Study 1 and Sample 2 in Study 2) followed American Psychological Association (2017) ethical standards and were approved by the Purdue University Institutional Review Board (Protocol No. 1603017325; study title: "Finding the Fundamental Dimensions of Interests: A Factor Analytic Study").

college education, 10.11% had a high school diploma, and 7.87% had vocational or trade school degrees. This sample included working adults from a broad range of occupations that represented 21 out of 23 SOC major groups, including office and administrative support occupations, computer and mathematical occupations, and sales and related occupations. On average, participants had been in the workforce for 18.24 years ($SD = 11.06$) and had 8.58 years of work experience in their current occupations ($SD = 7.81$). This sample was representative of individuals with a diverse range of annual household income, from less than $25,000 to above $150,000, with the median income around $50,000.

Analyses and Results

We evaluated the new interest items using a sequence of criteria: (a) substantial item loadings on respective scales for each sample ($\lambda \geq .70$), (b) item mean and variance for each sample, by gender and combined, (c) mean effect size of gender difference for each item, and (d) item readability level using the Flesch-Kincaid grade-level formula (Kincaid, Fishburne, Rogers, & Chissom, 1975). A summary of the results for all the new items is presented in Table S2 in the online supplementary materials. We selected four items per scale to minimize scale length and facilitate their use in organizational settings while retaining enough items for each scale to evaluate model fit (because three items per scale would result in model saturation). The first and foremost guideline for developing the new basic interest scales was that each scale needed to be content-specific and unidimensional. Therefore, we conducted CFA on each scale to screen out items without substantial factor loadings on a corresponding scale. Approximately 80% of the initial items (254 out of 320) were excellent indicators of their respective basic interest scales, with loadings above .70 in both samples (range = .704−.985). Next, we inspected item mean and variance to eliminate items with relatively high or low endorsement rates and relatively small variances, which indicated that they were too desirable or undesirable for most participants. When possible, we selected items that showed relatively small gender differences, with the goal of minimizing potential adverse impact of the assessment. Last, among the remaining items within each scale that met the aforementioned standards of psychometric properties, we selected four items that were the shortest and most readable to minimize cognitive load for respondents. The selected items had an average readability score of 8.57, indicating that the new items were easily understood by individuals in or above the eighth-grade reading level (Kincaid et al., 1975). This is comparable with the readability level of existing interest measures.

Two scales required further item development based on the analyses in Study 1. In the Life Science scale, two items that represented important areas of work for life scientists ("study the behaviors and social structure of an animal species" and "identify and classify plant specifies") did not meet the standard for factor loadings. Two additional items (marked with asterisks in Table S2 in the online supplementary materials) were written to replace these items in Study 2. In the Performing Arts scale, items capturing interest in music did not load highly, indicating that basic interest in music might be separate from basic interest in acting and performing. Two additional items (marked with asterisks in Table S2 in the online supplementary materials) were written to develop a Music scale that was administered in Study 2. In total, 164 items were selected to form the new comprehensive assessment of basic interests (CABIN), with four items per scale for 41 scales (the final assessment is presented in the Appendix).

Study 2

In this study, we administered CABIN to a large sample of working adults ($N = 1,464$) to validate the new measure and to establish the dimensional structure of interests. We compared the proposed eight-dimension model (see Table 2) to an alternative six-dimension model akin to Holland's RIASEC types. For the six-dimension model, we referred to the Strong Interest Inventory (Donnay et al., 2005), one of the most validated and commonly used interest measures, to specify the relationships between CABIN scales and six higher order factors. We used the crosswalk in Table S1 in the online supplementary materials to match our basic interest scales with those in the Strong Interest Inventory and classified matched scales into RIASEC dimensions according to the Strong Interest Inventory technical manual (Donnay et al., 2005; pp. 52–65). For new scales developed in Study 1 that were not included in the Strong, we specified the higher-order dimensions to which they belonged based on Holland's (1997) definition of the RIASEC types. For example, Life Science was specified to load on the Investigative dimension because it primarily involves activities related to scientific research; Engineering was specified to load on the higher order dimension of Realistic because it mainly involves working with things and is usually highly correlated with mechanics, another facet of the Realistic type.

Participants

Sample 2 included 1,464 working adults recruited through Qualtrics panels. We set recruitment criteria with the objective that the sample would be representative of all the occupational groups in the U.S. workforce. Participants were at least 18 years of age and had been employed in their current jobs for at least six months. Participants responded to 164 interest items constituting 41 basic interest scales as well as demographic questions and questions about their work. Participants ranged in age from 18 to 80 ($M = 43.47$, $SD = 13.36$). Approximately half of the sample were female (51.16%). The majority (86.27%) were White, 6.83% were Black, 4.64% were Asian or Pacific Islanders, .82% were Native American or Alaska Native, and 1.43% identified as bi/multiracial or others. Among them, 7.45% reported being ethnically Latino/a. The majority of the participants had earned college degrees (38.18%) or graduate/professional degrees (18.51%) or had completed some graduate work (4.51%); 19.19% of the participants had completed some college education, 12.98% had high school diplomas, and 5.94% had completed vocational or trade school degrees. This sample included working adults from a broad range of occupations that represented all 23 of the SOC major groups (BLS, 2010), including management and administration; office and administrative support; and education, training, and library occupations. On average, participants had been in the workforce for 23.49 years ($SD = 13.89$), in their current occupations for 12.06 years ($SD = 10.19$), and with their current organization for 9.00 years ($SD = 8.28$). This sample was representative of individuals with a diverse range of annual household income, from less than $10,000 to above $150,000, with the median income between $60,000 and $69,999.

Analyses

Before examining the hierarchical, dimensional structure of interests, we first conducted a CFA with only the lower order basic interest factors (baseline model) to evaluate the structural validity of CABIN and ensure that the 41 basic interest scales performed well in the new sample. We specified the 164 interest items as manifest variables and 41 basic interest constructs as latent factors. The basic interest factors were allowed to correlate with each other. No correlated residuals were specified in the model.

Next, a second-order CFA model as illustrated in Figure 2 was fitted to evaluate the competing dimensional models of interests. We specified each model with 164 items as manifest variables, 41 basic interest constructs as first-order factors, and eight or six broad-band interest dimensions as second-order factors. The broad-band interest dimensions were allowed to correlate with each other. No correlated residuals were specified. We expected the eight-dimension model to fit better than the six-dimension model. All the CFA analyses were conducted using *lavaan* (Rosseel, 2012) in R Version 3.4.3 (R Development Core Team, 2017).

In addition, we conducted ESEM analyses to further evaluate the two alternative models. Broad-band dimensions in both models and lower order basic interests within each dimension were specified the same as for the CFA models. In ESEM, cross-loadings were allowed on interest dimensions other than the primary dimension specified. Due to the computational intensity of ESEM, we used basic interest scale scores as the unit of analysis instead of using interest items as indicators and examined the factor structure between basic interest constructs and broad-band interest dimensions. Again, we expected better fit for the eight-dimension model. All the ESEM analyses were conducted using Mplus Version 7.0 (Muthén & Muthén, 1998–2016).

Last, we investigated the validity of the eight-dimension model, compared to the six-dimension model, for predicting occupational membership of job incumbents in three fast-growing fields (healthcare, STEM, and the green sector) and three traditional fields (education, manual and skilled trades, and office and administrative support) using logistic regression. These three traditional sectors were chosen as comparison because they were well represented in our sample and reflected a diverse set of work activities with underlying interests in People, Things, and Organization, respectively. All the participants in Sample 2 reported specific job titles in addition to their occupational groups. Two authors independently reviewed all the job titles and developed binary codes for participants' occupational membership based on the SOC system (BLS, 2010). For each logistic regression model, individuals who were in the occupational group (e.g., healthcare) were coded as 1, and individuals who were not in the group were coded as 0. Disagreements were resolved through discussion. Coding specific job titles was necessary because some participants performed occupational functions different from the industry in which they reported working. For example, one participant identified as a phone receptionist in the healthcare practitioners, technicians, and support occupational group and was excluded from the healthcare profession (coded as 0 for the healthcare binary variable); another participant identified as an environmental health and safety manager in the construction and extraction occupational group and was included in the green profession (coded as 1) as opposed to the manual and skilled trades profession (coded as 0). Fifty participants did not provide answers to the job title question that could be meaningfully classified (e.g., some participants wrote "rather not say" or typed a random stream of letters). These answers were coded as NA (*not applicable*), and these 50 participants were excluded from logistic regression analyses (thus, final $N = 1{,}414$). We expected the eight-dimension model to outperform the six-dimension model in predicting occupational membership of the participants. Logistic regressions were estimated using R Version 3.4.3 (R Development Core Team, 2017) and Le and Marcus's (2012) SAS macro.

Model Fit Indices

To evaluate model fit for CFA and ESEM, we used the comparative fit index (CFI), Tucker−Lewis index (TLI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). Hu and Bentler (1998) have shown that these fit indices are fairly robust across methods of estimation and violation of normality. Values greater than .95 and .90 for CFI and TLI, RMSEA values of less than .05 and .08, and SRMR values less than .05 and .08 have been suggested as evidence of excellent and acceptable model fit, respectively (Browne & Cudeck, 1993; Hu & Bentler, 1999). Differences in CFI of .002 or greater have been suggested as evidence of practical differences between models (Meade, Johnson, & Braddy, 2008). In addition, we report the Akaike information criteria (AIC) and Bayes information criteria (BIC). These indices have the advantage that they not only consider how well a model fits the data but also reward more parsimonious models. AIC and BIC allow comparison of nonnested models with the same variables, and smaller values of AIC and BIC indicate better fit to the data.

For logistic regressions, we report McFadden's R^2 for each model. McFadden's R^2 is a type of pseudo R^2 that represents the improvement from the null model to a fitted model. It ranges from 0 to 1, with higher values indicating better model fit and more accurate prediction of the binary outcome. Values of pseudo R^2 are typically smaller than are the percentages of variance accounted for from linear regressions. Values from .20 to .40 have been suggested as equivalent to R^2 range of .70 to .90 for a linear function and as indicators of excellent model fit (Louviere, Hensher, & Swait, 2000; McFadden, 1974). We also report adjusted McFadden's R^2, which penalizes complex models with more predictors. A higher value of adjusted McFadden's R^2 for the eight-dimension model than the six-dimension model would indicate that our proposed model has greater predictive validity even discounting its advantage of having two more dimensions. In addition, we report overall odds ratio (OOR; Allen & Le, 2008; Le & Marcus, 2012) for each model as an intuitive overall effect size. OOR represents the odds ratio of the binary outcome belonging to a category versus not (e.g., STEM vs. non-STEM professional) when the weighted linear combination of predictors increases 1 *SD*. An OOR value of 1 indicates that a model has no effect on the criterion. Greater OOR values indicate stronger predictive power for a model.

Results

A summary of descriptive statistics (means and standard deviations) for the 41 new basic interest scales and their intercorrela-

tions are reported in Table 3. The goodness-of-fit indices for the baseline model, the proposed eight-dimension model, and the alternative six-dimension model from CFA and ESEM are presented in Table 4. The baseline model fitted well to the data. All the items had high loadings on corresponding basic interest factors (range = .75−.95). Reliabilities were high for all the scales (αs = .90−.97). These results indicate that CABIN has good structural validity and the items are excellent indicators of the basic interest constructs. Given the comprehensive range of basic interests from our crosswalk, these findings imply that the current selection of constructs represents a good first-order collection for testing second-order broad-band interest dimensions.

Table 4 shows that the eight-dimension model fits the data better than does the six-dimension model, although both had adequate fit. Given the specification of the two models being nonnested, we could not test for their statistical difference. However, according to the standard of CFI change (.002), there was a practical difference between the two models. AIC and BIC also indicated that the proposed model fitted the data better and was statistically more parsimonious than was the alternative model. ESEM analyses provided stronger support for the proposed model. When secondary loadings were allowed for basic interest constructs to load on other interest dimensions beyond the specified primary dimension, the proposed model showed excellent fit to the data, whereas the alternative model showed inadequate fit. Factor loadings from second-order CFA for the two models are presented in Tables 5 and 6, and loadings from ESEM for the two models are presented in Tables 7 and 8. Overall, these findings support the structural validity of the SETPOINT model of interests.

We are particularly interested in the validity of the new model for predicting occupational membership. Table 9 summarizes the results from logistic regression analyses. McFadden's R^2 showed that the SETPOINT model had excellent or close-to-excellent fit for all six prediction models. Both McFadden's R^2 and the OOR showed that the SETPOINT model was superior at predicting occupational membership across the board, particularly for the three fast-growing work sectors.

Specifically, interest in Health Science was the strongest predictor of occupational membership in healthcare ($b = 1.67$, $p < .001$), meaning that an individual who scored 1 point higher on the Health Science dimension was 5.31 times more likely to be a healthcare professional. Lower interest in the Influence dimension was also predictive of being a healthcare professional. Occupational membership in STEM was predicted by interest in Technology ($b = 1.90$, $p < .001$). An individual who scored 1 point higher on the Technology dimension was 6.69 times more likely to be a STEM professional. Interest in the nature dimension strongly predicted occupational membership in green occupations ($b = 1.86$, $p < .001$), with a 1-point increase on the dimension translating to 6.42 times the likelihood to be in a green occupation. In comparison, occupational membership in education, manual and skilled trades, and office and administrative jobs was marked by higher interest in People ($b = 1.28$, $p < .001$), Things ($b = .80$, $p < .001$), and Organization ($b = .76$, $p < .001$), respectively. Comparing the logistic regression results for the two models, the eight-dimension model offers much more straightforward solutions for explaining and predicting occupational membership. As previously discussed, interests in healthcare, STEM, and green occupations are not well represented by extant interest models, because most were developed before the 1980s and do not fully reflect today's world of work. As a result, occupational membership in healthcare and STEM fields could be understood only by using a combination of multiple interest dimensions from the six-dimension model. Occupational membership in the green sector could only be predicted negatively by Conventional interests in the six-dimension model. For the three traditional work sectors, the SETPOINT model also provides a clearer correspondence between interest dimensions and occupational membership compared to the six-dimension model.

General Discussion

Interest research has enjoyed a long history dating back to the dawn of the 20th century, and interest inventories have been widely used for guiding individuals' career choices. Nonetheless, the changing nature of work and growing needs for using interest assessment in organizational research necessitates an updated understanding and a clear consensus about the fundamental dimensions of interests. The current article contributes to the literature in several ways: First, we have established that interests are structured hierarchically, with preferences for specific activities at the lowest level, basic interests at the intermediate level representing core mental schemata that individuals use to classify activities, and broad-band interest dimensions at the top describing overall tendencies of an individual to be drawn to or motivated by general types of environments. We clarified the confusion in the literature about analytical methods for evaluating interest structure and demonstrated that interests are best represented using a higher order CFA model or an ESEM model. Second, we have highlighted the need for building broad-band interest dimensions from a comprehensive set of content-specific, homogeneous basic interest constructs that fully reflect the world of work. The new basic interest measure, CABIN, provides a foundation for deriving broad-band interest dimensions and a great stand-alone assessment for organizational researchers and practitioners to use. Third, we have demonstrated that the proposed SETPOINT model best represents the interest domain of the 21st-century labor force and is effective at predicting occupational membership, particularly in three fast-growing sectors (healthcare, STEM, and green occupations). Next we discuss the meanings of and theoretical implications from the identified interest dimensions, potential applications of the new dimensional model of interests and basic interest assessment in the organizational setting, and methodological considerations in the investigation and evaluation of interest structure.

Contextualization of Vocational Interests

Interests are contextualized and describe individuals' affective reactions to and cognitive appraisals of objects and activities in external environments (Rounds & Su, 2014; Su et al., in press). Contextualization sets vocational interests apart from other individual difference variables such as personality traits. This unique property of interests motivated the current research and is further implied from the findings. The SETPOINT model of interests reflects the changes in the world of work. Compared to existing interest models, such as Holland's RIASEC types, it better captures interests in emerging industries and occupations, evolving nature of jobs and work tasks, and expanding job requirements. To

Table 3
Means, Standard Deviations, and Intercorrelations for the Comprehensive Assessment of Basic Interests (CABIN)

Basic interest scales	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1. Mechanics/ Electronics	2.41	1.29	.95																																								
2. Construction/ Woodwork	3.10	1.29	.57	.94																																							
3. Transportation/ Machine Operation	2.49	1.23	.61	.46	.90																																						
4. Physical/Manual Labor	2.24	1.19	.56	.45	.59	.95																																					
5. Protective Service	3.02	1.35	.37	.33	.39	.38	.94																																				
6. Agriculture	3.01	1.24	.51	.57	.45	.45	.30	.92																																			
7. Nature/Outdoors	3.59	1.13	.42	.55	.42	.37	.27	.70	.91																																		
8. Animal Service	3.65	1.20	.25	.32	.24	.25	.31	.42	.51	.92																																	
9. Athletics	3.26	1.28	.42	.37	.40	.36	.36	.33	.35	.22	.93																																
10. Engineering	2.93	1.29	.65	.57	.53	.48	.38	.55	.51	.32	.45	.95																															
11. Physical Science	3.25	1.31	.47	.43	.39	.31	.27	.54	.53	.35	.34	.58	.94																														
12. Life Science	3.03	1.23	.45	.43	.32	.32	.33	.58	.51	.45	.35	.55	.68	.93																													
13. Medical Science	3.31	1.30	.35	.32	.25	.27	.36	.44	.37	.34	.33	.48	.52	.66	.97																												
14. Social Science	3.37	1.16	.28	.29	.24	.21	.24	.40	.33	.27	.30	.39	.42	.50	.48	.93																											
15. Humanities & Foreign Languages	3.33	1.20	.39	.37	.32	.24	.23	.48	.45	.28	.32	.48	.59	.58	.48	.62	.92																										
16. Mathematics/ Statistics	2.93	1.35	.46	.35	.35	.33	.23	.36	.27	.10	.39	.48	.46	.42	.35	.30	.37	.95																									
17. Information Technology	2.93	1.29	.53	.39	.39	.37	.31	.38	.32	.15	.34	.58	.45	.44	.38	.31	.38	.51	.94																								
18. Visual Arts	3.32	1.26	.36	.43	.28	.21	.20	.39	.43	.34	.27	.46	.42	.44	.34	.38	.43	.23	.29	.94																							
19. Applied Arts & Design	3.16	1.22	.45	.50	.35	.31	.32	.43	.43	.34	.37	.58	.47	.46	.41	.45	.46	.29	.44	.66	.92																						
20. Performing Arts	2.75	1.38	.34	.27	.35	.28	.25	.26	.24	.19	.36	.39	.33	.32	.27	.36	.37	.25	.33	.43	.47	.94																					
21. Music	3.16	1.29	.41	.38	.37	.24	.21	.38	.37	.27	.35	.48	.44	.40	.34	.35	.44	.26	.36	.54	.57	.59	.93																				
22. Writing	3.19	1.27	.26	.27	.22	.19	.16	.33	.29	.27	.24	.35	.39	.39	.30	.42	.49	.22	.27	.56	.52	.49	.49	.92																			
23. Media	3.01	1.24	.39	.31	.38	.29	.33	.34	.30	.25	.46	.48	.42	.41	.37	.43	.44	.30	.41	.45	.59	.64	.53	.60	.91																		
24. Culinary Art	3.82	1.08	.23	.32	.23	.17	.18	.39	.38	.32	.25	.34	.35	.35	.34	.36	.36	.24	.27	.41	.44	.28	.34	.35	.36	.92																	
25. Teaching/Education	3.74	1.07	.24	.35	.24	.18	.22	.31	.30	.21	.36	.35	.31	.33	.34	.49	.43	.28	.27	.37	.42	.42	.35	.39	.45	.36	.91																
26. Social Service	3.87	.96	.16	.27	.19	.16	.26	.31	.33	.34	.31	.29	.27	.32	.40	.53	.37	.21	.24	.33	.38	.29	.33	.33	.35	.39	.53	.90															
27. Health Care Service	2.88	1.33	.34	.30	.29	.32	.38	.40	.34	.42	.34	.41	.39	.56	.65	.43	.38	.30	.34	.32	.40	.32	.32	.31	.40	.31	.38	.43	.96														
28. Personal Service	3.32	1.20	.17	.26	.25	.26	.30	.27	.25	.26	.32	.29	.19	.28	.32	.42	.32	.20	.28	.30	.42	.38	.28	.32	.43	.42	.48	.51	.39	.93													
29. Religious Activities	2.65	1.35	.31	.23	.31	.30	.20	.31	.24	.14	.32	.33	.23	.27	.29	.34	.33	.27	.26	.27	.32	.37	.32	.31	.35	.21	.38	.38	.38	.34	.96												
30. Professional Advising	3.30	1.24	.29	.30	.28	.22	.31	.31	.27	.21	.45	.42	.30	.32	.38	.48	.41	.30	.36	.31	.46	.44	.34	.37	.53	.34	.61	.51	.42	.55	.39	.95											
31. Business Initiatives	3.17	1.25	.40	.35	.37	.29	.39	.33	.27	.19	.48	.54	.35	.33	.35	.34	.35	.41	.50	.31	.46	.38	.36	.32	.50	.33	.39	.35	.36	.45	.33	.60	.94										
32. Sales	3.07	1.25	.31	.32	.31	.29	.33	.31	.26	.23	.43	.41	.31	.30	.34	.33	.30	.29	.38	.29	.41	.38	.28	.28	.44	.36	.39	.37	.39	.49	.33	.56	.65	.94									
33. Marketing/ Advertising	2.87	1.23	.36	.32	.32	.32	.31	.35	.27	.24	.45	.46	.34	.34	.37	.44	.41	.30	.43	.40	.59	.48	.42	.43	.61	.36	.44	.39	.40	.53	.39	.59	.61	.59	.93								
34. Finance	3.07	1.32	.41	.33	.34	.31	.31	.31	.25	.11	.41	.49	.38	.37	.38	.33	.37	.53	.51	.24	.34	.26	.25	.23	.36	.27	.33	.25	.32	.34	.32	.45	.64	.48	.44	.96							
35. Accounting	3.00	1.27	.24	.23	.24	.31	.26	.22	.15	.12	.22	.25	.15	.23	.24	.24	.21	.37	.41	.16	.26	.18	.14	.18	.24	.23	.24	.24	.28	.46	.26	.37	.40	.33	.36	.54	.94						
36. Human Resources	3.27	1.20	.23	.24	.24	.29	.31	.23	.16	.16	.33	.30	.20	.24	.29	.38	.32	.26	.35	.22	.34	.33	.23	.27	.41	.31	.50	.41	.35	.61	.32	.62	.50	.49	.52	.45	.56	.93					
37. Office Work	3.27	1.14	.13	.19	.16	.27	.21	.18	.13	.16	.14	.19	.13	.20	.22	.30	.25	.24	.35	.18	.24	.19	.12	.23	.23	.24	.35	.32	.28	.52	.23	.36	.31	.31	.34	.37	.64	.56	.92				
38. Management/ Administration	3.05	1.27	.41	.33	.38	.31	.36	.31	.25	.13	.46	.47	.32	.33	.32	.36	.37	.39	.47	.28	.42	.43	.34	.31	.55	.29	.46	.34	.35	.47	.35	.65	.73	.54	.60	.56	.42	.57	.32	.94			
39. Public Speaking	2.86	1.38	.34	.26	.34	.28	.23	.30	.24	.15	.43	.39	.33	.33	.32	.43	.42	.35	.35	.33	.38	.64	.40	.42	.55	.27	.51	.35	.35	.42	.43	.61	.53	.50	.54	.43	.24	.45	.23	.60	.96		
40. Politics	2.32	1.33	.43	.30	.42	.38	.32	.35	.24	.13	.40	.47	.35	.34	.30	.38	.37	.41	.39	.25	.35	.45	.32	.35	.52	.20	.36	.25	.33	.33	.39	.46	.51	.42	.49	.42	.26	.36	.22	.60	.55	.96	
41. Law	3.08	1.30	.35	.28	.32	.28	.49	.30	.24	.25	.39	.44	.32	.37	.45	.44	.40	.35	.36	.29	.41	.39	.34	.36	.49	.25	.39	.39	.46	.39	.33	.49	.51	.41	.48	.43	.33	.44	.27	.49	.46	.50	.95

Note. Values on the diagonal represent Cronbach's alpha of the scales.

Table 4
Fit Indices for Baseline Model, Eight-Dimension Model, and Six-Dimension Model From CFA and ESEM Analyses

Analysis type and model	χ^2	CFI	TLI	RMSEA	SRMR	AIC	BIC
CFA							
Baseline	30,434.268, $df = 12{,}382$, $p < .001$	.93	.93	.032 (90% CI [.031, .032], p (RMSEA $\leq$ .05) = 1.00)	.035	579,968.984	586,908.058
Eight dimensions	38,155.995, $df = 13{,}133$, $p < .001$	.91	.91	.036 (90% CI [.036, .036], p (RMSEA $\leq$ .05) = 1.00)	.069	586,188.711	589,155.800
Six dimensions	39,580.979, $df = 13{,}146$, $p < .001$	.90	.90	.037 (90% CI [.037, .037], p (RMSEA $\leq$ .05) = 1.00)	.073	587,587.696	590,486.028
ESEM							
Eight dimensions	2,387.717, $df = 520$, $p < .001$	.95	.92	.049 (90% CI [.047, .052], p (RMSEA $\leq$ .05) = .66)	.018	161,932.172	163,952.543
Six dimensions	4,021.850, $df = 589$, $p < .001$	.91	.87	.063 (90% CI [.061, .065], p (RMSEA $\leq$ .05) = .00)	.027	163,432.306	165,087.740

Note. $N = 1{,}464$. CFA = confirmatory factor analysis; ESEM = exploratory structural equation modeling; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual; AIC = Akaike information criteria; BIC = Bayes information criteria; CI = confidence interval.

interpret the eight interest dimensions, it is important to pay attention to the description of the dimensions in Table 2 as well as the basic interest scales that compose the dimensions and their factor loadings in Table 5, discussed next.

The Health Science dimension reflects the increasing integration of scientific discoveries in the life and medical sciences and the application of these scientific findings in the healthcare setting. It captures basic interests in life and medical sciences as well as healthcare services. The Creative Expression dimension is construed more broadly than interest in arts. It describes a general preference for the expression of creative ideas in various forms, including visual and performing arts, design, music, writing, media, and even cooking. The Technology dimension captures basic interests in engineering, physical science, mathematics/statistics, and IT, which share an underlying nature of problem-solving, innovation, and creation of new knowledge and technology that is fundamentally different from interests in mechanical and physical activities and goes beyond interests in traditional scientific activities. The People dimension includes basic interests in education, social service, social science, humanities and foreign language, and religious activities, reflecting a general preference for working with people, helping people, and understanding human behaviors and the human society. The Organization dimension captures interests in a range of activities in structured environments that serve organizational goals. With basic interests in office work, accounting, finance, human resources, and personal services, this dimension is much broader in scope than are the traditional Clerical or Conventional dimensions, reflecting the expanding horizon of the business work environment. The Influence dimension captures interests in leading, persuading, and influencing others either in the business domain (with basic interests in marketing/advertising, management/administration, professional advising) or in the political–legal domain (with basic interests in politics, law, and public speaking). Finally, the Nature dimension reflects increasing concern about the environment and natural resources in agriculture, forestry, and other land uses. The emergence of the Nature dimension marks a departure from traditional industries emphasizing interests in hands-on and physical activities such as mechanics, construction, and transportation, which are captured by the Things dimension.

The contextualization of vocational interests has a few implications for organizational research. First, our findings have highlighted the importance of ensuring the alignment between interest assessment and contemporary jobs and work activities. Organizational researchers may question how much difference the new dimensional model of interests makes and whether it is still acceptable to continue using existing interest measures that use Holland's interest types as their organizing framework. Although CFA model fit from the current study was similar for the SETPOINT model and the alternative model, we expect model differences favoring the SETPOINT model to enlarge with ongoing changes in the workforce and further evolvement in the structure of interests reflecting those changes. As noted earlier, healthcare and STEM occupations will count for the largest shares of new job creation in the coming decade (BLS, 2017), and the "greening of the world of work" will likely further increase the representation of industries and jobs related to the environment and nature (Dierdorff et al., 2009, p. 1; Dierdorff et al., 2011). As a result, we expect the advantage of the new interest model to become even more salient over the next decade and beyond, as researchers seek to unveil the power of interest fit in predicting a broader range of work and organizational outcomes.

Second, future research is needed on the development of vocational interests. In the current study, we drew on the exemplar model of impression formation and the script theory to illustrate that interests are cognitive appraisals of and affective reactions to objects in external environments. Formal theories are needed on the formation of mental models of vocational interests, supported by empirical evidence on the correspondence between interests and external environments (e.g., occupational structure). Thus far, few studies, if any, have investigated the evolvement of interest structure as a result of changes in the world of work. However, some indirect evidence has suggested that interests are at least partially socially constructed. For example, cross-cultural invariance of the Holland model in international samples was usually not supported (Rounds & Tracey, 1996). Lack of equivalence in interest structure internationally can be partially attributed to different occupational structures across cultures (Einarsdóttir, Rounds, &

Table 5
Loadings of Basic Interests on Eight Broad-Band Dimensions From Second-Order CFA

Basic interests	D1	D2	D3	D4	D5	D6	D7	D8
Life Science	.86							
Medical Science	.82							
Health Care Service	.75							
Media		.82						
Applied Arts & Design		.82						
Music		.75						
Visual Arts		.71						
Performing Arts		.71						
Creative Writing		.70						
Culinary Art		.53						
Engineering			.86					
Physical Science			.73					
Information Technology			.69					
Mathematics/Statistics			.60					
Social Science				.77				
Humanities & Foreign Language				.74				
Teaching/Education				.72				
Social Service				.69				
Religious Activities				.52				
Human Resources					.84			
Personal Service					.74			
Accounting					.71			
Office Work					.70			
Finance					.64			
Management/Administration						.85		
Business Initiatives						.81		
Marketing/Advertising						.80		
Professional Advising						.80		
Public Speaking						.74		
Sales						.72		
Politics						.68		
Law						.66		
Agriculture							.86	
Outdoors							.84	
Animal Service							.59	
Mechanics/Electronics								.82
Transportation/Machine Operation								.76
Construction/Woodwork								.72
Physical/Manual Labor								.68
Athletics								.55
Protective Service								.53

Note. CFA = confirmatory factor analysis; D1−D8 = Dimensions 1−8. D1 is Health Science, D2 is Creative Expression, D3 is Technology, D4 is People, D5 is Organization, D6 is Influence, D7 is Nature, and D8 is Things.

Su, 2010). Longitudinal and cross-cultural studies will help further advance interest theory on this topic.

Third, contextualization means that interests are expressed through individuals' relations with external environments, not that interests are unstable or fluctuate across situations. The rank-order stability of vocational interests was found to be comparable or even higher than that of personality traits for every age group before age 30 and to peak at .70 for the 22–29 age group (Low, Yoon, Roberts, & Rounds, 2005). Behavioral genetic studies have also shown that most interest domains demonstrate levels of heritability similar to that of personality traits and partially share genetic links with personality (e.g., Harris, Vernon, Johnson, & Jang, 2006; Kandler, Bleidorn, Riemann, Angleitner, & Spinath, 2011). For each person, vocational interests exhibit sufficient levels of stability comparable to those of personality traits, making them useful for predicting outcomes in the organizational context.

The Use of Interest Assessment in Organizational Research

One contribution of the current research is the development of the comprehensive assessment of basic interests (CABIN). This new assessment is more comprehensive (41 basic interest scales), more up-to-date and relevant, more refined, and more user-friendly than is any existing basic interest assessment, such as the 30 basic interest scales in the Strong Interest Inventory (Donnay et al., 2005) or the 31 scales in the Basic Interest Markers (Liao et al., 2008). The short, four-item scales in CABIN have excellent reliabilities (αs = .90−.97). Flexibility of use is another advantage of CABIN. Each of the scales can be used individually by organizations in a certain occupational field to predict specific work outcomes. Multiple scales can be used in combination to assess interests in broad-band dimensions and to predict broader outcomes. Additionally, the 164 items from CABIN can serve as the basis for future interest scale development. The availability of this comprehensive and contemporary mea-

Table 6
Loadings of Basic Interests on Six Broad-Band Dimensions From Second-Order CFA

Basic interests	D1	D2	D3	D4	D5	D6
Engineering	.83					
Mechanics/Electronics	.77					
Agriculture	.76					
Construction/Woodwork	.73					
Transportation/Machine Operation	.70					
Outdoors	.69					
Physical/Manual Labor	.62					
Athletics	.54					
Protective Service	.52					
Animal Service	.49					
Life Science		.88				
Physical Science		.80				
Medical Science		.74				
Mathematics/Statistics		.56				
Media			.83			
Applied Arts & Design			.82			
Music			.75			
Visual Arts			.71			
Performing Arts			.71			
Creative Writing			.69			
Culinary Art			.53			
Teaching/Education				.73		
Social Science				.72		
Personal Service				.69		
Social Service				.68		
Human Resources				.68		
Humanities & Foreign Language				.68		
Health Care Service				.63		
Religious Activities				.54		
Management/Administration					.85	
Business Initiatives					.81	
Marketing/Advertising					.80	
Professional Advising					.80	
Public Speaking					.74	
Sales					.72	
Politics					.68	
Law					.66	
Finance						.80
Accounting						.69
Information Technology						.69
Office Work						.60

Note. CFA = confirmatory factor analysis; D1−D6 = Dimensions 1−6. D1 is Realistic, D2 is Investigative, D3 is Artistic, D4 is Social, D5 is Enterprising, and D6 is Conventional.

sure of basic interests should help increase the momentum of research on and use of interest assessment in organizations.

Given that interests are hierarchically structured, organizational researchers may be faced with the decision whether to assess interests at the level of broad-band interest dimensions or at the level of basic interests. This issue parallels the debate on the use of Big Five personality factors versus facets in personnel selection (Ashton, 1998; Dudley, Orvis, Lebiecki, & Cortina, 2006; Hogan & Roberts, 1996; Ones & Viswesvaran, 1996; Paunonen, Rothstein, & Jackson, 1999; Schneider, Hough, & Dunnette, 1996). Proponents of the use of personality facets have cited their superior predictive validity, psychological clarity, and interpretability, and have advocated for a more refined approach to personality assessment (e.g., Paunonen et al., 1999). Proponents of the use of broad personality traits, on the other hand, have argued that global measures of personality are more predictive of complex outcomes such as overall job performance and have emphasized the usefulness of broad traits for the purpose of theory building (e.g., Ones & Viswesvaran, 1996). We submit that there is value in the assessment of both broad-band interest dimensions and basic interest constructs. As discussed previously, broad-band interest dimensions are valuable because they can serve as a much-needed framework for organizing interest research and summarizing validity evidence. However, researchers should keep in mind that broad-band interest dimensions are multidimensional, as indicated by the current study. Researchers should also be aware that existing interest measures—even measures developed under the same theoretical framework—vary in their coverage of basic interest scales and sampling of interest items within each interest dimension. All RIASEC-based interest measures do not assess the same constructs. For example, both the Strong Interest Inventory and the CAI use Holland's interest types as the organizing framework of their broad-band interest factors. However, as shown in Table S1 in the online supplementary materials, these two measures differ largely in the range and specificity of basic interest scales included, not to mention that other, shorter measures of broad-band interest dimensions may not represent a comprehensive range of basic interests. Therefore, organizational researchers should use existing broad-band interest measures with care and pay close attention to the composition of each dimension when interpreting results.

The current study also suggests that basic interest constructs, compared with broad-band interest dimensions, may capture the complexity of the interest domain more adequately and may provide a more fine-grained understanding of individual interests (Day & Rounds, 1997; Liao et al., 2008). Basic interest scales have been shown to be more predictive than broader interest themes for criteria including occupational membership and major fields of study (Donnay & Borgen, 1996; Gasser, Larson, & Borgen, 2007; Liao et al., 2008) and have incremental validity over and above broad interest themes (Ralston, Borgen, Rottinghaus, & Donnay, 2004). Using type of interest scales as a moderator in their meta-analysis on interests and job performance, Van Iddekinge, Roth, et al. (2011) reported that basic interest scales, on average, were more predictive than were broad interest themes (effect size increased .03 when basic interest scales were used). These findings highlight the potential value of basic interest scales in organizational research because of their superior predictive validity within job-specific contexts, clarity, and interpretability. Given the focus of the current study on dimensional model of interests, we only examined the validity of the eight broad-band interest dimensions for predicting occupational membership. A potentially fruitful area for future research is to examine interest profiles of specific occupational groups in the SOC and the validity of the new basic interest scales for predicting occupational membership and other outcomes for workers in specific fields.[3]

In addition, basic interest scales may be particularly useful for understanding careers and jobs at the intersection of multiple interest dimensions. Consider the example of a social media communications coordinator, whose job responsibilities involve publishing promotional content about an organization on social media and managing the organization's website. Traditional interest models have largely overlooked jobs like this because it

[3] We thank an anonymous reviewer for suggesting this future research direction.

Table 7
Loadings of Basic Interests on Eight Broad-Band Interest Dimensions From ESEM

Basic interests	D1	D2	D3	D4	D5	D6	D7	D8
Life Science	**.54**	.11	.32	.18	−.01	−.10	.14	.02
Medical Science	**.75**	.00	.12	.08	.01	.05	.03	−.04
Health Care Service	**.69**	.02	−.13	.06	.08	.04	−.01	.13
Media	.06	**.62**	−.03	.05	−.03	.24	−.18	.08
Applied Arts & Design	.03	**.76**	.03	−.18	.08	.08	.14	−.01
Music	.00	**.70**	.06	.02	−.09	.00	−.01	.09
Visual Arts	−.02	**.78**	.06	−.06	.03	−.10	.17	−.07
Performing Arts	−.06	**.62**	−.08	.20	−.06	.11	−.28	.20
Creative Writing	.01	**.73**	.05	.17	.05	−.09	−.09	−.10
Culinary Art	.03	**.28**	.00	.08	.16	.08	.30	−.11
Engineering	.12	.23	**.29**	−.09	−.04	.21	.18	.30
Physical Science	.27	.19	**.43**	.16	−.11	.00	.19	.03
Information Technology	.09	.16	**.39**	−.11	.26	.12	−.05	.16
Mathematics/Statistics	.10	−.08	**.49**	.11	.18	.12	−.06	.16
Social Science	.24	.13	.09	**.43**	.12	.06	.08	−.12
Humanities & Foreign Language	.15	.21	.33	**.41**	.04	−.01	.12	−.09
Teaching/Education	−.02	.12	−.08	**.43**	.14	.27	.14	−.06
Social Service	.18	.05	−.21	**.32**	.16	.20	.25	−.09
Religious Activities	.07	.08	−.06	**.25**	.10	.12	−.04	.22
Human Resources	−.03	−.02	−.10	.19	**.56**	.28	−.01	.03
Personal Service	.02	.14	−.26	.17	**.48**	.19	.11	.01
Accounting	−.01	−.03	.16	−.04	**.86**	−.09	−.10	.09
Office Work	−.02	.03	−.01	.12	**.87**	−.22	−.05	.02
Finance	.07	−.10	.42	−.04	**.34**	.41	−.04	.01
Management/Administration	−.05	.00	.12	.08	.13	**.69**	−.04	.09
Business Initiatives	.01	.05	.17	−.14	.09	**.79**	.06	−.01
Marketing/Advertising	.02	.37	−.05	−.02	.15	**.44**	−.02	.02
Professional Advising	.02	.03	−.09	.28	.15	**.59**	.08	−.05
Public Speaking	−.05	.15	.03	.39	−.06	**.47**	−.17	.12
Sales	.06	.04	−.04	−.03	.12	**.59**	.11	.03
Politics	.03	.05	.12	.19	−.03	**.39**	−.17	.30
Law	.32	.09	−.02	.06	.08	**.32**	−.12	.11
Agriculture	.09	−.01	.17	.22	.01	−.03	**.48**	.32
Outdoors	.01	.04	.10	.19	−.05	−.03	**.61**	.27
Animal Service	.30	.12	−.18	.02	.00	−.09	**.39**	.14
Mechanics/Electronics	.03	.14	.26	−.08	−.03	.06	.08	**.57**
Transportation/Machine Operation	−.06	.05	.05	.02	.01	.06	.10	**.69**
Construction/Woodwork	−.09	.15	.14	−.01	.06	.03	.42	**.37**
Physical/Manual Labor	.03	−.03	−.03	−.01	.20	−.13	.06	**.76**
Athletics	.08	.03	.03	.05	−.07	.42	.08	**.25**
Protective Service	.32	−.03	−.12	−.16	.08	.19	.04	**.35**

Note. Bolded values denote loadings on a primary dimension. ESEM = exploratory structural equation modeling; D1−D8 = Dimensions 1−8. D1 is Health Science, D2 is Creative Expression, D3 is Technology, D4 is People, D5 is Organization, D6 is Influence, D7 is Nature, and D8 is Things.

reflects multiple interest types (Artistic, Enterprising, Realistic, and Social). Some of these interest types (e.g., Realistic−Social) are considered "opposite" of each other according to Holland's theory. Individuals interested in both are considered lacking consistency and are expected to have more difficulties in career decision-making. However, contemporary careers are becoming increasingly boundaryless, and modern jobs are increasingly multidimensional (Arthur, Khapova, & Wilderom, 2005; Sullivan & Arthur, 2006). These multidimensional jobs can be easily described using a combination of basic interests. The example of social media communications coordinator is marked by basic interests in writing, media, marketing/advertising, information technology, and possibly social science and humanities. CABIN should be particularly useful for the purposes of selection and prediction of work outcomes in these multidimensional jobs.

Methodological Considerations in the Evaluation of Interest Structure

One methodological contribution of the current study is establishing the appropriateness of using second-order CFA and ESEM for examining interest structure. We caution researchers against the use of item-level CFA in evaluating dimensional models of interests, because poor fit may simply reflect the intrinsic heterogeneity of broad-band interest factors. For example, Warlick and colleagues (2017) conducted a six-factor CFA to evaluate the O*NET Interest Profiler Short Form (Rounds, Su, Lewis, & Rivkin, 2010), with 10 items as indicators for each RIASEC type. Their study reported inadequate fit of the six-factor structure for the measure (CFI = .70, TLI = .69, RMSEA = .08, SRMR = .10). The reason for poor fit in this study and other studies using item-level CFA is that the items assessing each broad-band interest

Table 8
Loadings of Basic Interests on Six Broad-Band Interest Dimensions From ESEM

Basic interests	D1	D2	D3	D4	D5	D6
Engineering	**.53**	.20	.15	−.13	.15	.05
Mechanics/Electronics	**.68**	.07	.08	−.29	.11	.07
Agriculture	**.69**	.17	.00	.15	−.13	−.04
Construction/Woodwork	**.75**	−.06	.09	.01	−.10	.02
Transportation/Machine Operation	**.74**	−.14	.02	−.15	.14	.00
Outdoors	**.74**	.08	.03	.20	−.21	−.13
Physical/Manual Labor	**.73**	−.14	−.08	−.09	.02	.15
Athletics	**.36**	.03	−.01	.06	.42	−.08
Protective Service	**.42**	.04	−.16	.13	.21	.05
Animal Service	**.46**	.09	.03	.36	−.21	−.12
Life Science	.17	**.66**	.10	.14	−.08	.07
Physical Science	.23	**.53**	.21	−.04	−.03	.01
Medical Science	.06	**.61**	−.05	.28	.09	.05
Mathematics/Statistics	.14	**.37**	−.02	−.20	.17	.33
Media	−.02	.01	**.60**	.02	.33	.00
Applied Arts & Design	.21	−.01	**.61**	.06	−.03	.07
Music	.14	.02	**.67**	−.06	.01	−.05
Visual Arts	.14	.01	**.71**	.05	−.21	.03
Performing Arts	−.03	−.09	**.65**	−.02	.29	−.05
Creative Writing	−.18	.09	**.79**	.06	−.04	.07
Culinary Art	.17	.03	**.26**	.29	−.07	.08
Teaching/Education	.04	.01	.20	**.42**	.29	−.01
Social Science	−.06	.33	.21	**.37**	.12	.04
Personal Service	.08	−.18	.13	**.51**	.16	.27
Social Service	.11	.05	.06	**.59**	.15	−.04
Human Resources	.01	−.12	.01	**.38**	.30	.42
Humanities & Foreign Language	.01	.43	.31	**.15**	.03	.06
Health Care Service	.16	.37	−.05	**.36**	.13	.03
Religious Activities	.16	.00	.13	**.16**	.24	.03
Management/Administration	.10	.01	.03	.07	**.66**	.15
Business Initiatives	.15	.05	.01	.04	**.60**	.16
Marketing/Advertising	.07	−.06	.32	.17	**.40**	.12
Professional Advising	.03	−.01	.07	.40	**.57**	.03
Public Speaking	−.03	.03	.27	.11	**.60**	−.06
Sales	.18	−.03	.00	.22	**.47**	.09
Politics	.16	.08	.11	−.07	**.54**	.01
Law	.05	.19	.06	.17	**.41**	.08
Finance	.06	.27	−.08	−.08	.34	**.46**
Accounting	.00	−.01	−.02	.10	−.08	**.86**
Information Technology	.19	.24	.14	−.20	.12	**.40**
Office Work	−.07	−.07	.08	.30	−.16	**.74**

Note. Bolded values denote loadings on a primary dimension. ESEM = exploratory structural equation modeling; D1−D6 = Dimensions 1−6. D1 is Realistic, D2 is Investigative, D3 is Artistic, D4 is Social, D5 is Enterprising, and D6 is Conventional.

factor (10 in this case) are designed to capture a range of basic interests within that factor and do not meet the unidimensional assumption required by CFA. It is not surprising that model fit in this study improved after correlating residuals from items measuring the same basic interest constructs. Methods for evaluating interest models need to match the hierarchical structure of vocational interests.

The current research also demonstrated the complexity of interest structure and the value of ESEM in evaluating dimensional models of interests. As discussed earlier, some basic interest scales may tap into multiple interest dimensions. Results from Tables 7 and 8 reveal many of these logical and meaningful patterns of cross-loadings. For example, basic interest in Athletics, as expected, loaded on both Things and Influence dimensions in the SETPOINT model and both Realistic and Enterprising in the alternative model; basic interest in Information Technology loaded on both Technology and Organization in the SETPOINT model and both Conventional and Investigative in the alternative model. Leaving out these meaningful secondary loadings and imposing zero nontarget cross-loadings places an overly stringent constraint on interest structure and may result in inflated latent factor correlations and poorer model fit (Marsh et al., 2009). In the current study, latent factor correlations for the SETPOINT model from ESEM ranged from .09 to .53, whereas those from second-order CFA ranged from .35 to .88; similarly, latent factor correlations for the alternative model from ESEM ranged from .16 to .58, whereas those from second-order CFA ranged from .53 to .85. The latent factor correlations from CFA models were likely inflated by imposing zero cross-loadings that also led to merely adequate model fit. ESEM provides a more accurate representation of the complex structure of vocational interests. This may be particularly true with the increasing multidimensionality of jobs and careers.

Additional Future Research Directions

The current article provides only a first step in establishing a contemporary dimensional model of vocational interests. Future research needs to further evaluate and replicate the SETPOINT model. The eight interest dimensions identified in this research are theoretically founded and practically significant because they are well aligned with occupational structure and demonstrate strong predictive validity for occupational membership in new and traditional sectors of work. Our study employed a relatively large sample (N = 1,464) that represented all 23 of the SOC major occupational groups. However, the sample included only 23 participants who were classified as working in green occupations, a fast-growing and yet still relatively small field. Although class imbalance itself does not bias the estimates from a logistic regression, having only a small number of individuals in the green occupational group means that their interests may or may not fully represent the interest profile of individuals employed in the entire field. More research is needed to provide structural and predictive validity evidence for the interest dimensions in the SETPOINT model and ensure that they are generalizable.

Recent research has suggested many potential applications of interest assessment in organizations, ranging from targeted recruitment (e.g., K. S. Jones et al., 2013) to the prediction of job performance and turnover (e.g., Nye et al., 2012, 2017; Van Iddekinge, Roth, et al., 2011). The current article provides preliminary evidence on the validity of the SETPOINT model for predicting occupational membership. Future research is needed to investigate the predictive validity of the new interest dimensions and assessment of basic interests for other work outcomes and to evaluate their uses in various organizational functions. For example, we expect individuals with strong interests in the Technology dimension to perform better, feel more satisfied, and stay longer in STEM occupations. In general, we expect the SETPOINT model to outperform existing interest models in predicting job performance, job satisfaction, and turnover because of its better correspondence with the contemporary occupational structure. These areas may prove to

Table 9
Validity of Eight-Dimension Versus Six-Dimension Model for Predicting Membership in New and Traditional Occupational Groups

	Eight-dimension model						Six-dimension model					
	O1	O2	O3	O4	O5	O6	O1	O2	O3	O4	O5	O6
Demographic variables												
Gender (female)	1.15**	−.76*	−.98	.79	−1.80**	1.71**	1.51**	−1.29**	−.53	.34	−1.78**	1.76**
Age	−.01	−.01	.02	−.00	−.00	.04**	−.01	−.01	.03	−.00	−.00	.04**
Race												
Black	.65	−.30	—	−.85	−.21	−.07	.54	−.19	—	−.64	−.15	.00
Native American	—	—	—	.85	−.14	.20	—	—	—	.75	−.06	.18
Asian or Pacific Islanders	−.06	.43	—	−.16	−1.20	.39	.19	.45	—	−.15	−1.14	.37
Bi/multiracial or other	—	−.57	—	−.61	−.12	1.79	—	−.34	—	−.65	−.05	1.69
Ethnicity	−.32	−.17	−.34	.40	.44	−.65	−.38	−.18	−.26	.41	.44	−.74
Education	.09	.25**	.11	.58**	−.42**	−.31**	.00	.29**	.04	.63**	−.42**	−.30**
Interest dimensions												
Health Science	1.67**	−.20	−.23	−.33	−.02	−.24						
Creative Expression	−.16	−.18	.27	.10	−.06	.47						
Technology	−.42	1.90**	.23	−.07	−.21	.01						
People	−.20	−.16	−.48	1.28**	−.07	−.36						
Organization	−.36	−.21	−.59	−.35	−.43	.76**						
Influence	−.60*	−.14	.01	−.24	−.16	−.88**						
Nature	−.13	−.32	1.86**	−.41	.33	−.20						
Things	−.05	−.06	−.16	−.09	.80**	.14						
Realistic							−.06	.10	.99	−.64*	1.16**	−.04
Investigative							.77**	.77**	.84	−.20	−.19	−.47*
Artistic							−.36	−.00	.17	.17	−.01	.44
Social							.74**	−.77**	−.56	1.13**	−.33	−.33
Enterprising							−.75**	−.09	−.14	−.26	−.23	−.69**
Conventional							−.48**	.55**	−.95*	−.44*	−.23	.81**
Summary statistics												
McFadden's R^2	.30	.25	.19	.21	.23	.20	.19	.18	.16	.19	.22	.20
McFadden's R^2 (adjusted)	.26	.22	.09	.16	.19	.16	.15	.16	.07	.15	.19	.16
OOR	5.24	5.50	6.13	4.06	4.65	4.06	3.59	3.75	3.91	3.90	4.64	4.05
OOR (adjusted)	4.24	5.49	4.85	3.60	4.17	3.74	3.26	3.46	2.97	3.51	4.20	3.61

Note. Ethnicity means that a participant self-identified as Latino/a. Total *N* for logistic regressions = 1,414. O1−O6 = Occupation 1−6. O1 is healthcare (*N* = 115; 8.13%); O2 is science, technology, engineering, and mathematics (*N* = 168; 11.88%); O3 is green occupations (*N* = 23; 1.63%); O4 is education (*N* = 102; 7.21%); O5 is manual and skills trades (construction, installation, repairing, production, and transportation occupations; *N* = 125; 8.84%); and O6 is office and administrative support (*N* = 113; 7.99%). *OOR* = overall odds ratio; *OOR* (adjusted) = *OOR* corrected for overestimation due to overfitting to a specific sample. Because of the large number of logistic regression analyses conducted, Bonferroni correction was used to determine critical *p* values and control the Type I error rate.
* $p < .005$, ** $p < .001$, and dashes denote not enough observations in a category to calculate coefficient for the predictor (thus excluded).

be fruitful for future research and may provide value added to organizations for selecting and retaining the best employees. Additionally, future research should compare interest assessment at the level of basic interests and the level of broad-band interest dimensions to determine the optimal level of measurement for prediction and other purposes.

Finally, future research needs to examine whether the dimensional structure of interests varies across demographic groups. Existing research evaluating the RIASEC model has shown few structural differences between men and women, between different racial groups, and across age groups in the United States (e.g., Day & Rounds, 1998; Holland et al., 1994; Tracey & Robbins, 2005). However, the RIASEC model represents six interest types in a two-dimensional space. With the new dimensional model of interests, it is important for theory building and for future scale development effort to examine whether individuals represent and organize interests differently based on their gender, age, education, socioeconomic status, and racial, ethnic, or cultural background, and, if so, what psychological processes may contribute to these differences. Answering this question will not only advance the understanding of interest structure but also inform procedures needed to minimize biases in the measurement of interests in organizational research.

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(*Appendix follows*)

Appendix

Comprehensive Assessment of Basic Interests (CABIN)

Instruction: The following questionnaire contains a list of activities. Please indicate the extent to which you would like or dislike doing each activity. Respond ONLY based on how you feel about engaging in the activity. Do NOT think about whether you have the skills to do the activity or how much money you would make doing it.

Dislike a great deal	Dislike somewhat	Neither like nor dislike	Like somewhat	Like a great deal
1	2	3	4	5

1. Mechanics/Electronics

1. Repair car engines
2. Perform aircraft maintenance
3. Maintain wind turbine generators
4. Install radio communication systems

2. Construction/Woodwork

1. Build wood wall shelves
2. Build kitchen cabinets
3. Sand and refinish a piece of furniture
4. Build a fence

3. Transportation/Machine Operation

1. Drive a bus
2. Drive a delivery truck
3. Operate a train
4. Operate a crane to move freight and cargo

4. Physical/Manual Labor

1. Load and unload aircraft baggage
2. Load and unload cargo
3. Move building materials on construction sites
4. Pack and move products in a warehouse

5. Protective Service

1. Arrest suspects of criminal acts
2. Conduct surveillance of suspects
3. Inspect people and vehicles for illegal goods
4. Investigate reports of organized crime

6. Agriculture

1. Farm and harvest crops
2. Inspect orchards to detect diseases or pests
3. Learn about soil and climate requirements of various plants
4. Apply principles of soil science to conserve land

7. Nature/Outdoors

1. Water and fertilize garden plants
2. Survey forest areas and access roads
3. Plant trees in a nature preserve
4. Work to restore a wildlife habitat

8. Animal Service

1. Treat and care for injured animals
2. Feed and bathe animals in a zoo
3. Exercise animals daily to keep them healthy
4. Find stray animals and take them to a shelter

9. Athletics

1. Play a team or individual sport
2. Participate in athletic events
3. Train for a competitive sport
4. Coach practice sessions for a sports team

10. Engineering

1. Design a structure that can withstand heavy wind
2. Develop lighter and stronger materials for new products
3. Redesign a production line to improve its efficiency
4. Improve the human–machine interface of an operation system

11. Physical Science

1. Study the formation and evolution of galaxies
2. Analyze a mineral sample found on Mars
3. Investigate the molecular structure of an unknown substance
4. Study the causes for earthquakes and tsunamis

(*Appendix continues*)

12. Life Science

1. Map human gene structure
2. Study the physiological structure of animals
3. Investigate the genetic sequence of organisms
4. Research newly discovered bacteria with laboratory experiments

13. Medical Science

1. Examine how viruses infects the human body
2. Investigate the cause of a chronic health problem
3. Research the side effects of a medicine
4. Investigate prevention methods for diseases

14. Social Science

1. Study cultural differences between groups
2. Investigate how poverty influences educational attainment
3. Study the effects of public policy on violence reduction
4. Research why people have stereotypes and prejudice

15. Humanities

1. Study the history of an ancient society
2. Study various branches of philosophy
3. Compare the modern history of different countries
4. Document the traditions of a remote community

16. Mathematics/Statistics

1. Solve mathematical problems
2. Learn about a new theory in geometry
3. Use mathematical equations to solve practical problems
4. Develop a statistical model to explain a phenomenon

17. Information Technology

1. Test and compare different software
2. Create a new computer database
3. Monitor the daily performance of computer systems
4. Diagnose and resolve computer hardware or software problems

18. Visual Arts

1. Sketch a picture
2. Paint a landscape
3. Draw illustrations for a book
4. Create a unique piece of artwork

19. Applied Arts and Design

1. Create a piece of artistic and functional furniture
2. Create the set for a movie or stage play
3. Design the layout and lighting of an exhibition
4. Design unique packaging for a product

20. Performing Arts

1. Perform on stage for a group of people
2. Act in a play
3. Act out an emotional movie scene
4. Perform comedy to entertain an audience

21. Music

1. Play a musical instrument
2. Compose an original piece of music
3. Play in a band
4. Arrange background music for a show

22. Writing

1. Write a novel
2. Write short stories
3. Compose a poem
4. Study creative writing

23. Media

1. Direct a TV show
2. Write a movie screenplay
3. Host a radio program
4. Develop a podcast series

24. Culinary Art

1. Select ingredients to prepare food
2. Create the recipe for a new dish
3. Create a new cooking technique to enhance flavor
4. Learn about required temperature and time for baking pastries

25. Teaching/Education

1. Teach students a new set of skills
2. Explain a topic to someone with no prior knowledge of the subject
3. Teach a beginner how to perform a task
4. Teach visitors on educational field trips

(*Appendix continues*)

26. Social Service

1. Volunteer at a community service center
2. Help someone overcome an obstacle in personal life
3. Provide aid to students from underprivileged backgrounds
4. Assist people with disabilities in finding employment

27. Health Care Service

1. Treat patients for acute illnesses or injuries
2. Care for patients in critical condition
3. Monitor patient reactions to medicines
4. Formulate treatment plans for patients

28. Religious Activities

1. Provide spiritual guidance for others
2. Explain a religious text to people
3. Teach religious beliefs and rituals
4. Work with a religious youth group

29. Personal Service

1. Arrange travel plans and accommodations for clients
2. Greet guests and answer questions at an information desk
3. Help clients plan for their special occasions
4. Organize recreational activities for clients

30. Professional Advising

1. Coach others to develop leadership skills
2. Coach people to prepare for job interviews
3. Advise people in meeting their professional goals
4. Instruct clients in effective communication techniques

31. Business Initiatives

1. Negotiate a business deal
2. Set up a string of small business enterprises
3. Expand a business to incorporate a new line of products
4. Beat competitors through strategic business practices

32. Sales

1. Persuade customers to try a new product
2. Increase sales for a company during a promotion week
3. Sell services to a target group of people
4. Learn tactics to be effective at sales

33. Marketing/Advertising

1. Lead an advertising campaign
2. Market a company on social media platforms
3. Coordinate marketing activities to promote a new product
4. Distribute promotional materials to advertise an event

34. Finance

1. Make investment decisions based on financial data
2. Analyze the financial information of a company
3. Project future expenditures of a business
4. Assess potential risks and gains of an investment

35. Accounting

1. Prepare employee payroll
2. Monitor account balance and prepare monthly statements
3. Keep accounting records for a company
4. Calculate tax deductions for a business

36. Human Resources

1. Hire employees and process hiring-related paperwork
2. Conduct orientation sessions for new workers
3. Explain company policies and benefits to employees
4. Conduct surveys of employee satisfaction

37. Office Work

1. Enter personnel records into a computer program
2. Catalog files in an office
3. Print and disseminate documents to be used at a conference
4. Keep track of customer requests

38. Management/Administration

1. Manage a medium-sized organization
2. Supervise a large number of workers
3. Serve as the chairperson for a corporate board
4. Serve as the president of a professional association

39. Public Speaking

1. Present your ideas at a conference
2. Speak as the representative of an organization
3. Be the speaker at a fund-raising event for a worthy cause
4. Make a public speech to raise awareness of community issues

40. Politics

1. Run for a political office
2. Be the head of the city council
3. Lead a committee to make policy decisions
4. Assume political leadership responsibilities

41. Law

1. Defend a client against a legal charge
2. Present logical arguments in a courtroom
3. Provide compelling evidence for a trial
4. Resolve legal disputes between parties

Note. Scale names are not presented to respondents when administering the assessment.

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