APPENDIX E

Report of the

Work Taxonomy and Classification Subcommittee

Work Taxonomy and Classification Subcommittee
Content Model and Classification Recommendations

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Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Report of the Work Taxonomy and Classification Subcommittee of the Occupational Information Development Advisory Panel (OIDAP): Findings and Recommendations Regarding Work Measurement

September 1, 2009

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Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

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Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

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Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Executive Summary

This report describes the central and seminal role of Industrial and Organizational Psychology in determining the link between work and the demands work places on the worker (see page 2). Linking the world of work and the required human attributes to perform work is the key problem in work disability determination. By making clear the assumptions that place constraints on our efforts (see page 5), describing a method of due diligence involving both extensive field interviews and observations (see page 10), detailing the review and consolidation of previous empirical work taxonomies (see page 10), we have reached a clearly indicated set of findings and recommendations (see page 13). The heart of these recommendations is that we believe the SSA must develop their own internal occupational analysis unit, staff it with experts in the field of occupational analysis, carry out pilot studies to refine work measurement instruments that consist of behavioral and observable descriptors, launch a nationwide occupational analysis system, and encourage extensive involvement from the scientific and user communities while doing so (see page 27). These findings and recommendations were made based on the current state of the scientific literature concerning work analysis (see page 19) and are designed to maximize the defensibility of the new occupational information system. We feel that, barring any delays due to external reviews, the vast majority of our recommendations can be carried out over an eighteen month period. Because data that will be collected as part of the OIS Pilot Study is a prerequisite and foundational to all other recommendations, its completion must be an SSA priority. Finally, a glossary is provided to help the reader better grasp the technical nature of the issues discussed in this report (see page 23).

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Report of the Work Taxonomy and Classification Subcommittee of the
Occupational Information Development Advisory Panel (OIDAP):
Findings and Recommendations Regarding Work Measurement

Preface

Job and Work Analysis are often described as foundational because the information generated by these activities is used as the primary input into several decision making systems involving people at work. A completed work analysis is of no value until the results are used by one or more of these systems. The implication of this insight is that any error committed as part of a work analysis will impact the many other systems which are, in part, based on the work analysis results. Describing work is not easy, requires considerable resources, and needs to be frequently updated (Wilson, 2007). Work analysis done incorrectly can result in inaccurate decisions and unfairness for those affected by the decisions. Work analysis that is not accurate and complete is likely to be challenged, will not be defensible, and will need to be redone resulting in increased costs and wasted effort.

What if you were interested in analyzing all work in the economy so that you could build an occupational information system for the purpose of determining work related disability and you also wanted to keep the information up-to-date? To complete a work analysis it is important to know why the analysis is being done (purpose), what degree of specificity of work descriptors is required (specificity), who will be providing the information (source), what means will be used to collect the information (modality), and how you will determine if the information is acceptable for the desired application (evaluation). For work analysis experts, the answer to several of these questions is straightforward for the problem at hand but others require more explanation. Other parts of this report will deal with issues of specificity, source, modality, and evaluation but the issue of purpose will be discussed in more detail here. Doing work analysis for the purpose of disability determination requires establishing a linkage between work and the human attributes required to complete the work.

Industrial and Organizational Psychologists have long been interested in using work analysis results to make inferences regarding what the work requires of the individual who performs the work (Harvey, 1991). The process of determining work demands on an individual (i.e., job specification) requires that someone knowledgeable in both human attributes and work analysis review the work information (that is, what activities are performed on the job), and then in some fashion infer the human attributes that may be required to do the work successfully. This process is an example of what scientific methodologists mean

when they speak of making "inferential leaps." Inferential leaps are often looked upon with some suspicion by scientists because the act of inference may involve human judgment and all the potential sources of error that result from such judgment. For the process to be acceptable to other scientists, the expert must make the case that other experts looking at the same situation would come to the same conclusions. One way to ensure similar conclusions by other experts is to decrease the distance of the "leap" by identifying a series of judgment rules, or by conducting empirical research to confirm the predictions inherent in a job specification.

The systematic linkage of the world of work to a comprehensive taxonomy of physical, cognitive, and interpersonal attributes of workers has been a primary goal of Industrial and Organizational Psychology for some time (Dunnette, 1976). One major difficulty in establishing this linkage is that work is often described in different ways that make job-to-job comparisons difficult (e.g., by using different descriptors and metrics). To the extent that descriptors used to describe work are concrete, observable, and behavioral they will be more likely to be evaluated with more consistency. Conversely, there is clear evidence that as job analysis descriptors become more abstract the evaluation of them becomes more difficult (Dierdorff & Wilson, 2003). Another benefit of a common set of descriptors and metrics is that it makes the process of comparing one job to another (a common task in the disability determination process) easier, more comprehensive, and provides less room for errors in human judgment. Describing work with a common set of descriptors and metrics is essential to establishing a linkage between the world of work and the attributes required of the worker because it will help minimize the distance of the inferential leap required.

Overview

This document describes the purpose, assumptions, procedures, findings, and recommendations, of the Work Taxonomy and Classification Subcommittee of the Occupational Information Development Advisory Panel (OIDAP). Each of the areas listed above is discussed below in enough detail to provide the reader with a complete understanding of the subcommittee's activities. We want the reader to understand both what we recommend and how we came to choose our recommendations. We have included information relevant to the initial and intermediate steps of some of our activities, as well as the final results of those efforts. We hope this information will allow the reader to better evaluate and potentially replicate the results of our efforts. One important goal of this report is to be transparent concerning the Work Taxonomy and Classification

Subcommittees activities leading to the recommendations in this report. In order to achieve this goal, while still producing an accessible document, substantial amounts of information are presented in tables, figures, and as appendices at the end of the report.

Purpose of the OIDAP and the OIDAP Work Taxonomy and Classification Subcommittee

The OIDAP was appointed by the Commissioner of the Social Security Administration (SSA) to provide advice and recommendations on occupational information issues. As stated in the OIDAP Charter, "The Panel will advise the agency on creating an occupational information system tailored specifically for SSA's disability programs and adjudicative needs." The primary role of the Panel is to provide advice in a number of areas related to the collection and use of occupational information. One way to visualize the task of the OIDAP is presented in Figure 1, which illustrates the way in which information on both the job-side (work activities) and person-side (required personal characteristics) can be arranged and described in terms of its degree of behavioral specificity, ranging from highly detailed Level 1 information through highly abstract Level 5 constructs.

An important aspect of the OIDAP process at the beginning of this project to develop the new Occupational Information System (OIS) for SSA is to make recommendations concerning a comprehensive list of work descriptors that could be used as the framework for constructing a new OIS that is based on collecting information describing all jobs in the economy. The recommendations in this report assume that the comprehensive list of descriptors are at Level 3 or 4 in Figure 1 and that data will be collected at Level 2. Hence, the task of the OIDAP is to provide advice to SSA on the identification, development, operationalization, and maintenance of an occupational information content model to describe the world of work in sufficient detail to be useful for disability determination purposes.

The OIDAP Work Taxonomy and Classification Subcommittee was formed on the last day of the inaugural meeting of the OIDAP (2-25-2009). The purpose of the subcommittee is twofold: (a) to provide advice to the entire Panel concerning what type of taxonomy of work activity (see "Job Side" of Figure 1) would be optimal in the new OIS, and (b) to identify issues and provide recommendations regarding the strategies that are used to link the information in the job-side of the new OIS to the person-side traits and characteristics that the SSA will use with medical or functional evidence of the effects of impairments to assess the residual functional capacity (RFC) of individual disability claimants.

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

This report is the culmination of the subcommittee's efforts to provide advice to the Panel concerning work taxonomies. As the process of developing a new OIS proceeds, the issue of linking the job- and person-sides of the OIS content model will receive more detailed attention. However, because the other OIDAP subcommittees are only now preparing to offer their initial recommendations regarding ways in which the existing person-side traits assessed in the physical and mental RFC process might be modified or extended (e.g., to include additional physical or non-physical constructs), we cannot yet speak to the critical issue of how SSA should link the two "worlds of work" shown in Figure 1 in a fashion that is optimal for SSA's purposes in a technical and a legal-defensibility sense.

Three members of the OIDAP (Shanan Gwaltney Gibson, Mark A. Wilson, and James F. Woods) volunteered to sit on the Work Taxonomy and Classification Subcommittee (see Appendix A). Mark A. Wilson was nominated and serves as Chair of the subcommittee. At the close of the second Panel meeting (4-29-2009), Panel member James Woods resigned from the Panel but continued working with the subcommittee until the completion of an initial proposed work taxonomy by the subcommittee that was presented in a fact finding session immediately prior to the third Panel meeting (6-9-2009).

Assumptions of the Work Taxonomy and Classification Subcommittee

In nearly every effort like that undertaken by this subcommittee, a number of assumptions are made which help guide the actions taken to achieve the goals. Not infrequently, those writing about their efforts fail to make clear their assumptions which can lead to difficulty in understanding the logical basis of recommendations. We have identified twelve assumptions which have guided our efforts on behalf of the OIDAP. We consider the validity of many of these assumptions to be self-evident to those who have studied the occupational information needs of SSA, and accordingly need no further explanation or defense.

In those cases where the validity is not self-evident, it is hoped that other sections of this report will provide the information needed to convince the reader that the assumption is indeed valid. What follows is an enumeration of the major assumptions under which this subcommittee carried out its work.

1. The occupational information system (OIS) and the work taxonomy on which it is based will be challenged when it is implemented and will need to be able to be defended successfully. One key component of defensibility is that the process of development for the new OIS be as

transparent as possible from inception to completion (e.g., the public meetings of the OIDAP).

2. Change on the order of what is envisioned necessary to develop a new OIS will be threatening to various constituents who play a role in the disability determination process, and produce resistance to such change. Even positive and necessary change can inspire resistance and suspicion of motives. Individuals who have had an opportunity to share their concerns and offer suggestions for change tend to respond to change more positively. An open source approach to change should help ease the transition process to a new OIS.

3. Many of the terms in job, work, and occupational analysis are used by various professional fields in different ways, which may lead to confusion and communication problems as the new OIS is designed and implemented. Development and promotion of a common language of occupational analysis across professions through social media technology will be important to minimize miscommunication.

4. A large-scale nationwide occupational analysis at the level of what workers actually do in the economy will be of interest to a number of individuals, institutions, and agencies that have no direct interests in disability determination; such interests may seek to broaden the scope of applications that the new OIS will address. The cost and effort associated with OIS development on the scale envisioned by SSA is such that others may seek to leverage our investment to meet needs that may have little to do with disability determination. The fact that the new OIS must be optimal for allowing SSA to meet its disability determination needs must be acknowledged as “job one,” and the design and implementation of the new OIS must be fully consistent with that goal.

5. An OIS designed for the purposes of disability determination should not include any unnecessary or redundant information. Given the scale on which the desired information is to be collected unnecessary or redundant information would represent substantial wasted effort and increased costs. Such information could also serve to distract the decision maker from relevant information if it were included in a new system leading to potential inconsistencies.

6. An OIS that is specifically designed for the purposes of disability determination will better and more accurately serve the needs of the users than a system that was designed for other purposes. The occupational information requirements of the SSA are unique when compared to the occupational information needs of most other organizations. The

specificity of descriptors and the scales used to evaluate those descriptors in the new OIS must be developed with a clear understanding of, and support for, the occupational information needs of the agency.

7. Regarding the title taxonomy that will underlie the job-side of the new OIS, an OIS that is designed for the purposes of disability determination must describe work at the level at which individuals perform work in the economy: that is, the job or occupation (analogous to the occupational titles in the *Dictionary of Occupational Titles (*DOT) taxonomy). More abstract taxonomic units for describing work do not provide the detailed information needed to determine whether a claimant is no longer able to perform work as it exists in the economy. More abstract title taxonomies that combine jobs that perform significantly different work activities (or perform them under significantly different conditions) also lack the face validity needed to convince consumers of the information that the system is fair and accurate.

8. An OIS designed for the purposes of disability determination must comprehensively describe all work that exists in nontrivial numbers in the economy. SSA is required to review all claims of disability regardless of the work of the claimant and the frequency with which the work occurs in the economy. A work taxonomy that fails to describe all work as it exists in the economy would not meet the occupational information needs of the SSA.

9. Job titles provided by job incumbents often tell an analyst little about what a person actually did in previous jobs, and jobs may change over time (while the job title remains the same). The same work in different organizations may be identified by very different job titles. Any new OIS must accurately and comprehensively describe what the incumbent actually does, rather than rely on potentially arbitrary and confusing job titles to infer worker requirements.

10. A new OIS should be based on current scientific standards of work analysis. The field of work analysis has progressed rapidly in the slightly over 100 years it has been in existence (Wilson, 2006). A system designed today based on current scientific standards may look quite different than one that was designed during the height of the industrial revolution.

11. In those areas where not enough prior scientific research information is available to guide development of the new OIS, empirical research studies will need to be conducted to provide a defensible basis for making informed decisions. Because projects involving large scale nationwide

occupational analysis focused on describing what workers actually do on the job have not been done (or kept current) for decades, there are many unknowns that will need to be investigated.

12. The design process of a new OIS will be iterative, such that the final OIS may look very different from the initially proposed OIS. Soon after SSA's initial field studies in occupational analysis are completed the agency will know more about many occupational analysis research issues than what currently exists in the scientific literature. This new information will most likely lead to changes in the design of SSA's OIS over time, as well as how it is used. This is particularly the case with respect to the ways in which job-side information in the new OIS is linked to person-side assessments (e.g., the physical and mental RFC process) and decisions (e.g., Step-Five Transferable Skills Analysis (TSA) judgments). In comparison to the current DOT-based processes, considerable room for improvement exists with respect to the defensibility and utility of the linkages that exist between the job- and person-side aspects of the disability content model. We anticipate that the results of the empirical validation studies that will be conducted as part of the work involved in developing the new OIS will be critical in determining the final characteristics of the new OIS, and the ways in which the information in the OIS is applied when making person-side decisions during the sequential evaluation process.

Procedures

The Work Taxonomy and Classification Subcommittee of the OIDAP engaged in a number of activities in order to accomplish their task of providing the Panel with work taxonomy advice. A timeline and description of activities carried out by the Subcommittee is provided in Appendix B. As can be seen in Appendix B, the activities of the Subcommittee involved attending and presenting at public meetings, conducting fact finding visits and interviews, and evaluating existing empirical work taxonomies. Each of these activities is described in more detail below.

Public Meeting Activities – The OIDAP held three public meetings and two public teleconferences. Agenda for all the public meetings and teleconferences is presented in Appendix C. A review of Appendix C reveals that the public meetings have involved numerous presentations and demonstrations by various experts and interested parties both within and outside of SSA. Every aspect of the disability determination and adjudication process was reviewed in

considerable detail for Panel members. In almost all cases, Panel members were able to ask those making presentations questions and in some cases to deliberate following presentations.

At the first meeting during Panel deliberations the need for a subcommittee of the Panel to focus on work taxonomy issues was identified and the Work Taxonomy Subcommittee was formed. As the Panel's recommendations for Fiscal Year 2009 were considered, the subcommittee's scope was consistent with OIDAP's need to also encompass the needs of the OIS's classification. Therefore, in April, 2009, the subcommittee's scope was expanded to include recommendations regarding the occupational classification structure. At the inaugural meeting, the Panel reached consensus that, for the purposes of disability determination, SSA would need to collect job side occupational information at the level of specificity identified as Level 2 in Figure 1.

The Work Taxonomy and Classification Subcommittee Chair made a presentation at the second Panel meeting on behalf of the subcommittee outlining a number of basic work analysis issues along with a proposed method for identifying a work taxonomy (see Appendix D for the slides from the presentation). During questions after the presentation and subsequent Panel deliberations, members of the subcommittee answered questions and further explained the proposed process for identifying an initial work taxonomy for use in an occupational information system.

At the third public meeting and the public teleconference the Work Taxonomy and Classification Subcommittee Chair provided updates on the subcommittee's activities and answered questions from other Panel members concerning how the envisioned work taxonomy would be used to analyze work as performed in the economy. Many of these questions concerned the relationship between information provided in the DOT and the types of information that could be expected to result from an operationalization of the results of the subcommittee's work taxonomy recommendations.

More specifically, several questions concerned the types of specific measures or items that might result and how these would be related to specific types of information found in the DOT. The response to these questions was that the initial work taxonomy as envisioned by the subcommittee would describe occupational information that could be presented to end users in formats similar to DOT job descriptions, and that the information produced would be based on more defensible and modern scientific methods.

The Work Taxonomy and Classification Subcommittee found the public meetings to be a valuable source of information on many issues that need to be addressed and helped the subcommittee gain an appreciation for the complexity of the

process. The presentations and discussions saved time and provided direction for the subcommittee's activities. Some of the assumptions listed above and findings and recommendations listed below resulted from information gained in these public meetings.

However, both authors of this report felt that it was important to take a scientist-practitioner approach to the work of the subcommittee. An important aspect of this approach is to directly observe the phenomenon you are trying to understand where and when it takes place. Thus, the subcommittee requested and received permission to conduct fact finding visits and interviews with individuals who were directly involved in the disability determination process and the use of occupational information.

Fact Finding Visits and Interviews – In order to gain a greater understanding of how occupational information is used in the field by various parties involved in the disability determination process several site visits and interviews were conducted. The purpose of these efforts was to provide direct contact between the various "end users" in the disability determination process and the authors of this report. As can be seen in Appendix B site visits were made at a Raleigh, North Carolina Disability Determination Services and the Office of Disability Adjudication and Review, and the Falls Church, Virginia National Hearings Center. During the visits several administrative law judges, appeals judges, and disability examiners were individually interviewed. In addition, site visits were made to interview vocational experts (VEs) and claimant representatives in their offices or near their work place. Other members of the OIDAP (Mary Barros-Bailey, Nancy Shore) assisted the subcommittee Chair in setting up these interviews with non-SSA personnel.

The primary purpose of the individual interviews was to learn how the individuals used occupational information in their jobs, what they liked and disliked about currently available occupational information, and what their ideal OIS might contain. The sole purpose of these interviews was to provide more information regarding the real world use of occupational information. In every case, those being interviewed were told that their comments would be held in confidence Interviewees were also given brief descriptions of some of the key potential recommendations regarding the design and possible content of the new OIS and all reacted quite favorably.

During the course of public meetings and fact finding visits and interviews a number of concerns were expressed to the OIDAP and the Work Taxonomy and Classification Subcommittee by various individuals. Many of the concerns were expressed on multiple occasions by different individuals. Whenever the concern

was related to Work Taxonomy and Classification Subcommittee areas of interest we made note of the concerns. Appendix E is our attempt to provide a comprehensive list of the primary concerns expressed concerning work taxonomy related issues. These concerns help guide some of the recommendations made by the subcommittee.

In addition to the end user visits and interviews described above, the Work Taxonomy and Classification Subcommittee Chair attended two National Academy of Sciences (NAS) meetings in Washington, DC. Currently, the NAS is conducting a scientific review of the Department of Labor's O*NET project. O*NET is the Department of Labor's replacement for the DOT. The subcommittee Chair attended these meetings to be aware of the public testimony made by various occupational experts and end users on the positive and negative aspects of the O*NET. At the writing of this report the NAS had not released a report detailing its assessment of O*NET. However, attendance at these meetings was helpful in determining some of the findings and recommendations in this report (see next section for more detail).

Existing Empirical Work Taxonomy Evaluation – The primary task of the Work Taxonomy and Classification Subcommittee at this stage of the process of developing the new OIS is to provide the OIDAP with guidance and recommendations on the content and operationalization of the job side of Figure 1 so that it could be used as part of the OIDAP's recommendation of a content model for the new OIS. Our initial efforts toward this goal involved a consolidation of existing empirical work taxonomies and the evaluation of potential taxonomies for their sensitivity to various person side constructs proposed by other OIDAP subcommittees. The first activity (consolidation of existing work taxonomies) seemed the best approach for identifying an initial work taxonomy to serve as the stimulus for the development of specific work activity descriptors (items). That is, the work taxonomy can be thought of as on overarching framework (Level 4) of specific work activity descriptions (Level 2). The second activity was to determine the likelihood that job descriptions based on the new OIS would provide various decision makers with enough information to make inferences about the person side dimensions that were required by the work. Each of these activities is described in more detail below.

Existing Taxonomy Consolidation - How does one go about identifying a work taxonomy that can be used to classify and study all work in the economy at the level of what is actually done by workers? Are there existing taxonomies that can be adopted as is or modified for the needs at hand? Because we feel it is important to have some empirical basis for our recommendations the answer to the second question is a clear "no."

That is, in our assessment no existing *empirical* work taxonomy has been shown to describe all work in the economy, as it is performed by workers, and to do so in a fashion that possesses the technical adequacy and legal defensibility needed by SSA in its disability programs. The DOT was used for this purpose for many years, but the DOT was never developed to be optimal for disability applications, and its rated job- and worker-side taxonomic elements suffer from significant psychometric limitations due to their reliance on abstract "holistic" judgments to rate most of the work and worker requirements it describes. The fact that the DOT descriptions contain substantial amounts of information that is customized to each rated occupation further limits its ability to make empirical (as opposed to rational) determinations regarding the work activities required of a given occupation, or particularly, to make meaningful comparisons between task-dissimilar occupations (e.g., for TSA purposes).

There have been several attempts at the development of empirical work taxonomies to describe the nature and structure of the job-side world of work. With the exception of the O*NET, none have ever been used to classify all work, and many are specifically focused on certain types of work. In the case of O*NET it achieved this goal by not describing work as actually done by workers, but rather by describing work at the much more abstract occupational unit level of analysis. It should not be too surprising that no sufficiently comprehensive empirical work taxonomy and database now exists, and given the enormous resources required to carry out the activity, perhaps only the government is capable of completing the task. Because we could identify no existing taxonomy that we felt was adequate, we chose to address the first question by identifying a number of less comprehensive empirical work taxonomies, examining them for similarities, and consolidating them into an initial proposed work taxonomy.

Appendix F provides a list of the eleven work taxonomies that were identified after a search of the empirical literature. A review of this list will reveal that some of these taxonomies are more focused (managerial work, professional work, cognitive work) and many are more general. The hope was that by including a number of well developed empirically based efforts in work taxonomy we would be able to identify all potential taxonomic work dimensions through a comparison of the dimensions that compose each of the taxonomies.

Appendix G provides a list of the dimensions associated with each taxonomy. The process of identifying an initial work taxonomy for use by the OIDAP involved all three members of the Work Taxonomy and Classification Subcommittee engaging in a comparison and sorting exercise. The task was simple; each member was to create one list of dimensions out of the eleven lists by sorting the same or similar dimensions together using a spreadsheet. Because the Common Metric Questionnaire (CMQ) had the largest number of dimensions (d = 42) each member began with the CMQ and sequentially

compared each of the taxonomies until one unique list of dimensions was achieved.

The results of this exercise are found in Appendix H. A consensus meeting was held where the three member of the committee met to discuss the individual lists and create one common list. To aid in the consolidation process each dimension was labeled as being indicative of Data, People, Things, or Other. This process produced an initial consolidated list and a final consolidated list (see Appendix H). The final consolidation list was shared with several Panel members at a fact finding session prior to the third OIDAP Panel Meeting, and discussed during the public Panel meeting, after which the Panel gave the subcommittee its comments.

Initial Taxonomy Person Side Sensitivity – To determine if the initial taxonomy would be able to provide information necessary to infer the requirement of various person side dimensions of physical, cognitive, and interpersonal work demands each member of the Work Taxonomy and Classification Subcommittee rated each of the work taxonomy dimensions for its likelihood of providing information necessary to infer the presence of four cognitive/interpersonal dimensions and four physical dimensions. The ratings for each subcommittee member and the consolidated ratings of all subcommittee members are provided in Appendix I.

As can be seen from a review of Appendix I, considerable agreement was obtained that the proposed initial taxonomy would be sensitive to potential person side taxonomic elements. Appendix I was shared with several Panel members at a fact finding session prior to the third OIDAP Panel Meeting, discussed during the public Panel meeting and comments were received from several Panel members. It is important for the reader to note that the eight person side dimensions used for this exercise were identified by the Work Taxonomy and Classification Subcommittee due to the fact that the Physical Demands and Mental/Cognitive Demands Subcommittees had not completed work on their person side taxonomies at the time this exercise was carried out. That being said, the Work Taxonomy and Classification Subcommittee is confident that because of the comprehensive nature of the initial work taxonomy identified similar results would likely be found with other person side taxonomic dimensions.

Findings and Recommendations

The findings and recommendations of the Work Taxonomy and Classification Subcommittee are contained in Table 1. As can be seen the findings and recommendations are broken down into four categories (Existing Systems, OIS

Design and Development, OIS Data Collection, OIS Maintenance). Findings represent the professional opinion and conclusions of the report authors based on the activities described in this report and the relevant scientific literature when cited. Recommendations represent proposed actions by the report authors that are necessary for SSA to successfully bring a new OIS into existence and keep it up-to-date.

In many cases the findings and recommendations need no further elaboration beyond that provided in Table 1. Several paragraphs below describe the final deliberations and actions of the Work Taxonomy and Classification Subcommittee of the OIDAP and are organized by the same four categories used in Table 1. After reviewing the findings and recommendations this section of the report ends by returning to Appendix E and discussing the relationship between the concerns expressed in Appendix E and the Findings and Recommendations of this report.

Existing Systems – The previous section of this report foreshadowed, and Table 1 confirms, that the Work Taxonomy and Classification Subcommittee does not find any existing work taxonomy, empirical or otherwise, sufficient for the purposes of developing a job side work taxonomy for a new OIS. In public presentations to the Panel the SSA has detailed a number of concerns concerning the Department of Labor's replacement for the DOT, the O*NET. We agree with those concerns. As with its predecessor, the O*NET is currently under review by the NAS. Presentations made at the public meetings of the NAS (Harvey, 2009) offered criticisms of O*NET that were very similar to criticisms offered by Miller, Treiman, Cain, & Roos (1980) of the DOT ("In particular, consideration should be given to the development of factor-based multiple-item scales, the use of which would go a long way towards overcoming the reliability problems identified in Appendix E and summarized in this chapter," p. 195.). We agree with Miller, et al. (1980), and make suggestions for how to carry out their advice in the next paragraph of this report (see also, Cain & Green, 1983; Geyer, Hice, Hawk, Bose, & Brannon, 1989; Gibson, Harvey, & Harris, 2007).

OIS Design and Development – This section of the table describes the proposed content and procedures for the design and operationalization of a new work taxonomy to serve as the foundation of a new OIS. A key element of this section of the Findings and Recommendations is the Proposed Work Taxonomy Dimensions contained in Table 2. A comparison of the dimensions listed in Table 2 to the "Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source

Sorted by Data, People, Things, and Other Rational Categories" found in Appendix H will reveal two important changes.

The first change is that the physical taxonomy dimension recommendations from the Physical Demands Subcommittee of the OIDAP have taken the place of the previous physical dimensions that were included in the taxonomy. Thus, the Work Taxonomy and Classification Subcommittee has integrated the recommended physical dimensions from the Physical Demands Subcommittee into its Proposed Work Taxonomy Dimensions listed in Table 2. The thoughtful reader may wonder why the taxonomy of the Physical Subcommittee was integrated into the work taxonomy while the taxonomy of the Cognitive and Interpersonal Subcommittee was not. The primary reason deals with the issues of abstraction and ability to observe. The Physical Taxonomy is concrete, behavioral, observable, and has historically been included in work taxonomies. The Cognitive Interpersonal Taxonomy is abstract, unobservable, and has historically been inferred from examining work descriptors. The second change is that the Standard Occupational Classification (SOC) categories were integrated into the taxonomy resulting in one additional new dimension. The advantage of having a taxonomy that can be linked back to the SOC is that a number of government occupational information data collection efforts are based on the SOC. Thus, linkage to the SOC will allow potential crosswalks to those systems with less effort.

The other two recommendations involving design and development deal with hosting an online community and internalizing substantial expertise into the agency. There is a vast community of professionals who have significant practical experience with work measurement issues in disability cases who may have suggestions for how the taxonomy proposed in Table 2 should be operationalized. Whatever instruments are developed will need to be altered from time-to-time as work changes. Developing an online community of registered experts and providing them with a place to propose and discuss ideas about work measurement issues would both involve users in the development process and provide SSA with a quick means of gauging utility from end users.

The scale of the work analysis that is proposed for the nation's two largest disability programs is such that we can think of no other entity other than SSA that is capable of carrying it out. The use of occupational information for disability determination purposes is a core task of the agency. The agency will need to develop expertise internally to carry out this core task as it collects and analyzes information about work that has never before existed on the scale needed by SSA. Because of the changing nature of work and the need for keeping the OIS accurate there will be ongoing need for expertise in these areas. The agency will need to put procedures and policies in place to establish the independence and scientific credibility of this unit.

OIS Data Collection – A work analysis project of this size has to start somewhere and beginning with an attempt to analyze all work does not seem to be advisable given some of the unknowns. By beginning with a pilot study that involves those jobs most commonly encountered by the agency a prototype system can be developed that can be used to evaluate systems, involve various user communities, and provide the basis for evaluation of the data collection process. One attractive element of the pilot study approach is that more job descriptors can be evaluated than would be the case in a system designed to describe all work because relatively few jobs would be involved.

This approach also allows for the comparison of various potential sources of work analysis information and sharing the results of the pilot study with the scientific community will stimulate new research of potential interest to the SSA. The transition from pilot study to operationalization of an operational OIS should focus on efficient use of work descriptor items that can be reliably rated, verified through observation for validation purposes, and provide maximum information for carrying out the person side linkages to work.

OIS Maintenance – Not that much is known, other than anecdotal reports, concerning how frequently work changes. Clearly, technology and innovation bring change to work but does this change always result in significant alteration of how the work is performed? Do all jobs change at the same rate and what is the best procedure for identifying when work has changed? There is very little longitudinal data to provide the answers necessary to keep an OIS up to date. By developing an online community of users and random audits of existing job descriptions the SSA can begin to answer these questions. As technology and innovation continue, existing job descriptors will need to be modified from time-to-time to describe currently unimaginable types of work.

Concerns – A review of the purpose of the Work Taxonomy and Classification Subcommittee will reveal that several of the concerns listed in Appendix E fall outside of the subcommittee's scope. This is particularly true for the concerns related to database design and reporting. However, we wanted to list all the OIS related concerns that we identified during our fact finding because we thought they would be of interest to SSA and because our recommendations directly address some of the concerns. We feel that our recommendations clearly address the need for work information that is up-to-date, complete, and accurate. We feel the methods recommended represent current scientific standards of work analysis and do not involve the attempts to measure constructs that are too

abstract. The means by which the suggested work taxonomy was developed and the inclusion of the suggestions of the Physical Demands Subcommittee's taxonomy should provide the stimulus necessary to develop the specific work measurement items desired in a new OIS.

Conclusions

We feel that the findings and recommendations listed in Table 1 provide a solid foundation for designing, measuring, and maintaining usable descriptions of work. If followed, this plan will produce work descriptors that are based on ratings collected at the appropriate level of specificity (Level 2) for the desired application (as necessary, more abstract Level 3-5 job-side descriptors can be derived using empirically defensible methods from the more-detailed Level 2 ratings). Our findings and recommendations are meant to provide guidance on how SSA might go about building a complete system for the purpose of occupational analysis rather than simply what type of occupational information needs to be studied.

We have identified two potential sources (incumbents and analysts) of information, and a procedure to compare sources (although prior research strongly suggests that analysts will be required in order to collect ratings having the highest quality and defensibility). Given the scale of the effort, we have assumed that the mode of data collection will be online computer administered questionnaires. Most important, we feel the plan will result in work analysis results and job descriptions that are defensible because they will be demonstrably reliable, valid, and specifically designed for the disability determination process.

If the new OIS cannot be shown to be composed of work analysis data that is reliable and valid, any subsequent decisions based on the system will be justifiably questioned. As we made clear in our very first assumption, we believe the work information generated from any new work analysis effort will be subjected to vigorous challenges. Although the new OIS needs to accomplish several important goals for SSA, if it is not a defensible system capable of withstanding challenges it will be of little use to the agency.

By building an internal unit to carry out the recommendations, by providing the unit with a means of generating and communicating with an open source community of interested users and researchers, by encouraging outside research based on the data that is collected, and by designing procedures to keep the

information up-to-date, the defensibility of the resulting OIS will be greatly enhanced. Given the circumstances we identified in our fact finding and public meetings we feel that these recommendations comprise the most acceptable choice given SSA's needs, the existing scientific literature, and the practical constraints under which the new OIS must be collected and updated.

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*Note: Indicates Articles that Describe a Taxonomy Included in the Work Taxonomy Consolidation Exercise

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Glossary

Common Metric – a taxonomy of job descriptors which can be applied to all jobs thereby allowing comparison of work behaviors across all jobs.

Content Model – a framework that identifies all of the important elements of some whole – those things which should be measured or delineated. For SSA purposes, an initial content model for the world of work is proposed that identifies those aspects of work which are behavioral, observable, and defensible descriptors of work as it is performed. Similar content models must be developed for the "people" side of the disability determination process; ones that delineate what cognitive and physical requirements are appropriate to measure for purposes of comparison to the behavioral requirements of work as it is performed.

Cross Job Relative – work descriptors that are written at a level of specificity which allows them to be applied to all jobs.

Decomposed Rating – rating of observable (Level 2 or 3) parts of a construct for purposes of analysis as opposed to rating a whole occupational construct or trait (Level 5 or 4) on some metric. See also *Holistic Rating*.

Defensibility – the degree to which conclusions will be upheld by the courts; this is typically determined by the degree to which they are supported by statistical evidence of reliability and validity. Also of importance for SSA is the degree to which conclusions are "acceptable," meaning that they do not result in adverse impact and possess face validity.

Dimension –job-related information that is presented at the Level 3 or 4 abstraction. It is the stimulus used for generating items that would actually measure the job related behaviors of interest.

Holistic Rating – rating of a whole occupational construct or trait (Level 5 or 4) on some metric, as opposed to separating said activity into its observable (Level 2 or 3) parts for purposes of analysis. See also *Decomposed Rating*.

Inferential Leap – the degree to which one determines the attributes of something which are not directly observable. In occupational analysis it typically refers to making judgments about attributes of the person based upon

observable requirements of a job. The goal is to minimize the inferential leap through the documentation of observable work requirements.

Generalized Work Activity – set of general work behaviors that apply to all jobs, and that one can describe all jobs in terms of how much of each of these general work behaviors are involved, more behaviorally and technologically abstract than tasks.

Item – a question written to obtain information regarding whether or not a specific behavior or characteristics is associated with performing an occupation. Examples may include items that measure the frequency, duration, or height of lifting for a particular job.

Job Side – attributes of work that are inherent to the job itself; these attributes are observable activities that the job requires regardless of the individual who fills a position.

Level 1 / Level 2 – job related information that is behaviorally specific and observable. Level 1 data is frequently referred to as “task” data because it is specific only to a single job of interest; hence, it is not appropriate for making comparisons across job titles. Level 2 data, while slightly less specific, can be rated both reliably and validly; it represents a level of aggregation that is cross-job relative and desirable for SSA’s purposes.

Level 3 / Level 4 / Level 5 – job related information that is too abstract to be reliably rated or validated as observable aspects of work. This level of data is appropriately obtained through statistical aggregation of Level 1 / Level 2 data. Level 4 data may be construed as an overarching framework that groups the more specific activities typically described as Level 2 data.

Person Side – attributes of the person that are needed to successfully fulfill the requirements of an occupation

Reliability – at a conceptual level, the degree to which a measure is free from random errors of measurement. At a practical level, reliability is often inferred from measures of the consistency seen across a set of scores or ratings of some attribute. With regard to occupational analysis, it is reflected in the degree to which two independent raters provide ratings of work attributes which are similar.

Skill – the learned capacity, based on one's knowledge, prior practice, aptitude, training, education, etc., to perform a given psychomotor activity or function. For example, someone may have typing skills, wood-working skills, or word processing skills).

Task – a highly specific descriptor of work which is not cross-job-relative. A task statement usually includes a single action verb, is directed toward a single objective, and is based upon observable characteristics of the work.

Taxonomy – a classification scheme used to organize characteristics of workers, the work itself, or the job titles workers are assigned (as they exist in the economy). Several types of taxonomies are relevant to this project, including taxonomies describing the structure of the job- and person-sides of Figure 1, as well as title taxonomies describing the structure of jobs and occupations (work as it is performed in the economy).

Taxonomy (empirical) – a classification scheme that is derived from experimental analysis. In occupational analysis, it is a taxonomy that was derived by subjecting large quantities of data to statistical factor analysis and using the resulting structure.

Taxonomy (rational) – a classification scheme based upon reason or human judgment; a "common sense" approach to describing occupations. Rational taxonomies may be validated via empirical methods.

Validity – the degree to which inferences are appropriate based upon the interpretation of data. Determinations of validity are usually based upon three types of evidence: content (the degree to which something measures the entire – or an adequate representative sample – domain of behaviors to be examined), criterion (the degree to which some an instrument is appropriately predictive of a criterion of interest), and construct (the degree to which inferences about unobserved variables can be made on the basis of observed variables).

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Table 1—Findings and Recommendations of the Work Taxonomy and Classification Subcommittee of the OIDAP

Number	*Findings and Recommendations*
	Existing Systems
F1ES	*Finding*: The DOT in both content and procedure does not represent state-of-the-art occupational analysis technology. Further, it is out-of-date, and methodologically flawed (due to its reliance on holistic ratings of abstract job- and person-side constructs) resulting in data having unacceptable reliability and validity (e.g., Miller, Treiman, Cain, & Roos, 1980). The effort and resources required to "fix" the DOT would presumably meet or exceed those necessary to develop an entirely new OIS specifically designed to meet SSAs needs, and even if resources were made available to update the DOT database, such information would still be decidedly sub-optimal with respect to meeting SSA's specific needs in terms of both technical adequacy (e.g., for TSA determinations) and legal defensibility (given the inherently unverifiable holistic rating procedures used to make its common-metric ratings).
R1ES	*Recommendation*: SSA should develop an occupational information system that targets SSA's legal, program, and technical needs for its disability programs in the 21st century, rather than update the DOT.
F2ES	*Finding*: The O*NET does not describe work at the level at which it is actually done by workers in the economy, does not included constructs important to the disability determination process, and like the DOT relies, on collecting data via the direct holistic rating of abstract occupational constructs and traits. The effort and resources required to "fix" the O*NET meet or exceed those necessary to develop an entirely new OIS specifically designed to meet SSAs needs.
R2ES	*Recommendation*: SSA should develop an occupational information system that targets SSA's legal, program, and technical needs for its disability programs in the 21st century, rather than update the O*NET or develop methods for using O*NET data to estimate DOT-type constructs (e.g., SVP, Strength).

Table continues

OIS Design and Development	
F1ODD	*Finding*: No existing work taxonomy (specifying either the structure of work activities or occupational titles) meets the needs of the SSA for disability determination purposes.
F2ODD	*Finding*: There is little empirical research that has involved occupational analysis on the scale of the entire economy to guide our efforts, but some empirical work taxonomy efforts have been reported in the scientific literature.
F3ODD	*Finding:* The current level of technology in common metric work analysis is more than sufficient to meet the OIS needs of the SSA and current SSA staff includes a nationally recognized expert with demonstrated competence in carrying out large scale work analysis.
R1ODD	*Recommendation*: A new OIS should be developed based on the work-activity taxonomic dimensions listed in Table 2. More specifically, the dimensions listed in Table 2 should serve as the stimulus for the development of multi-item scales meant to measure each dimension listed in Table 2. The item development process should commence without delay.
R2ODD	*Recommendation*: The SSA should host a web based community where registered experts from several different disciplines can review the dimensions listed in Table 2, suggest potential items for inclusion, comment on suggestions from others, and on any proposed work measurement instrument as it becomes finalized. Three primary criteria for items should be that they are behavioral, observable, and measurable. This community should be maintained after the OIS has been established to identify new items or scales that need to be added as the world of work changes.
R3ODD	*Recommendation*: The SSA should develop its own internal unit devoted to OIS Design and Development, OIS Data Collection & Analysis, and OIS Maintenance. The purpose of this unit will be to integrate suggestions from the web-based community, provide their own expertise and suggestions for OIS development and maintenance, and to advise SSA on the numerous technical matters related to OIS utilization. The unit needs to include experts in common metric work analysis, labor economics, and SSA employees experienced in internal project management. The use of occupational information for disability determination purposes is a core task of the agency. SSA, has, and will need to increase its internal work analysis expertise to carry out this core task as it collects and analyzes information about work that has never before existed on the scale needed by SSA. Because of the changing nature of work and the need for keeping the OIS accurate, there will be ongoing need for expertise in these areas. The agency will need to put procedures and policies in place to establish the independence and scientific credibility of this unit.

Table Continues

OIS Data Collection & Analysis	
R1DCA	*Recommendation*: Once multi-item scales have been identified for each dimension listed in Table 2 that SSA considers relevant for its purposes, SSA should immediately conduct a pilot study involving the most frequently seen jobs of claimants and the most frequently recommended jobs for those with residual functional capacity. This pilot study should capture at least 95% of the most frequently seen and recommended jobs and should scale each item in terms of both frequency of occurrence on the job and duration of performance. Finally, we feel that, barring any delays due to external reviews, the entire pilot study can be carried out over an eighteen month period.
R2DCA	*Recommendation*: The SSA should train existing Experts in the new OIS and use them as a source to provide job level data for the pilot study. The SSA should also provide job incumbents with the opportunity to provide job level data in the pilot study and compare the quality of results from the two sources. As part of this study, a further examination of the performance and suitability of direct holistic ratings of abstract work characteristics should be included. Although past research has strongly suggested that holistic ratings cannot provide data of adequate reliability, validity, and accuracy, it is nevertheless important to further establish the correctness of this conclusion with respect to the specific types of data collection instruments SSA will use to collect the new OIS (both on the job- and person-side of the OIS content model).
R3DCA	*Recommendation*: The SSA should evaluate the pilot study data for utility (does it provide the information needed by the users in the system), reliability (inter-rater), and validity (confirmation of job descriptions generated by the OIS through direct observation, and convergence with expert validated job profiles).
R4DCA	*Recommendation*: The SSA should use the pilot data to generate prototype occupational analysis reports and computerized systems to access the information for the purposes of usability analysis.
R5DCA	*Recommendation*: The SSA should host a web-based community where registered users will be provided access to the occupational analysis data collected by SSA for scientific research purposes. The hope is to encourage the development of an independent scientific community devoted to understanding occupational analysis issues using a common metric of description. Not only will this allow for independent verification of SSA internal studies but it will most likely result in the development of a number of applications that have nothing to do with disability determination.

Table Continues

OIS Data Collection & Analysis *(cont'd)*	
R6DCA	*Recommendation*: The SSA should use the results of the pilot study to refine the items and work taxonomy using existing psychometric principles prior to launching a data collection effort targeted at capturing all work in the economy.
R7DCA	*Recommendation:* The SSA should develop a plan to sample work from all jobs in the economy. There does not seem to be any easy means to identify what a sample that included all jobs would include. Perhaps the best source to begin the development of the sample would be the 12000+ titles listed in the DOT. Both research and expert online communities should be provided with the initial list for purposes of suggesting additions and deletions from the list. The data from the operational OIS should be subjected to the same type of evaluation criteria as the pilot study. The data from the operational OIS, like the pilot study data, should be shared with the scientific community via the web-based community.
R8DCA	*Recommendation:* Once a large database representative of all work in the economy has been obtained, the SSA should examine various methods of job classification based on the common metric of descriptors employed in the new system. By basing job classification on a common metric of descriptors the agency will avoid the inaccuracy problems associated with job classification systems based on job titles.
Table Continues **OIS Maintenance**	
R1M	*Recommendation*: The SSA should host a web based community where registered users can comment on the quality and accuracy of the operational OIS data. The idea is that experts are most likely to identify when information has become dated and needs to be updated.
R2M	*Recommendation*: The SSA should regularly and randomly select jobs in the operational OIS for audits to ensure that they remain up-to-date and establish an "expiration date" for job level descriptions.
R3M	*Recommendation*: The SSA should periodically review the OIS for items that may no longer be useful and for the absence of items that may be needed. This process will be useful in identifying changes in work content not reflected in the existing items that may be emerging in the economy.

Table Continues

Table 2—Proposed Work Taxonomy Dimensions

Taxonomic Source	D/O/P/T	Consolidation of Dimensions Sorted by Data/Other/People/Things
CMQ	D	Managerial Decision Making: Acquire/start/sell businesses
CMQ	D	Managerial Decision Making: financial
CMQ	D	Managerial Decision Making: prods/services, higher impact
CMQ	D	Managerial Decision Making: products/services, lower-impact
CMQ	D	Managerial Decision Making: strategic planning, entire org
CMQ	D	Take info, orders, interview
CMQ*	D	info/decide/resolve: High-level
CMQ*	D	info/decide/resolve: Lower-level
CMQ*	D	info/decide/resolve: mid-level
CMQ*	D	info/decide/resolve: Prof/tech
CMQ*, O*NET*,SOC*	D	Computer Language use/programming
CMQ, O*NET*,SOC*	D	Tech/scientific/computers-machines
GWI	D	Stock keeping/Bookkeeping
O*NET	D	Estimating the Quantifiable Characteristics of Products, Events, or Information
O*NET	D	Evaluating Information to Determine Compliance with Standards
O*NET	D	Judging the Qualities of Objects, Services, or People
O*NET,SOC*	D	Scheduling Work and Activities
O*NET	D	Updating and Using Relevant Knowledge
OAI	D	Biological Testing/Inspection Activities
OAI	D	Environmental Planning and Maintenance
OAI	D	Technical Planning and Drawing
OAI, GWI, O*NET,SOC*	D	Utilization and Processing of Numerical Data
OAI, WAP*,SOC*	D	Routine Clerical & Administrative Activities
PAQ	D	Attentive/discriminating work demands

Table Continues

Table 2—Proposed Work Taxonomy Dimensions *(cont'd)*

Taxonomic Source	D/O/P/T	Consolidation of Dimensions Sorted by Data/Other/People/Things
PCTAQ*	D	Individual/Job-Related Decision Making
PCTAQ*, O*NET*	D	Individual/Job-Related planning
CMQ	O	Language use/foreign
CMQ,SOC*	O	Safety/damage to others
PAQ	O	Variable vs. regular work schedule
PMPQ	O	Relevant Experience
PMPQ	O	Special Training
PMPQ*	O	Educational Requirements
WAP	O	Hourly Pay vs. Salary
WAP	O	job-related/required APPAREL
GWI, OAP	O-Cognitive	Spatial/Object Perception & Tracking
GWI, PAQ	O-Cognitive	Perceptual interpretation
O*NET	O-Cognitive	Thinking Creatively
PAQ, OAI	O-Cognitive	Environmental awareness
PCTAQ	O-Cognitive	General cognitive info processing
PCTAQ*	O-Cognitive	cognitive attention, focus
CMQ,SOC*	O-Context	Enforcement/demanding conditions
CMQ, PAQ	O-Context	Hazardous/unpleasant work environment
GWI	O-Context	Regulated/Standardized Work
MPDQ	O-Context	Autonomy of Action
MPDQ	O-Context	Complexity & Stress
WAP	O-Context	Job Security vs. Performance-Dependent Income
WAP	O-Context	Outdoor Work
PMPQ, PCTAQ*	O-Interpersonal	Interpersonal Activities
OAI	O-Physical	Activities Related to Coordination
OAI	O-Physical	Activities Related to Balance
OTHER	O-Physical	Activities Related to Hand Function
OTHER	O-Physical	Activities Related to Manual Materials Handling
OTHER	O-Physical	Activities Related to Position Tolerance

Table Continues

Table 2—Proposed Work Taxonomy Dimensions *(cont'd)*

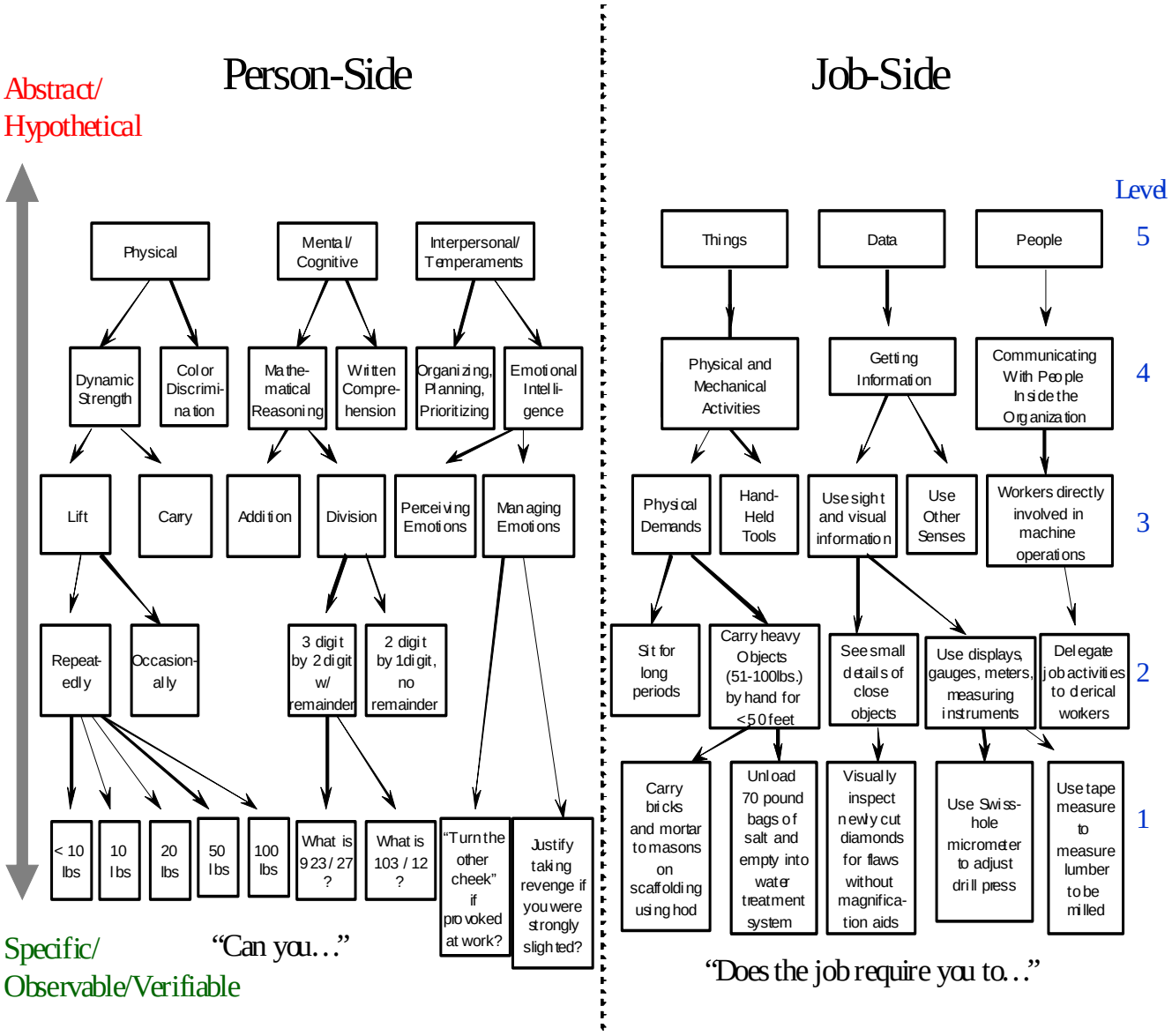
Taxonomic Source	D/O/P/T	Consolidation of Dimensions Sorted by Data/Other/People/Things
WAP	O-Physical	Activities Related to Mobility/Movement
OTHER	O-Sensory	Activities Requiring Olfactory Senses
OTHER	O-Sensory	Activities Requiring Tactile Senses
PAQ	O-Sensory	Visual input from devices/materials
PAQ	O-Sensory	Visual input from distal sources
PCTAQ	O-Sensory	Audio attention
CMQ	P	Entertain
CMQ	P	Managerial Decision Making: POM/HR higher-level
CMQ	P	Managerial Decision Making: POM/HR, lower-level
CMQ	P	MDM: Implementing
CMQ,SOC*	P	Treatment/therapy
CMQ*	P	Communication: press/media
CMQ*	P	Communication: public/customers/clients
CMQ*	P	Communication: Regulators, Government
CMQ*,SOC*	P	Communication: students/children/civic
CMQ*,SOC*	P	delegating
CMQ*,SOC*	P	Resolving conflicts
CMQ*	P	supervision: sales/service
CMQ*, OAI*, WAP*, PAQ*, MDPQ*	P	Supervision: lower-level
CMQ*, OAI*, WAP*, PAQ*, MDPQ*,SOC*	P	supervision: middle-level
CMQ*, WAP*, PAQ*, PMPQ*,SOC*	P	Communication: mid-level exchange info
CMQ, O*NET*,SOC*	P	Negotiation
CMQ, WAP*, O*NET*,SOC*	P	Persuade/sell

Table Continues

Table 2—Proposed Work Taxonomy Dimensions *(cont'd)*

Taxonomic Source	D/O/P/T	Consolidation of Dimensions Sorted by Data/Other/People/Things
MDQ,SOC*	P	Advanced Consulting
O*NET	P	Developing and Building Teams
OAI	P	Communication: Verbal
OAI,SOC*	P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others
OAI, PMPQ,SOC*	P	Instructing
OTHER	P	Communication: Written
OTHER	P	Project Management
CMQ,SOC*	T	Operating Office equipment
CMQ,SOC*	T	Operating Powered tools/equipment
CMQ, OAI*, O*NET*	T	Operating Heavy/offroad vehicles
CMQ, OAP*, WAP*, PAQ*,SOC*	T	Operating Processing/moving machines
CMQ, OAP*, WAP*, PAQ*	T	Operating Stationary machines
GWI,SOC*	T	Activities Related to Performing Arts
O*NET,SOC*	T	Activities Related to Inspecting Equipment, Structures, or Materials
OAI,SOC*	T	Activities Related to Assembly/Fabrication
OAI,SOC*	T	Activities Related to Food Preparation/Processing
OAI,SOC*	T	Activities Related to Physical Science and Technology
OAI, GWI,SOC*	T	Activities Related to Visual Aesthetics
OAI, GWI, O*NET	T	Activities Related to Electrical/Electronic Repair, Maintenance
OAI, GWI, O*NET,SOC*	T	Activities Related to Mechanical Repair, Maintenance
OAI, GWI, OAP,SOC*	T	Activities Related to Botany/Plants
OAI, GWI, OAP,SOC*	T	Activities Related to Building/Repairing Structures
OAI, GWI, WAP,SOC*	T	Activities Related to Working with Animals
PAQ	T	Activities Related to Handling/manipulating & Use of finger-controlled devices
SOC	T	Activities Related to Personal Care and Service Occupations

Figure 1— Levels of Data Specificity within the "Person Side" and "Work Side" Domains



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Appendix A—Subcommittee Members

Shanan Gwaltney Gibson, Ph.D.

Education

B.A., Liberal Arts, magna cum laude, Armstrong Atlantic State University
M.S., Industrial and Organizational Psychology, Virginia Polytechnic Institute & State University
Ph.D., Industrial and Organizational Psychology, Virginia Polytechnic Institute & State University

Areas of Expertise

Professor Gibson's expertise is in issues related to human resources management & organizational behavior in organizations. Her research includes more than 35 published conference proceedings and 19 peer-reviewed journal articles on topics relevant to human resources and organizational development including job analysis, technology acceptance in organizations, and entrepreneurship. Her research can be seen in the Journal of Small Business Strategy, Business Education Forum, Small Business Institute Forum, and Management Research News, among others.
Professional Activities
Professor Gibson is an Associate Professor of Management at East Carolina University, where she has been a member of the College of Business since 2003. Professor Gibson has extensive experience teaching issues related to occupational analysis; in addition to currently teaching graduate level Human Resources, she previously spent two years teaching Industrial and Organizational Psychology at ECU, as well as courses at Radford University and Texas A&M Corpus Christi. Professor Gibson was awarded the 2009 Robert L. Jones University Alumni Award for Outstanding Teaching and the 2009 Max Ray Joyner Award for Faculty Service Through Continuing Education. In addition to her university responsibilities, Professor Gibson currently acts as a consultant to State Farm Insurance on issues related to human resources management and leadership development. She is a member of The Academy of Management, the Society for the Advancement of Management, the Society for Industrial & Organizational Psychology, the Southeast Decision Sciences Institute, and the Southeast Institute for Operations Research and the Management Sciences.

Mark A. Wilson, Ph.D.

Dr. Mark A. Wilson, Associate Professor of Psychology, NC State University, joined the faculty in 1992. He received a B.A. in Psychology from Wartburg College (1975), an

M.A. in Experimental Psychology from the University of Missouri-Kansas City (1978), and a Ph.D. in Industrial/ Organizational Psychology from Ohio State University (1983).

While completing the Ph.D., he served as Project Coordinator, Technical Director, and Senior Research Associate for Organizational Research and Development Inc. on a comprehensive human-resource research project involving human-resource planning, job analysis, selection (managerial assessment centers), performance appraisal, and compensation for a market-leading insurance company. The experience drastically altered his view of the field and his research interests. It was while working on the project that he developed his interest in the integration of human-resource systems, comprehensive job analysis, his dedication to the scientist-practitioner model and the problems of practitioners, and his love for fieldwork.

He has always been interested in work measurement issues, models of human job performance in organizations, and research methods. He has consulted and conducted research extensively with numerous large organizations in both the private and public sectors. He has taught graduate and undergraduate management courses as an Assistant Professor at both Texas Tech University (1981-1985) and Iowa State University of Science and Technology (1985-1992). In 1999, he was made an honorary member of the United States Army Special Forces. In 2006, he was appointed editor of Ergometrika (The Journal of Work Measurement Research).

James Woods

Mr. Woods served as the Director of the O*NET Project for the Employment & Training Administration in DOL. Prior to his position with the O*NET Project, he worked for the Bureau of Labor Statistics as a mathematician. He retired in 2004. Mr. Woods and his staff worked extensively with SSA staff from 2000 through 2004 on numerous issues relevant to SSA's needs for occupational information for disability evaluation. Under his leadership, the IOTF and DOL conducted pilots and research targeted to SSA's interests, such as alternative methods of job analyses using private-sector vocational rehabilitation specialists, job classification, measures for strength demands, and developments in identifying mental and cognitive demands of work. In his capacity as the Director for the O*NET Project, he acquired hands-on experience in developing and implementing a national occupational classification system, as well as a unique understanding of what is required to manage an undertaking of this magnitude. Mr. Woods' background in both the Bureau of Labor Statistics and in the Employment Training Administration provides him with a critical knowledge of the challenges inherent in collecting accurate and reliable occupational data across the nation.

Appendix B—Subcommittee Timeline

- **Work Taxonomy and Classification Subcommittee Activities Overview**
  - Chair represented the subcommittee as a member of the OIDAP Executive Committee throughout the activities of the subcommittee
  - Conducted a number of fact finding visits and interviews concerning work taxonomy issues
  - Created online repository of documents that include seminal articles related to work analysis as well as copies of all empirical studies of work analysis that utilize measurement at the Generalized Work Behavior level of measurement.
  - Reviewed information from SKILLTRAN and others related to transferable skills and posts copies to repository
  - Developed and executed plan for creating comprehensive Work taxonomy

- **February 23 - 25, 2009: Inaugural OIDAP Panel Meeting, Washington DC**
  - Review of issue at hand and charge of the committee
  - Education related to the SSA Disability Process
  - Deliberation of panel direction for progressing
  - Subcommittees Formed

- **March 12, 2009: Work Taxonomy and Classification Subcommittee Conference Call**
  - Discussion related to development of Work taxonomy

- **March 26, 2009: Chair of Work Taxonomy attends National Academy of Sciences Meeting**
  - Discussion of the Applications and Criticisms of O*NET

- **March 27, 2009: Work Taxonomy and Classification Subcommittee Conference Call**
  - Finalization of list of empirical articles that describe development of a work-side taxonomy

- **April 9, 2009: Work Taxonomy and Classification Subcommittee Meeting, Raleigh NC**
  - Discussion of the role of SOC in the Work taxonomy process
  - Review of empirical taxonomies with consideration given to needs of SSA and inclusion of physical, mental, and contextual factors
  - Development of presentation to be given at April OIDAP meeting

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- **April 16, 2009: Work Taxonomy and Classification Subcommittee Conference Call**
  - Reviewed plans for presentation to OIDAP panel
  - Identified and located several documents, journal articles for panel members related to job analysis at the level of aggregation being contemplated

- **April 17, 2009: Chair of Work Taxonomy attends National Academy of Sciences Meeting**
  - Discussion of the Scientific Criticisms of O*NET

- **April 27 - 29, 2009: OIDAP Meeting, Atlanta, GA**
  - Viewed case demonstrations for various phases of SSA determination process
  - Work Taxonomy and Classification Subcommittee report given addressing three topics.
    - Fundamentals of work analysis provided all panel members with a common frame of reference for discussing work analysis issues.
    - Work taxonomy evaluation methodology described the methods the subcommittee is employing to compare and analyze known work taxonomies for potential use by SSA
    - Work taxonomy evaluation criteria presented the evaluation criteria identified by the subcommittee for potential use in making recommendations on the work characteristics taxonomy component of a content model for SSA

- **May 2009: Work Taxonomy and Classification Subcommittee Activities Overview**
  - Completed a literature search identifying eleven different taxonomies and several hundred work taxonomy dimensions, evaluating each in terms of ability to provide information for the person side.
  - Completion of full taxonomy cross-walk to identify comprehensive list of unique work characteristics (Note: The taxonomy crosswalk completed by three panel members for later assessment of agreement)

- **May 29, 2009: Work Taxonomy and Classification Subcommittee Meeting, Raleigh NC**
  - Comparison of subcommittee findings on cross-walk, development of the consolidated list of unique dimensions, addition of specific dimensions deemed appropriate for mental or physical requirements

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- **June 2009: Work Taxonomy and Classification Subcommittee Activities Overview**
  - Completion of people-side cross-walk to the previously developed list of general work behaviors (Purpose: ensure that the potential work taxonomy is sensitive to the people-side inferences that will need to be made from job descriptions)
  - Development of sample generalized work behavior items to demonstrate how items in the taxonomy might ultimately be measured.
  - Discussion of the term "skills" as it relates to work analysis and implications for any new occupational information database; legal concerns

- **June 8 - 10, 2009: OIDAP Meeting, Chicago, IL**
  - Work Taxonomy and Classification Subcommittee attended the Mental/Cognitive Subcommittee Roundtable so as to better understand the nature of inferences which must be inferred from job-side behaviors
  - Heard information from Georgina B. Huskey and Trudy Lyon-Hart related to end-user needs for an occupational information database
  - Work Taxonomy and Classification Subcommittee presented full panel with initial taxonomy of generalized work behaviors and sample items

- **June 24, 2009: DDS Visit, Raleigh, NC**
  - After touring facility and over-viewing the claims initiation process, performed job analyses of four vocational specialists to talk with "end users" about how they use current occupational information, what they like and dislike about the system, and what their "dream" occupational information system might look like

- **July 2009: Work Taxonomy and Classification Subcommittee Activities Overview**
  - Completion of SOC crosswalk to proposed generalized work activities taxonomy (Note: Assures that proposed taxonomy encompasses all occupational categories currently utilized by the Department of Labor for reporting purposes)

- **July 13, 2009: Skills Taxonomy Teleconference**
  - Participated in Skills Taxonomy teleconference to assure that direction taken by this subcommittee is not inconsistent with the proposed work taxonomy

- **July 14, 2009: Full Panel Teleconference**
  - Reviewed status of current draft of recommendations related to work taxonomy with full OIDAP panel

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- **July 21 - 22, 2009: Visit to SSA National Hearings Center, Falls Church, VA**
  - Met with Chief Administrative Law Judge Frank Cristaudo
  - Met with Administrative Appeals Judge Johnson and Judge Goldberg
  - Interviewed four additional Administrative Law Judges to discuss how they use the current occupational information system, their interaction and use of Vocation Experts, and what their wants/needs are for the future occupational information system.
  - Watched the hearing of a case being administered via teleconference in order to see how disability decisions at levels three, four, or five might be made and the use of vocational information in these decisions

- **August 2009: Work Taxonomy and Classification Subcommittee Activities Overview**
  - Interviewed and Observed several Vocational Expert's from North Carolina to expand the profile of end-users included in our review of needs for the new occupational information system
  - Continued drafting of final recommendations for presentation to panel at September OIDAP meeting

- **August 3, 2009: Meetings with Vocational Expert, Greenville, NC**
  - Interviewed VE regarding use of occupational information in disability hearing process
  - Phone interview of VE currently residing in MS to learn more about his experiences with occupational information and use of in the disability determination and hearing environment

- **August 6, 2009: Chair of Work Taxonomy and Classification Subcommittee Visits Raleigh NC, ODAR**
  - Observe several hearings, interview ALJ, interview VE, Interview Claimant Representatives

Appendix C—Public Meeting Agendas

Inaugural Meeting Agenda

MONDAY, FEBRUARY 23, 2009

9:00 a.m. to 9:45 a.m.	**Official Opening of the Inaugural Meeting** ❖ ***Location: Ballroom A, 2nd Floor*** **Welcome and Comments** Michael J. Astrue, Commissioner, Social Security Administration
9:45 a.m. to 10:00 a.m.	**BREAK**
10:00 a.m. to 10:30 a.m.	**Overview of the Occupational Information Development Project** Richard Balkus, Associate Commissioner Office of Program Development and Research
10:30 a.m. to 11:00 a.m.	**Statutory Significance of the Use of Occupational Information in SSA's Disability Programs** Jeffrey Blair, Acting Deputy Associate General Counsel for Program Law Office of General Counsel
11:00 p.m. to 12:00 p.m.	**SSA's Challenge: The Dictionary of Occupational Titles** Sylvia E. Karman, Project Director Occupational Information Development Project
12:00 p.m. to 1:15 p.m.	**Lunch – On Your Own**

MONDAY, FEBRUARY 23, 2009 *(cont'd)*

1:15 p.m. to 2:15 p.m.	**SSA's Sequential Evaluation Process for Assessing Disability** Tom Johns, Disability Quality Branch Chief Office of Quality Performance, Dallas, TX
2:15 p.m. to 2:30 p.m.	**Break**
2:30 p.m. to 3:30 p.m.	**SSA's Sequential Evaluation Process for Assessing Disability (*continued*)** Tom Johns, Disability Quality Branch Chief Office of Quality Performance, Dallas, TX
3:30 p.m. to 5:00 p.m.	**Panel Deliberation**

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TUESDAY, FEBRUARY 24, 2009

8:30 a.m. to 8:45 a.m.	**Meeting Call to Order** ❖ ***Location: Ballroom A, 2nd Floor***
8:45 a.m. to 10:00 a.m.	**Disability Determination Services and Their Workload** John Owen, Acting Deputy Director Division of Disability Determination Services Operation Support
10:00 a.m. to 10:15 a.m.	**BREAK**
10:15 a.m. to 11:15 a.m.	**Utilizing Vocational Expert Testimony at the Hearing Level** Judge David G. Hatfield, Hearing Office Chief Administrative Law Judge Office of the Chief Administrative Law Judge
11:15 p.m. to 12:00 p.m.	**The Appeals Council Process** Judge A. George Lowe, Administrative Appeals Judge Office of Appellate Operations
12:00 p.m. to 1:15 p.m.	**Lunch – On Your Own**
1:15 p.m. to 2:00 p.m.	**Prior SSA Work to Address the DOT Concerns** Robert Pfaff, Social Insurance Specialist Occupational Information Development Project
2:00 p.m. to 2:45 p.m.	**SSA's Ideal Occupational Information System: The Legal, Program and Data Requirements** Deborah Harkin, Social Insurance Specialist Occupational Information Development Project
2:45 p.m. to 3:00 p.m.	**BREAK**

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TUESDAY, FEBRUARY 24, 2009 *(cont'd)*

3:00 p.m. to 4:00 p.m.	**SSA's Plans to Develop Occupational Information** Sylvia E. Karman, Project Director Occupational Information Development Project
4:00 p.m. to 5:00 p.m.	**Panel Discussion and Deliberation**

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WEDNESDAY, FEBRUARY 25, 2009

8:30 a.m. to 8:45 a.m.	**Meeting Call to Order** ❖ ***Location: Ballroom A, 2nd Floor***
8:45 a.m. to 9:45 a.m.	**Panel Discussion and Deliberation**
9:45 a.m. to 10:00 a.m.	**BREAK**
10:00 a.m. to 11:00 a.m.	**Panel Discussion and Deliberation (*cont'd*)**
11:00 a.m. to 12:00 p.m.	**Panel Administrative Business**
12:00 p.m.	**Adjourn**

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Second Public Panel Meeting Agenda

MONDAY—APRIL 27, 2009

8:30 a.m. to 8:45 a.m.	**Call to Order** ❖ ***Location: Capitol South***
8:45 a.m. to 9:45 a.m.	**Case Demonstration—Part 1** **Claim Intake and Initial Development of Medical and Vocational Evidence** **John Owen, Acting Deputy Director** Division of Disability Determination Services Operations Support Office of Disability Determinations Office of Operations Social Security Administration
9:45 a.m. to 10:00 a.m.	**BREAK**
10:00 a.m. to 11:00 a.m.	**Case Demonstration—Part 2** **Evaluation of Physical Impairments** **Tom Johns, Branch Chief** Disability Quality Branch Dallas Office of Quality Performance Office of Quality Review Office of Quality Performance Social Security Administration
11:00 a.m. to 12:00 p.m.	**Case Demonstration—Part 3** **Evaluation of Mental Impairments** **Tom Johns, Branch Chief**
12:00 p.m. to 1:15 p.m.	**Lunch On Your Own**

MONDAY—APRIL 27, 2009 *(cont'd)*

1:15 p.m. to 2:15 p.m.	**Case Demonstration—Part 4** **Vocational Evaluation—Past Relevant Work** **Shirleen Roth, Social Insurance Specialist** Office of Retirement and Disability Policy Office of Program Development and Research Social Security Administration ❖ ***Location: Capitol South***
2:15 p.m. to 2:30 p.m.	**BREAK**
2:30 p.m. to 3:15 p.m.	**Case Demonstration—Part 5** **Vocational Evaluation—Other Work** **Shirleen Roth, Social Insurance Specialist**
3:15 p.m. to 3:30 p.m.	**BREAK**
3:30 p.m. to 5:00 p.m.	**Case Demonstration—Part 6** **Perspectives from the Hearing Office and Office of Appellate Operations** **Cam Oetter, Administrative Law Judge** Hearing Office—Macon, GA Office of Disability Adjudication and Review Social Security Administration **Robert Goldberg, Administrative Appeals Judge** Office of Appellate Operations Office of Disability Adjudication and Review Social Security Administration
5:00 p.m.	**Adjourn**

Work Taxonomy and Classification Subcommittee

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TUESDAY—APRIL 28, 2009

8:30 a.m. to 8:45 a.m. — **Call to Order**

- ***Location: Capitol South***

8:45 a.m. to 9:45 a.m. — **Perspectives from Vocational Experts and Case Analysis**

Scott T. Stipe
Career Directions Northwest
Scott Stipe & Associates, Inc.

Lynne Tracy
Lynne Tracy & Associates

9:45 a.m. to 10:00 a.m. — **BREAK**

10:00 a.m. to 11:00 a.m. — **Perspectives from Claimant Representatives and Case Analysis**

Art Kaufman
Accu-Pro Disability Advocates

Charles L. Martin, J.D.
Martin and Jones

11:00 a.m. to 12:00 p.m. — **Initial Report of the OIDAP Work Taxonomy Subcommittee**

The initial report of the OIDAP Work Taxonomy Subcommittee will address three topics. The first topic, fundamentals of work analysis, will attempt to provide all panel members with a common frame of reference for discussing work analysis issues. The second topic, work taxonomy evaluation methodology, will describe the methods the subcommittee is employing to compare and analyze known work taxonomies for potential use by SSA. The final topic, work taxonomy evaluation criteria, will present the evaluation criteria identified by the subcommittee for potential use in making recommendations on the work characteristics taxonomy component of a content model for SSA.

TUESDAY—APRIL 28, 2009 *(cont'd)*

	Mark A. Wilson, Ph.D. Associate Professor of Psychology North Carolina State University OIDAP Member
12:00 p.m. to 1:15 p.m.	**Lunch On Your Own**
1:15 p.m. to 3:00 p.m.	**Occupational Information User Panel**
	Robert Goldberg, Administrative Appeals Judge Social Security Administration
	Art Kaufman Accu-Pro Disability Advocates
	Charles L. Martin, J.D. Martin and Jones
	John Owen Social Security Administration
	Scott T. Stipe Scott Stipe & Associates, Inc.
	Lynne Tracy Lynne Tracy & Associates
	Rick Waitsman, Administrative Law Judge Social Security Administration
3:00 p.m. to 3:15 p.m.	**BREAK**
3:15 p.m. to 4:00 p.m.	**Panel Discussion and Deliberation**
4:00 p.m. to 5:00 p.m.	**Public Comment**
5:00 p.m.	**Adjourn**

Work Taxonomy and Classification Subcommittee

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WEDNESDAY—APRIL 29, 2009

8:30 a.m. to 8:45 a.m.	**Call to Order** ❖ ***Location – Capitol South***
8:45 a.m. to 9:45 a.m.	**Fundamental Dimensions of Human Cognitive Functioning** One possible approach to identifying aspects of cognitive functioning is factor analysis. Factor analysis aims to elucidate smaller subsets of latent abilities that account for most of the performance variability seen in larger sets of cognitive measures. This presentation will review a number of previously reported factor analytic studies and attempt to summarize models of human cognitive architecture that involve single, dual, and multiple latent factors. It will also include a discussion of the advantages and disadvantages of recommending that SSA adopt simple versus complex models of cognitive functioning for purposes of mental RFC assessment. **David A. Schretlen, Ph.D.** The Johns Hopkins University School of Medicine Department of Psychiatry and Behavioral Sciences Subcommittee Chair—Mental/Cognitive RFC OIDAP Member
9:45 a.m. to 10:00 a.m.	**BREAK**
10:00 a.m. to 12:00 p.m.	**Panel Discussion and Deliberation**
12:00 p.m. to 1:15 p.m.	**Lunch On Your Own**
1:15 p.m. to 3:00 p.m.	**Panel Administrative Business Session**
3:00 p.m.	**Adjourn**

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Third Public Panel Meeting Agenda

WEDNESDAY—JUNE 10, 2009

8:30 a.m. to 8:45 a.m.	**Call to Order of the Full Panel Public Meeting** **Overview of Today's Agenda** ❖ ***Conference Center Room CC10CD***
8:45 a.m. to 9:30 a.m.	**National Association of Disability Examiners** **Georgina B. Huskey, *President***
9:30 a.m. to 10:15 a.m.	**National Council of Disability Determination Directors** **Trudy Lyon-Hart, *Secretary***
10:30 a.m. to 11:30 a.m.	**Clinical Inference in the Assessment of Mental Residual Functional Capacity** ❖ ***Conference Center Room CC10CD*** **David A. Schretlen, Ph.D.** The Johns Hopkins University School of Medicine Department of Psychiatry and Behavioral Sciences Subcommittee Chair—Mental/Cognitive Panel Member, OIDAP
11:30 a.m. to 1:00 p.m.	**LUNCH ON YOUR OWN**
1:00 p.m. to 2:15 p.m.	**Subcommittee Chair Report – User Needs** **Panel Discussion and Deliberation** **Subcommittee Chair Report – Physical Demands**
2:15 p.m. to 2:30 p.m.	**BREAK**
2:30 p.m. to 3:30 p.m.	**Public Comment** ❖ ***Conference Center Room CC10CD***
3:30 p.m. to 5:00 p.m.	**Subcommittee Chair Report – Mental/Cognitive** **Panel Discussion and Deliberation**
5:00 p.m.	**ADJOURN**

Work Taxonomy and Classification Subcommittee

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THURSDAY—JUNE 11, 2009

8:30 a.m. to 8:45 a.m.	**Call to Order** **Overview of Today's Agenda** ❖ ***Conference Center Room CC10CD***
	Project Director's Report
8:45 a.m. to 10:30 a.m.	**Subcommittee Chair Report – Transferable Skills Analysis**
	Subcommittee Chair Report - Taxonomy
	Panel Discussion and Deliberation
10:30 a.m. to 11:00 a.m.	**BREAK**
11:00 a.m. to 12:00 p.m.	**Panel Discussion and Deliberation** ❖ ***Conference Center Room CC10CD***
12:00 p.m.	**ADJOURN**

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Teleconference Public Panel Meeting Agenda

TUESDAY - JULY 14, 2009

12:00 p.m. EDT — **Call to Order**

Review of Agenda and Procedures

Presentation of Draft Core Recommendations and Next Steps

- ***Taxonomy***—Mark A. Wilson, *Chair*
- ***User Needs & Relations***—Sylvia E. Karman, *Chair*
- ***Mental/Cognitive***—David A. Schretlen, *Chair*
- ***TSA***—Thomas A. Hardy, *Chair*
- **Physical Demands**—Deborah E. Lechner, *Chair*

Panel Discussion and Deliberation

Project Director's Report

Administrative Business

2:00 p.m. EDT — **Adjourn**

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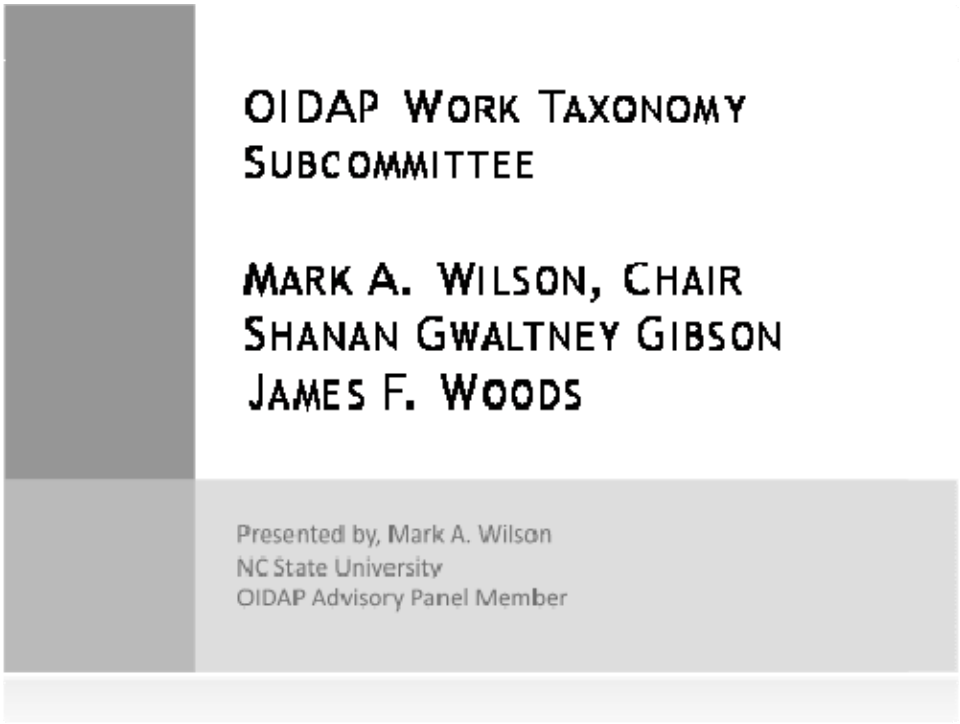
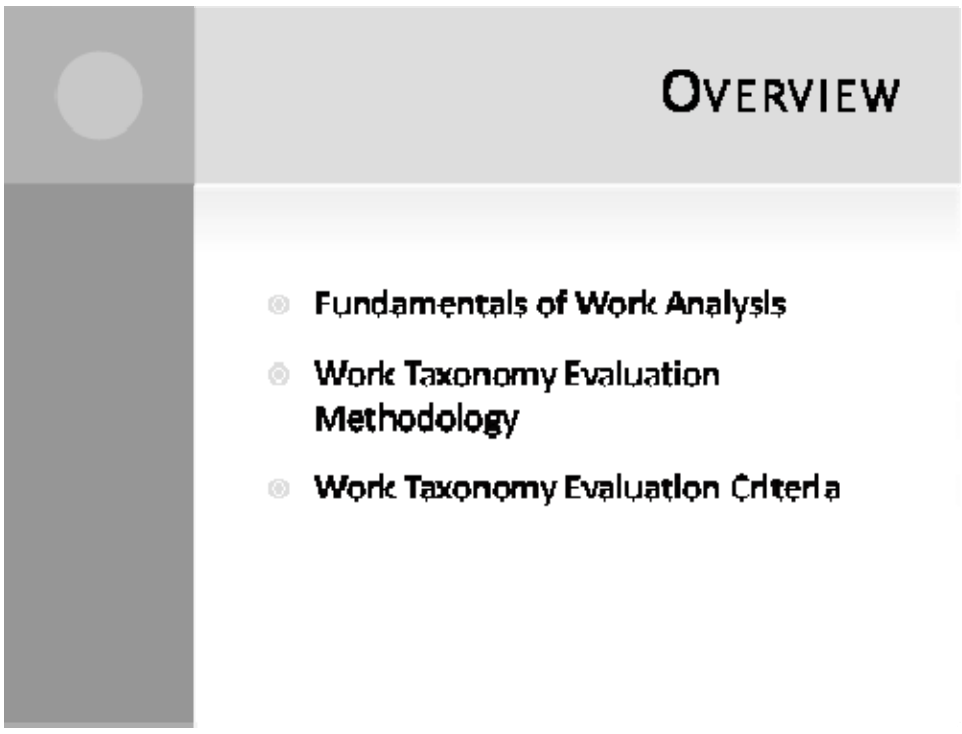
Appendix D—Subcommittee Presentation





Fundamentals of Work Analysis Overview

- Definition
- Two Important Models
- Important Job Analysis Decisions
- What is a job analysis system?
- Making Job Comparisons

Definition

- Definition of Work Analysis
  - Collecting Information about Jobs
  - By any Means
  - For any Purpose

Work Taxonomy and Classification Subcommittee

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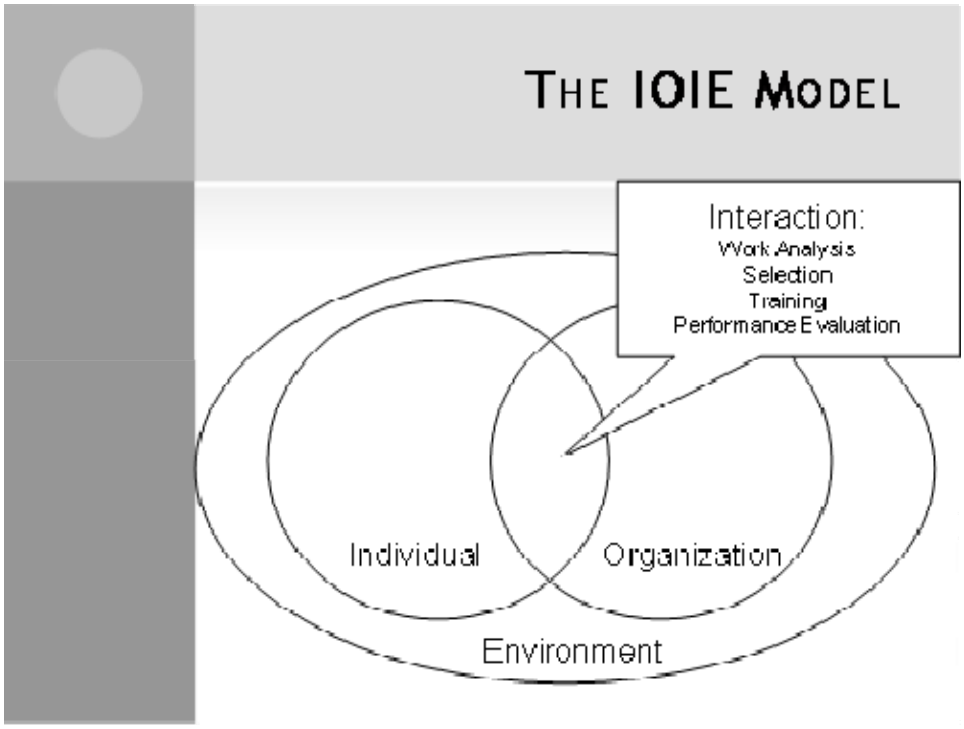
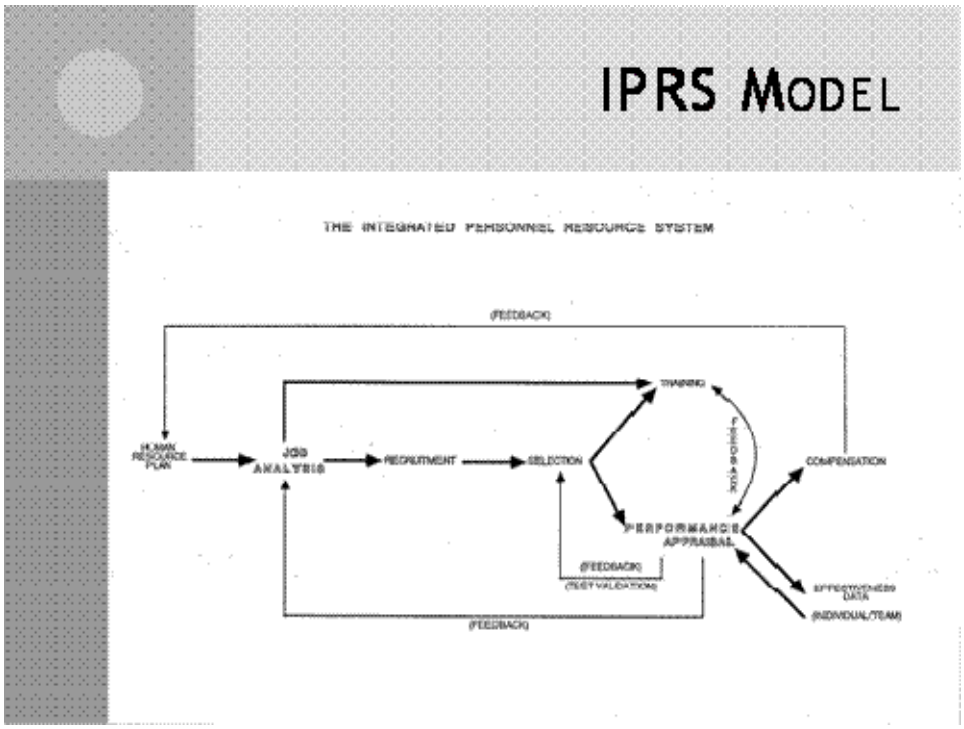




Important Work Analysis Decisions

- Purpose of the Analysis
- Level of Analysis/Degree of Specificity
- Source of information
- Mode/Form of information collection
- Evaluation Criteria

Purpose of the Analysis

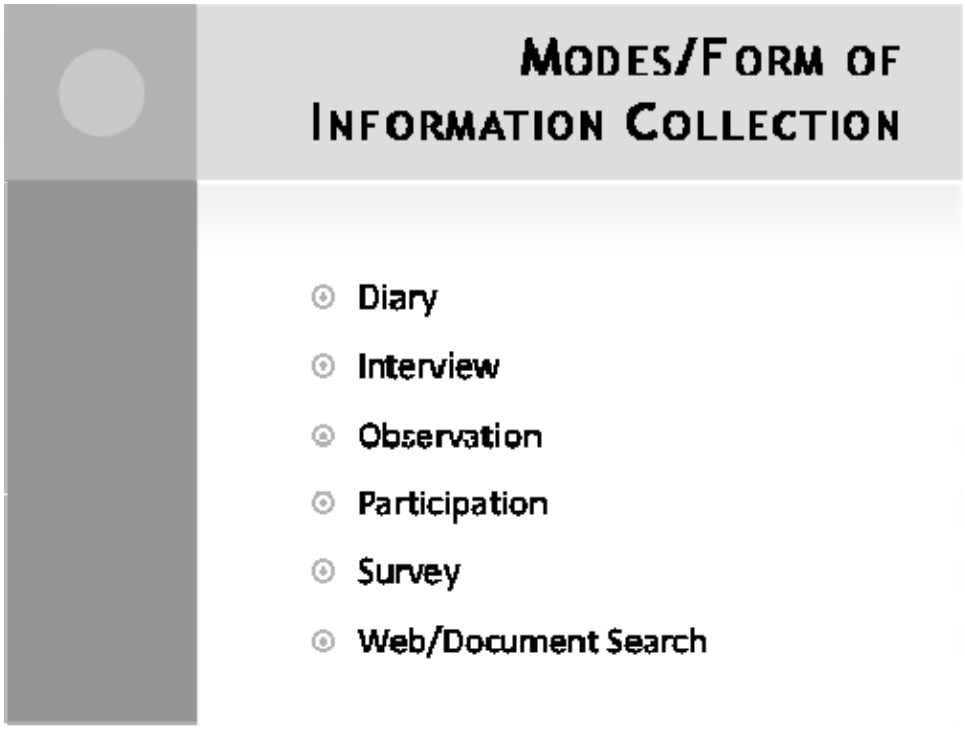
- A Job Analytic Information System Describing all Available Work in the US Economy for Disability Determination
- Ability to Withstand Both Legal and Scientific Challenges

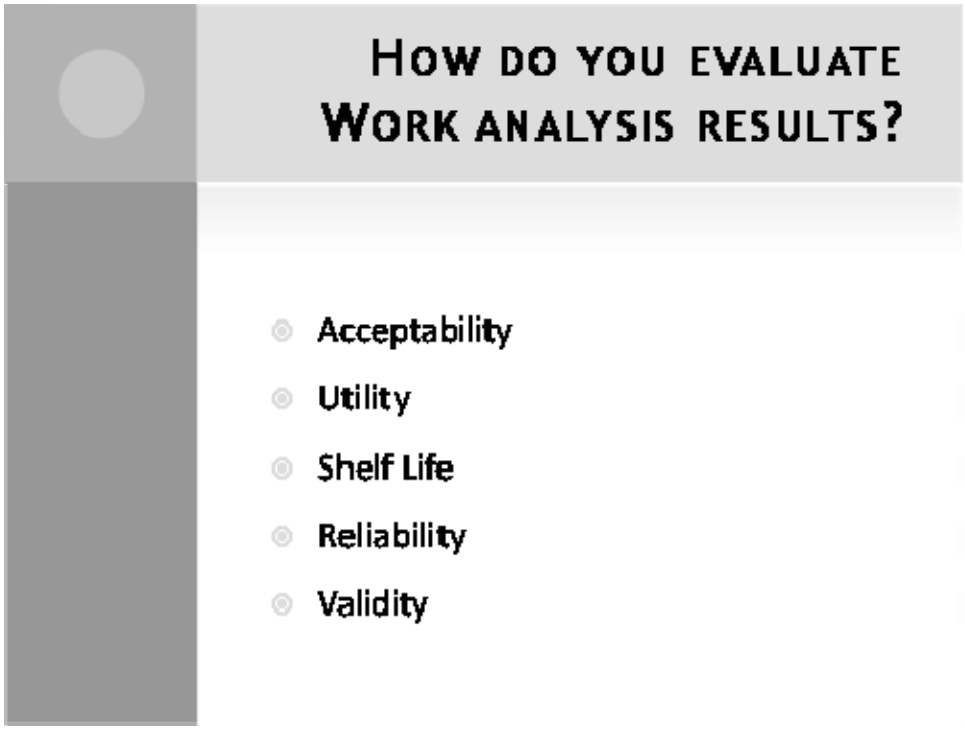
Degree of Analysis Specificity

Degree of Specificity	*Numbers*
Occupation	1000's
Job	10's-100's
Position	1
Job Dimensions	10's
Generalized Work Activities	10's
Duties	10's
Tasks	100's
Elements	1000's

Sources of Work Information

- Incumbent
- Peers
- Supervisor
- Subordinate
- Analyst


Modes/Form of Information Collection
Diary
Interview
Observation
Participation
Survey
Web/Document Search


How do you evaluate Work analysis results?
Acceptability
Utility
Shelf Life
Reliability
Validity

Sample Work Analysis Systems?

- Combinations of Specificity, Source, Mode, & Evaluation Criteria Decisions
  - *Functional Job Analysis*
  - *CODAP - Task Inventories*
  - *Generalized Work Activity Questionnaires*

Functional Job Analysis

- Rational Job Dimensions
  - Worker Function and Orientation
    - Data, People, Things
  - Worker Instructions
  - General Educational Development
    - Reasoning, Math, Language
- Makes use of Task Ratings

FJA Task Rating

TASK CODE:

WORKER FUNCTION AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
THINGS	%	DATA	%	PEOPLE	%		REASONING	MATH	LANGUAGE
4C	65	3B	25	1A	10	4	3	3	3

GOAL:	OBJECTIVE:
Operates Grader — Output Basic	Backfilling, scarifying, windrowing, cutting firebreak, maintaining haul road, snow removal

TASK: Operates grader manipulating controls to travel forward/back, turn, raise/lower blade, position wheels and blade at correct angles; follows work order and markings on grade stakes, drawing on knowledge and experience, monitoring the performance of the equipment and adapting to the changing situation, constantly alert to the presence and safety of other workers/equipment, in order to perform routine grader tasks such as backfilling, haul road maintenance, snow removal.

CODAP - Task Inventories

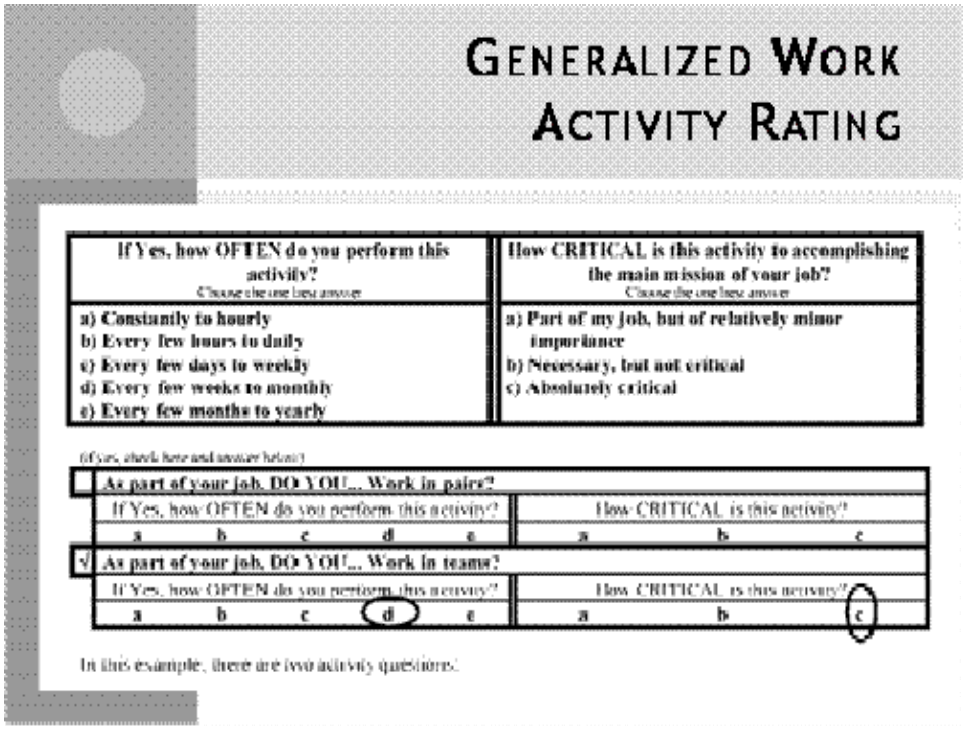
- Inventory of Job Tasks for Multiple Jobs
- Often Evaluated on Several Scales
  - Difficulty
  - Frequency
  - Time
- Used for many purposes including to assess training

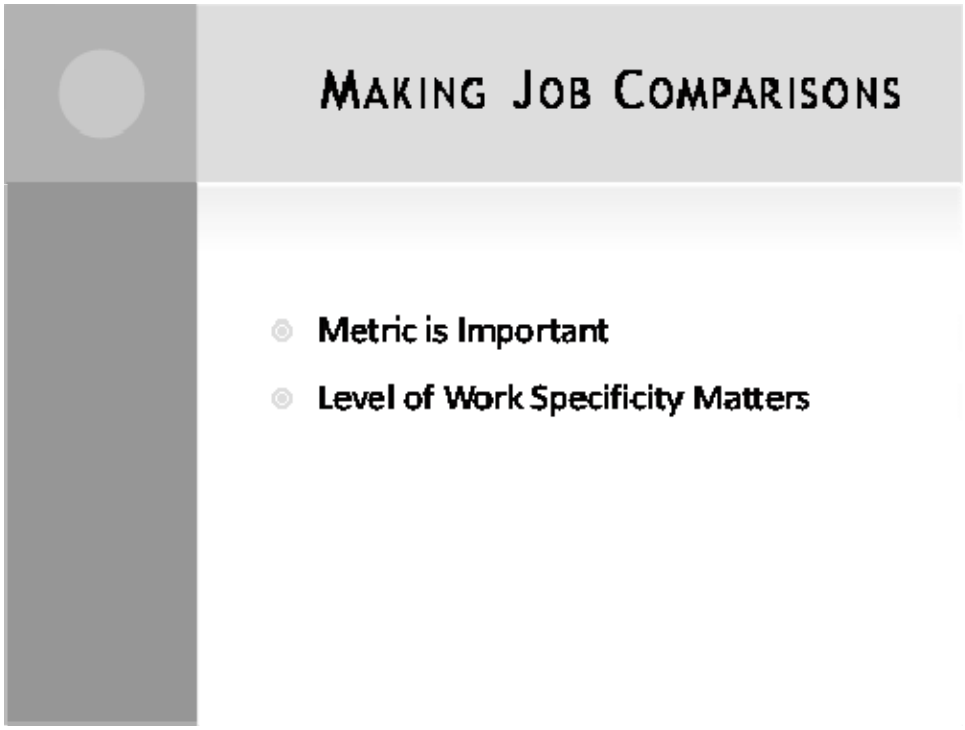
Example Inventory Tasks

- Apply safety awareness techniques
- Arrest individual for bookable violations and warrants
- Attend press conferences/media events on special projects
- Chart trainees' daily activities
- Check schedules for accuracy
- Correspond regularly with court officials

Generalized Work Activity Questionnaire

- Often Based on a "Theory of Work"
  - Work Inputs
  - Work Processes
  - Work Output
- Meant to Apply to all or most Work
- Normative Data Collected


GENERALIZED WORK ACTIVITY RATING
If Yes, how OFTEN do you perform this activity?
Choose the one best answer
a) Constantly to hourly
b) Every few hours to daily
c) Every few days to weekly
d) Every few weeks to monthly
e) Every few months to yearly
How CRITICAL is this activity to accomplishing the main mission of your job?
Choose the one best answer
a) Part of my job, but of relatively minor importance
b) Necessary, but not critical
c) Absolutely critical
(If yes, check here and answer below)
As part of your job, DO YOU... Work in pairs?
If Yes, how OFTEN do you perform this activity?
a b c d e
How CRITICAL is this activity?
a b c
√ As part of your job, DO YOU... Work in teams?
If Yes, how OFTEN do you perform this activity?
a b c d e
How CRITICAL is this activity?
a b c
In this example, there are two activity questions.


MAKING JOB COMPARISONS
Metric is Important
Level of Work Specificity Matters

JOBS GROUPED BY ABILITY LEVEL

TABLE 12.4

Partial List of Jobs Grouped According to Common Abilities Needed[a]

Static Strength	Explosive Strength	Dynamic Strength	Trunk Strength	Stamina	Extent Flexibility	Dynamic Flexibility	Speed of Limb Movement	Gross Body Coordination	Gross Body Equilibrium
Firefighter	Firefighter Officer			Firefighter			Officer		
Attendant		Firefighter	Firefighter				Firefighter		Firefighter
Operator							Attendant		
Officer								Firefighter	Inspector
Lieutenant			Operator	Officer	Mechanic	Firefighter		Officer	Officer
Laborer/Mechanic			Laborer		Firefighter		Operator		Painter
	Operator Attendant	Officer							
			Clerk/Officer	Operator	Attendant	Operator/Officer	Inspector	Operator	
Custodian	Mechanic	Painter	Attendant	Laborer	Painter	Attendant		Attendant	Operator
	Laborer	Operator	Mechanic/Painter			Laborer	Clerk	Painter	Laborer
	Clerk/Painter	Inspector		Attendant	Operator	Painter	Laborer/Nurse	Laborer	Attendant
Nurse		Laborer	Custodian	Clerk/Painter	Laborer		Painter		

JOBS GROUPED BY ABILITY LEVEL

		Mechanic		Custodian	Officer/Clerk	Clerk	Mechanic	Inspector	
		Attendant	Nurse	Mechanic		Mechanic		Clerk	Mechanic
	Custodian	Clerk/Custodian				Custodian		Custodian	Custodian
	Inspector			Nurse	Custodian				
	Nurse				Inspector	Nurse	Custodian	Mechanic	Clerk
Inspector		Nurse	Inspector		Nurse			Nurse	Nurse
				Inspector			Social Worker		
				Attorney		Inspector	Clerical		
Accountant		Attorney	Clerical						
Clerical		Clerical	Social Worker		Clerical				
		Social Worker	Attorney				Attorney		
			Accountant			Clerical	Accountant	Clerical	Clerical
	Clerical			Clerical	Social Worker			Social Worker	Accountant
	Accountant	Accountant		Social Worker	Accountant	Attorney		Attorney	Attorney
	Social Worker			Accountant	Attorney	Accountant		Accountant	Social Worker
Social Worker	Attorney					Social Worker			
Attorney									

[a]Adapted with permission from Hogan, J. C., Ogden, G. D., and Fleishman, E. A. *Assessing physical requirements for establishing medical standards in selected benchmark jobs* (ARRO Final Report 3912/R78-8). Washington, D.C.: Advanced Research Resources Organization, June 1978.

Work Taxonomy Development Methodology Overview

- Definition
- Identity Existing Taxonomies
- Compare Existing Taxonomies
- Evaluate Dimensions for Disability Determination Sensitivity
- Progress Report

Definition

- Definition of Work Taxonomy
  - Can be Rational or Empirical
  - Is Meant to be Comprehensive
  - Primary Purpose is Classification
  - Can Vary in Level of Detail
  - Can Be Based on Work Characteristics or Job Titles
  - Most Frequently not the Level at Which Information is Collected

Identification of Existing Taxonomies

- Reviewed Scientific Literature
- Conducted Database and Web Searches
- Solicited Suggestions from Subcommittee Members and SSA Staff Advisors

Current Taxonomies Retained for Analysis

- Occupational Analysis Inventory (OAI)
- General Work Inventory (GWI)
- Occupational Aptitude Patterns Map (OAP Map)
- Job Element Inventory (JEI)
- Common-Metric Questionnaire (CMQ)

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Current Taxonomies Retained for Analysis

- Worker Activity Profile (WAP)
- Position Analysis Questionnaire (PAQ)
- Professional and Managerial Position Questionnaire (PMPQ)
- The Occupational Information Network (O*NET)
- Management Position Description Questionnaire (MPDQ)
- Purdue Cognitive Task Analysis Questionnaire (PCTAQ)

Compare Existing Taxonomies

Work Taxonomy Dimension	OAI	GWI	OAP
1. Dimension 1 (OAI) 2. Dimension 6 (GWI) 3. Dimension 3 (OAP)	x	x	x
1. Dimension 4 (GWI) 2. Dimension 7 (OAP)		x	x
1. Dimension 2 (OAI) 2. Dimension 4 (OAP)	x		x

Evaluate Dimensions for Disability Determination Sensitivity

Work Taxonomy Dimension	Physical	Cognitive	E, B, I
1. Dimension 1 (OAI) 2. Dimension 6 (GWI) 3. Dimension 3 (OAP)	x		
1. Dimension 4 (GWI) 2. Dimension 7 (OAP)		x	x
1. Dimension 2 (OAI) 2. Dimension 4 (OAP)	x	x	x

Work Taxonomy Evaluation Criteria

- Does the dimension have obvious physical, cognitive, emotional, behavioral, or interpersonal relationship to world of work
- Even if it does not, is it a dimension which is relevant to determining transferability of skills
- Does the dimension show up in multiple taxonomies

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Work Taxonomy Evaluation Criteria

- Is the dimension legally defensible – can it be unambiguously measured as an "observable" or as having an observable outcome
- Is the Dimension sensitive to the Jobs SSA currently sees frequently
- Is the Dimension sensitive to the emerging characteristics of a knowledge/service intensive world of work

Subcommittee Progress Report

- Have Identified 11 Work Characteristics Taxonomies for Further Analysis
- Have Identified A Method of Analysis
- Have Identified 6 Evaluation Criteria

Appendix E—Table of Concerns

Concerns
-Updating OIS
Many jobs are missing from the DOT database; include newer jobs that have evolved in the current world of work.
Many jobs listed in the current database have not existed in the current economy for many years.
-Requested OIS Content
Job descriptions in the DOT do not reflect the role of technology / automation in the current environment
Job descriptions in the DOT do not include ratings of such activities as pushing/pulling or the types of reaching and lifting required
Job descriptions in the DOT do not separate standing, walking, sitting, etc.
Job descriptions in the DOT do not include ratings which adequately address frequency & duration or activities
Job descriptions in the DOT do not include ratings of mental demands beyond the Data/People/Things categories. This is not especially helpful as it is non-specific and does not match the language found on the MRFC
Job descriptions in the DOT do not include ratings of many non-exertional or contextual factors associated with a job which may be important (e.g. exposure to heat, atmospheric particles, etc.)
Job descriptions in the DOT do not include ratings of stress associated with a job; this emerges as problematic based on the number of claims based upon mental impairment are now received
Consideration must be given to the role of education and training required in any new OIS
Should not attempt to directly measure constructs that are too abstract
The coding of non exertional factors which does exist in the DOT is not consistent with the language presented on the RFC
-Requested OIS Database Features
Need a searchable database that allows cross-matching of specific skills (e.g. data entry skills, operation of equipment/machinery, etc.)
Searchable database that allows for searching based upon exertional level, mental/cognitive demands (and any combination thereof)
Searchable database that allows for searching of key words/phrases beyond just job title searches. Searches should include work behaviors, equipment, industry, etc.

Concerns *(cont'd)*

Platform that has built-in thesaurus of similar terms/job titles
Platform that provides a structured operation that guides users through the steps of the vocational analysis in a systematic fashion
Dynamic database that is regularly updated with new jobs and information how the performance of existing jobs is changing
Ability to view reports in either bulleted or paragraph forms

-Other Requests
The language employed in the OIS should be consistent with what is found in the RFC, MRFC, 3369, etc.
Prioritize new system based upon the most frequently occurring jobs as reported on 3369s.
Provide comprehensive training to all adjudicators at all levels; use same platform at all levels of adjudication including ODAR
Job Counts Should be Accurate
The new OIS should meet high scientific standards and not be subject to political or agency pressure

Appendix F—Empirical Work Taxonomies

Occupational Analysis Inventory (OAI)

Cunningham, J. W., et al. (1983). Systematically Derived Work Dimensions: Factor Analyses of the Occupation Analysis Inventory. *Journal of Applied Psychology, 68*, 232-252.

General Work Inventory (GWI)

Cunningham, J. W., et al. (1990). Some general dimensions of work among U. S. Air Force enlisted occupations. *Military Psychology, 2,* 33-45.

Occupational Aptitude Patterns Map (OAP Map)

Gottfredson, L. S. (1986). Occupational aptitude patterns map: Development and implications for a theory of job aptitude requirements [Monograph]. *Journal of Vocational Behavior, 29*, 254-291.

Job Element Inventory (JEI)

Harvey, R. J., et al. (1988). Dimensionality of the Job Element Inventory, a Simplified Worker-Oriented Job Analysis Questionnaire. *Journal of Applied Psychology, 73,* 639-646.

Common-Metric Questionnaire (CMQ)

Harvey, R. J. (2004, April). Empirical foundations for the Things-Data-People taxonomy of work. In Fleishman, E. A. (Chair), Things,
Data, and People: Fifty years of a seminal theory. Symposium presented at the Annual Conference of the Society for Industrial and
Organizational Psychology, Chicago.

Worker Activity Profile (WAP)

McCormick, E. J., et al. (1967). Job Dimensions based on factorial analyses of worker-oriented job variables. *Personnel Psychology, 20,* 417-430.

Appendix F—Empirical Work Taxonomies *(cont'd)*

Position Analysis Questionnaire (PAQ)

McCormick, E. J., et al. (1972). A study of job characteristics and job dimensions as based on the position analysis Questionnaire (PAQ). Journal of Applied Psychology, 56, 347-368.

Professional and Managerial Position Questionnaire (PMPQ)

Mitchell, J. L. (1978). Structure Job Analysis of Professional and Managerial Positions (Doctoral dissertation, Purdue University, 1978). Dissertation Abstracts International, 757226091, 228 pages; AAT 7905756.

Mitchell, J. L., et al. (1979). Development of the PMPQ. A structured job analysis questionnaire for the study of professional and managerial positions. PMPQ Report No. 1, July 1979.

The Occupational Information Network (O*NET)

Peterson, N. G., et al. (1997). O*Net Final Technical Report. Utah Department of Workforce Services, Contract Number 94-542.

Management Position Description Questionnaire (MPDQ)

Tornow, W. W., et al. (1976). The development of a managerial job taxonomy: A system for describing, classifying, and evaluating executive positions. *Journal of Applied Psychology, 61,* 410-418.

Purdue Cognitive Task Analysis Questionnaire (PCTAQ)

Wei, J., et al. (2000). Development of the Purdue Cognitive Job Analysis Methodology. *International Journal of Cognitive Ergonomics, 4,* 277-295.

Appendix G—Empirical Work Taxonomy Dimensions

OAI Dimensions

Human Development, Assistance, and Conflict Resolution
Sales, Service, and Public Relations
Routine Semantic and Symbolic Activities Clerical Activities
Biological/Health-Related Activities
Mechanical Repair, Maintenance and Operation
Activities Related to Visual Aesthetics
Utilization and Processing of Numerical Data
Botanical Activities
Activities Related to Physical Science and Technology
Electrical/Electronic Repair, Maintenance, and Operation
Building/Repairing Structures
Use of Technical/Scientific Devices
Working with Animals
Improving/Monitoring the Physical Performance, Capability and Adjustment of Others
Food Preparation/Processing
Technical Planning and Drawing
Assembly/Fabrication Activities
Environmental Planning and Maintenance
Performing Arts Activities
Activities Requiring Coordination, Balance, and Quickness
Vehicle and Mechanized Equipment Operation
Organizing and Supervising the Work of Others
Biological Testing/Inspection Activities
Instructing
Verbal Communication

d = 25

Appendix G—Empirical Work Taxonomy Dimensions (cont'd)

GWI Dimensions

Human Development & Interaction
Electrical, Electronic & Mechanical Activities
Spatial/Object Perception & Tracking
Working with Numerical/Symbolic Data
Structural/Construction Activities
Motivating work Conditions
Contracting/Merchandising Activities
Health Treating/Caring
Visual Aesthetics Activities
Working with Plant and/or Animal Life
Performing Arts Activities
Information Compiling Activities
Regulated/Standardized Work
Stockkeeping/Bookkeeping

d = 14

Appendix G—Empirical Work Taxonomy Dimensions (cont'd)

CMQ Dimensions (MDM = Managerial Decision Making, EC = External Contacts, IC = Internal Contacts)

MDM: Implementing
Hazardous/unpleasant work environment
EC: Regulators, Government
Physical activity
EC: mid-level, info/decide/supervise
High-level: info/decide/resolve
Prof/tech: info/decide/resolve
Lower-level: info/decide/resolve
MDM: POM/HR, lower-impact
Stationary machines
Treatment/therapy/safety
Enforcement/demanding conditions
Negotiation
Take info, orders, interview
Powered tools/equipment
Persuade/sell
MDM: Acquire/start/sell businesses
EC: public/customers/clients info
IC: mid-level info/decide
Heavy/offroad vehicles
EC: Entertain/persuade
Safety/damage to others
EC: mid-level exchange info
EC: press/media
MDM: products/services, lower-impact
EC: students/children/civic
MDM: POM/HR higher-level
MDM: prods/services, higher impact
Tech/scientific/computers-machines
Processing/moving machines
Stationary machines
Office equipment
EC: delegating/supervising
MDM: financial
IC: lower-level supervision
IC: middle-level supervision
IC: sales/service supervision
Language use/programming

Appendix G—Empirical Work Taxonomy Dimensions (cont'd)

CMQ Dimensions (MDM = Managerial Decision Making, EC = External Contacts, IC = Internal Contacts) *(cont'd)*

Language use/foreign
EC: PT/mid-level conflicts
EC: projects/people supervising
MDM: strategic planning, entire org

d = 42

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

OAP Map

Researching, designing, and modifying physical systems
Operating and testing physical systems
Crafting or inspecting complex objects; repairing, operating, or setting up equipment or vehicles
Crafting, finishing, assembling, sorting, or inspecting simple objects
Tending (machines, buildings, plants, animals) and attending (workers, the public)
Researching, planning, and maintaining societal systems
Persuading, informing, and helping individuals
Serving and caring for individuals
Maintaining bureaucratic rules, records, and transactions
Processing routine information
Manipulating records
Verbal arts
Spatial arts

d = 13

Appendix G—Empirical Work Taxonomy Dimensions (cont'd)

WAP

Decision Making and Communications Activities
Hierarchical Person-to-Person Interaction
Skilled Physical Activities
Mental vs. Physical Activities
Responsible Personal Contact
General Physical Activities
Unpleasant vs. Pleasant Working Conditions
Decisions Affecting People
Varied Intellectual vs. Structured Activities
Supervisory Activities
Man-Machine Control Activities
Planning and Decision-Making
Skilled Manual Activities
Intellectual vs. Physical Activities
Body Balancing Activities
Physical vs. Sedentary Activities
Clerical Activities
Knee-Bending Activities
Informative Communications
Communication of Data
Persuasive Communications
Public Contact Activities
White Collar vs. Blue Collar Situations
Job Security vs. Performance-Dependent Income
Apparel: Specific Uniform
Apparel: Optional vs. Work Clothes
Apparel: Formal vs. Optional
Hourly Pay vs. Salary
Annoying Environment
Unpleasant Environment
Outdoor Work

d = 31

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

PAQ

Visual input from devices/materials
Perceptual interpretation
Information from people
Visual input from distal sources
Evaluation of information from physical sources
Environmental awareness
Awareness of body movement/posture
Decision making
Information processing
Machine/process control
Manual control/coordination activities
Control/equipment operation
General body activity
Handling/manipulating activities
Use of finger-controlled devices vs. physical work
Skilled/technical activities
Communication of decisions/judgments
Job-related information exchange
Staff/related activities
Supervisor-subordinate relationships
Public/related contact
Unpleasant/hazardous physical environment
Personally demanding situations
Businesslike work situations
Attentive/discriminating work demands
Unstructured vs. structured work
Variable vs. regular work schedule

d = 27

Appendix G—Empirical Work Taxonomy Dimensions (cont'd)

PMPQ

Planning and Decision Making
Complex Analysis and Communication
Relevant Experience
Personal Job Requirements
Technical Activities
Processing of Information/Data
Second Language Usage
Special Training
Communicating/Instructing
Interpersonal Activities

d = 10

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd*)

O*NET

Getting Information
Identifying Objects, Actions, and Events
Monitoring Processes, Materials, or Surroundings
Inspecting Equipment, Structures, or Materials
Estimating the Quantifiable Characteristics of Products, Events, or Information
Judging the Qualities of Objects, Services, or People
Evaluating Information to Determine Compliance with Standards
Processing Information
Analyzing Data or Information
Making Decisions and Solving Problems
Thinking Creatively
Updating and Using Relevant Knowledge
Developing Objectives and Strategies
Schedule Work and Activities
Organizing, Planning, and Prioritizing Work
Performing General Physical Activities
Handling and Moving Objects
Controlling Machines and Processes
Working with Computers
Operating Vehicles, Mechanized Devices, or Equipment
Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment
Repairing and Maintaining Mechanical Equipment
Repairing and Maintaining Electronic Equipment
Documenting/Recording Information
Interpreting the Meaning of Information for Others
Communicating with Supervisors, Peers, or Subordinates
Communicating with People Outside the Organization
Establishing and Maintaining Interpersonal Relationships
Assisting and Caring for Others
Selling or Influencing Others
Resolving Conflicts and Negotiating with Others
Performing for or Working Directly with the Public
Coordinating the Work and Activities of Others
Developing and Building Teams
Training and Teaching Others
Guiding, Directing, and Motivating Subordinates

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

O*NET *(cont'd)*

Coaching and Developing Others
Providing Consultation and Advice to Others
Performing Administrative Activities
Staffing Organizational Units
Monitoring and Controlling Resources

d = 41

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

SOC

Management Occupations
Business and Financial Operations Occupations
Computer and Mathematical Occupations
Architecture and Engineering Occupations
Life, Physical, and Social Science Occupations
Community and Social Services Occupations
Legal Occupations
Education, Training, and Library Occupations
Arts, Design, Entertainment, Sports, and Media Occupations
Healthcare Practitioner and Technical Occupations
Healthcare Support Occupations
Protective Service Occupations
Food Preparation and Serving Related Occupations
Building and Grounds Cleaning and Maintenance Occupation
Personal Care and Service Occupations
Sales and Related Occupations
Office and Administrative Support Occupations
Farming, Fishing, and Forestry Occupations
Construction and Extraction Occupations
Installation, Maintenance, and Repair Occupations
Production Occupations
Transportation and Material Moving Occupations
Military Specific Occupations

d = 23

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

MPDQ

Product, Marketing, and Financial Strategy Planning
Coordination of Other Organizational Units & Personnel
Internal Business Control
Products and Services Responsibility
Public & Customer Relations
Advanced Consulting
Autonomy of Action
Approval of Financial Commitments
Staff Service
Supervision
Complexity & Stress
Advanced Financial Responsibility
Broad Personnel Responsibility

d = 13

Appendix G—Empirical Work Taxonomy Dimensions *(cont'd)*

PCTAQ

Audio attention
General cognitive information processing
Combining and analyzing information; sensing problems
Search and receive information except visual and audio; identify objects, events, and actions
Motivation
Mental planning and scheduling
Cognitive attention; Decision making
Noninterpersonal communication

d = 8

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Appendix H—Dimension Consolidation

Initial List of Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk

Rater 1	Rater 2	Rater 3
Apparel: Formal vs. Optional	Activities Related to Physical Science and Technology	Activities Related to Physical Science and Technology
Apparel: Optional vs. Work Clothes	Activities Related to Visual Aesthetics	Activities Related to Visual Aesthetics
Apparel: Specific Uniform	Activities Requiring Coordination, Balance, and Quickness	Advanced Consulting
Assembly/Fabrication Activities	Advanced Consulting	Apparel: Formal vs. Optional
Botanical Activities	Apparel: Specific Uniform Apparel: Optional vs. Work Clothes Apparel: Formal vs. Optional	Apparel: Optional vs. Work Clothes
Building/Repairing Structures	Assembly/Fabrication Activities	Apparel: Specific Uniform
EC: delegating/supervising	Attentive/discriminating work demands	Assembly/Fabrication Activities
EC: Entertain/persuade	Audio attention	Audio attention
EC: mid-level exchange info	Biological Testing/Inspection Activities	Autonomy of Action
EC: mid-level, info/decide/supervise	Botanical Activities	Body Balancing Activities
EC: press/media	Building/Repairing Structures	Botanical Activities
EC: projects/people supervising	Complexity & Stress	Building/Repairing Structures
EC: PT/mid-level conflicts	Developing and Building Teams	cognitive attention, decision making
EC: public/ customers/clients info	EC: delegating/supervising	Complexity and Stress
EC: Regulators, Government	EC: Entertain/persuade	EC: delegating/supervising
EC: students/children/civic	EC: mid-level exchange info	EC: Entertain/persuade
Electrical/Electronic Repair, Maintenance, and Operation	EC: mid-level, info/decide/supervise	EC: mid-level exchange info
Enforcement/demanding conditions	EC: press/media	EC: mid-level, info/decide/supervise
Environmental Planning and Maintenance	EC: projects/people supervising	EC: press/media

Table continues

Initial List of Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Rater 1	**Rater 2**	**Rater 3**
Food Preparation/Processing	EC: PT/mid-level conflicts	EC: projects/people supervising
Hazardous/unpleasant work environment	EC: public/customers/clients info	EC: PT/mid-level conflicts
Heavy/offroad vehicles	EC: Regulators, Government	EC: public/customers/clients info
High-level: info/decide/resolve	EC: students/children/civic	EC: Regulators, Government
Hourly Pay vs. Salary	Electrical/Electronic Repair, Maintenance, and Operation	EC: students/children/civic
IC: lower-level supervision	Enforcement/demanding conditions	Enforcement/demanding conditions
IC: middle-level supervision	Environmental awareness	Food Preparation/Processing
IC: mid-level info/decide	Environmental Planning and Maintenance	General cognitive info processin
IC: sales/service supervision	Estimating the Quantifiable Characteristics of Products, Events, or Information	Hazardous/unpleasant work environment
Internal Business Control	Evaluating Information to Determine Compliance with Standards	Heavy/offroad vehicles
Job Security vs. Performance-Dependent Income	Food Preparation/Processing	High-level: info/decide/resolve
Language use/foreign	Handling/manipulating activities & Use of finger-controlled devices vs. physical work	Hourly Pay vs. Salary
Language use/programming	Hazardous/unpleasant work environment	IC: lower-level supervision
Lower-level: info/decide/resolve	Heavy/offroad vehicles	IC: middle-level supervision
Manipulating records	High-level: info/decide/resolve	IC: mid-level info/decide
MDM: Acquire/start/sell businesses	Hourly Pay vs. Salary	IC: sales/service supervision
MDM: financial	IC: lower-level supervision	Intellectual vs. Physical Activities
MDM: Implementing	IC: middle-level supervision	Job Security vs. Performance-Dependent Income

Table continues

Initial List of Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Rater 1	**Rater 2**	**Rater 3**
MDM: POM/HR higher-level	IC: mid-level info/decide	Knee-Bending Activities
MDM: POM/HR, lower-impact	IC: sales/service supervision	Language use/foreign
MDM: prods/services, higher impact	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others	Language use/programming
MDM: products/services, lower-impact	Inspecting Equipment, Structures, or Materials	Lower-level: info/decide/resolve
MDM: strategic planning, entire org	Instructing	MDM: Acquire/start/sell businesses
Motivation	Interpersonal Activities	MDM: financial
Negotiation	Job Security vs. Performance-Dependent Income	MDM: Implementing
Noninterpersonal communication	Judging the Qualities of Objects, Services, or People	MDM: POM/HR higher-level
Office equipment	Knee-Bending Activities	MDM: POM/HR, lower-impact
Outdoor Work	Language use/foreign	MDM: prods/services, higher impact
Personal Job Requirements	Language use/programming	MDM: products/services, lower-impact
Persuade/sell	Lower-level: info/decide/resolve	MDM: strategic planning, entire org
Physical activity	MDM: Acquire/start/sell businesses	Mental planning and scheduling
Powered tools/equipment	MDM: financial	Mental vs. Physical Activities
Processing/moving machines	MDM: Implementing	Motivation
Prof/tech: info/decide/resolve	MDM: POM/HR higher-level	Negotiation
Regulated/Standardized Work	MDM: POM/HR, lower-impact	Office equipment
Relevant Experience	MDM: prods/services, higher impact	Performing Arts Activities
Safety/damage to others	MDM: products/services, lower-impact	Personal Job Requirements
Spatial/Object Perception & Tracking	MDM: strategic planning, entire org	Persuade/sell
Special Training	Mechanical Repair, Maintenance and Operation	Physical activity
Stationary machines	Negotiation	Physical vs. Sedentary Activities
Take info, orders, interview	Office equipment	Powered tools/equipment

Table continues

Initial List of Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Rater 1	**Rater 2**	**Rater 3**
Tech/scientific/computers-machines	Outdoor Work	Processing/moving machines
Thinking Creatively	Perceptual interpretation	Prof/tech: info/decide/resolve
Treatment/therapy/safety	Personal Job Requirements	Relevant Experience
Updating and Using Relevant Knowledge	Persuade/sell	Safety/damage to others
Variable vs. regular work schedule	Physical activity	Spatial/Object Perception & Tracking
Verbal Communication	Powered tools/equipment	Special Training
White Collar vs. Blue Collar Situations	Processing/moving machines	Stationary machines
Working with Animals	Prof/tech: info/decide/resolve	Stationary machines
	Regulated/Standardized Work	Take info, orders, interview
	Relevant Experience	Tech/scientific/computers-machines
	Routine Semantic and Symbolic Activities Clerical Activities	Technical Planning and Drawing
	Safety/damage to others	Thinking Creatively
	Schedule Work and Activities	Treatment/therapy/safety
	Spatial/Object Perception & Tracking	Updating and Using Relevant Knowledge
	Special Training	Varied Intellectual vs. Structured Activities
	Stationary machines	White Collar vs. Blue Collar Situations
	Stockkeeping/Bookkeeping	Working with Animals
	Take info, orders, interview	
	Tech/scientific/computers-machines	
	Technical Planning and Drawing	
	Thinking Creatively	
	Treatment/therapy/safety	
	Updating and Using Relevant Knowledge	
	Utilization and Processing of Numerical Data	

Table continues

Initial List of Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Rater 1	Rater 2	Rater 3
	Variable vs. regular work schedule	
	Verbal Communication	
	Visual input from devices/materials	
	Visual input from distal sources	
	White Collar vs. Blue Collar Situations	
	Working with Animals	
	Take info, orders, interview	
	Tech/scientific/computers-machines	
	Technical Planning and Drawing	
	Thinking Creatively	
	Treatment/therapy/safety	
	Updating and Using Relevant Knowledge	
	Utilization and Processing of Numerical Data	
	Variable vs. regular work schedule	
	Varied Intellectual vs. Structured Activities	
	Verbal Communication	
	Visual input from devices/materials	
	Visual input from distal sources	
	White Collar vs. Blue Collar Situations	
	Working with Animals	

Initial List of Combined Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk

Combined Unique Dimensions
Activities Related to Physical Science and Technology
Activities Related to Visual Aesthetics
Activities Requiring Coordination, Balance, and Quickness
Advanced Consulting
Apparel: Specific Uniform Apparel: Optional vs. Work Clothes Apparel: Formal vs. Optional
Assembly/Fabrication Activities
Attentive/discriminating work demands
Audio attention
Autonomy of Action
Biological Testing/Inspection Activities
Body Balancing Activities
Botanical Activities
Building/Repairing Structures
cognitive attention, decision making
Complexity & Stress
Developing and Building Teams
EC: delegating/supervising
EC: Entertain/persuade
EC: mid-level exchange info
EC: mid-level, info/decide/supervise
EC: press/media
EC: projects/people supervising
EC: PT/mid-level conflicts
EC: public/customers/clients info
EC: Regulators, Government
EC: students/children/civic
Electrical/Electronic Repair, Maintenance, and Operation

Table continues

Initial List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk *(cont'd)*

Combined Unique Dimensions
Enforcement/demanding conditions
Environmental awareness
Environmental Planning and Maintenance
Estimating the Quantifiable Characteristics of Products, Events, or Information
Evaluating Information to Determine Compliance with Standards
Food Preparation/Processing
General cognitive info processin
Handling/manipulating activities & Use of finger-controlled devices vs. physical work
Hazardous/unpleasant work environment
Heavy/offroad vehicles
High-level: info/decide/resolve
Hourly Pay vs. Salary
IC: lower-level supervision
IC: middle-level supervision
IC: mid-level info/decide
IC: sales/service supervision
Improving/Monitoring the Physical Performance, Capability and Adjustment of Others
Inspecting Equipment, Structures, or Materials
Instructing
Intellectual vs. Physical Activities
Internal Business Control
Interpersonal Activities
Job Security vs. Performance-Dependent Income
Judging the Qualities of Objects, Services, or People
Knee-Bending Activities
Language use/foreign
Language use/programming
Lower-level: info/decide/resolve
Manipulating records

Table continues

Initial List of Combined Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Combined Unique Dimensions
MDM: Acquire/start/sell businesses
MDM: financial
MDM: Implementing
MDM: POM/HR higher-level
MDM: POM/HR, lower-impact
MDM: prods/services, higher impact
MDM: products/services, lower-impact
MDM: strategic planning, entire org
Mechanical Repair, Maintenance and Operation
Mental planning and scheduling
Mental vs. Physical Activities
Motivation
Negotiation
Noninterpersonal communication
Office equipment
Outdoor Work
Perceptual interpretation
Performing Arts Activities
Personal Job Requirements
Persuade/sell
Physical activity
Physical vs. Sedentary Activities
Powered tools/equipment
Processing/moving machines
Prof/tech: info/decide/resolve
Regulated/Standardized Work
Relevant Experience
Routine Semantic and Symbolic Activities Clerical Activities
Safety/damage to others
Schedule Work and Activities
Spatial/Object Perception & Tracking
Special Training
Stationary machines

Table continues

Initial List of Combined Unique Work Taxonomy Dimensions
Resulting from Taxonomy Crosswalk *(cont'd)*

Combined Unique Dimensions
Stockkeeping/Bookkeeping
Take info, orders, interview
Tech/scientific/computers-machines
Technical Planning and Drawing
Thinking Creatively
Treatment/therapy/safety
Updating and Using Relevant Knowledge
Utilization and Processing of Numerical Data
Variable vs. regular work schedule
Varied Intellectual vs. Structured Activities
Verbal Communication
Visual input from devices/materials
Visual input from distal sources
White Collar vs. Blue Collar Situations
Working with Animals

Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source Sorted by Data, People, Things, and Other Rational Categories

Taxonomic Source	D/O/P/T	Consolidation of Dimensions Sorted by Data/Other/People/Things
PAQ	D	Attentive/discriminating work demands
OAI	D	Biological Testing/Inspection Activities
CMQ*, O*NET*	D	Computer Language use/programming
OAI	D	Environmental Planning and Maintenance
O*NET	D	Estimating the Quantifiable Characteristics of Products, Events, or Information
O*NET	D	Evaluating Information to Determine Compliance with Standards
PCTAQ*	D	Individual/Job-Related Decision Making
PCTAQ*, O*NET*	D	Individual/Job-Related planning
CMQ*	D	info/decide/resolve: High-level
CMQ*	D	info/decide/resolve: Lower-level
CMQ*	D	info/decide/resolve: mid-level
CMQ*	D	info/decide/resolve: Prof/tech
O*NET	D	Judging the Qualities of Objects, Services, or People
CMQ	D	Managerial Decision Making: Acquire/start/sell businesses
CMQ	D	Managerial Decision Making: financial
CMQ	D	Managerial Decision Making: prods/services, higher impact
CMQ	D	Managerial Decision Making: products/services, lower-impact

*Note: Wording May Slightly Differ

Table continues

Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source Sorted by Data, People, Things, and Other Rational Categories *(cont'd)*

Taxonomic Source	**D/O/P/T**	**Consolidation of Dimensions Sorted by Data/Other/People/Things**
CMQ	D	Managerial Decision Making: strategic planning, entire org
OAI, WAP*	D	Routine Clerical & Administrative Activities
O*NET	D	Scheduling Work and Activities
GWI	D	Stockkeeping/Bookkeeping
CMQ	D	Take info, orders, interview
CMQ, O*NET*	D	Tech/scientific/computers-machines
OAI	D	Technical Planning and Drawing
O*NET	D	Updating and Using Relevant Knowledge
OAI, GWI, O*NET	D	Utilization and Processing of Numerical Data
PMPQ*	O	Educational Requirements
WAP	O	Hourly Pay vs. Salary
WAP	O	job-related/required APPAREL
CMQ	O	Language use/foreign
PMPQ	O	Relevant Experience
CMQ	O	Safety/damage to others
PMPQ	O	Special Training
PAQ	O	Variable vs. regular work schedule
PCTAQ*	O-Cognitive	cognitive attention, focus
PAQ, OAI	O-Cognitive	Environmental awareness
PCTAQ	O-Cognitive	General cognitive info processing
GWI, PAQ	O-Cognitive	Perceptual interpretation
GWI, OAP	O-Cognitive	Spatial/Object Perception & Tracking

*Note: Wording May Slightly Differ

Table continues

Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source Sorted by Data, People, Things, and Other Rational Categories *(cont'd)*

Taxonomic Source	**D/O/P/T**	**Consolidation of Dimensions Sorted by Data/Other/People/Things**
O*NET	O-Cognitive	Thinking Creatively
MPDQ	O-Context	Autonomy of Action
MPDQ	O-Context	Complexity & Stress
CMQ	O-Context	Enforcement/demanding conditions
CMQ, PAQ	O-Context	Hazardous/unpleasant work environment
WAP	O-Context	Job Security vs. Performance-Dependent Income
WAP	O-Context	Outdoor Work
GWI	O-Context	Regulated/Standardized Work
PMPQ, PCTAQ*	O-Interpersonal	Interpersonal Activities
WAP	O-Physical	Activities Related to Knee-Bending
OTHER	O-Physical	Activities Related to Lifting
OTHER	O-Physical	Activities Related to Pushing/Pulling
OTHER	O-Physical	Activities Related to Reaching
OAI	O-Physical	Activities Requiring Coordination, Balance, and Quickness
PCTAQ	O-Sensory	Audio attention
PAQ	O-Sensory	Visual input from devices/materials
PAQ	O-Sensory	Visual input from distal sources
MDQ	P	Advanced Consulting
CMQ*, WAP*, PAQ*, PMPQ*	P	Communication: mid-level exchange info
CMQ*	P	Communication: press/media
CMQ*	P	Communication: public/customers/clients
CMQ*	P	Communication: Regulators, Government
CMQ*	P	Communication: students/children/civic
OAI	p	Communication: Verbal

Table continues

Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source Sorted by Data, People, Things, and Other Rational Categories *(cont'd)*

Taxonomic Source	**D/O/P/T**	**Consolidation of Dimensions Sorted by Data/Other/People/Things**
OTHER	p	Communication: Written
CMQ*	P	delegating
O*NET	P	Developing and Building Teams
CMQ	P	Entertain
OAI	P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others
OAI, PMPQ	P	Instructing
CMQ	P	Managerial Decision Making: POM/HR higher-level
CMQ	P	Managerial Decision Making: POM/HR, lower-level
CMQ	P	MDM: Implementing
CMQ, O*NET*	P	Negotiation
CMQ, WAP*, O*NET*	P	Persuade/sell
OTHER	P	Project Management
CMQ*	P	Resolving conflicts
CMQ*, OAI*, WAP*, PAQ*, MDPQ*	P	Supervision: lower-level
CMQ*, OAI*, WAP*, PAQ*, MDPQ*	P	supervision: middle-level
CMQ*	P	supervision: sales/service
CMQ	P	Treatment/therapy
OAI	T	Activities Related to Assembly/Fabrication
OAI, GWI, OAP	T	Activities Related to Botany/Plants
OAI, GWI, OAP	T	Activities Related to Building/Repairing Structures
OAI, GWI, O*NET	T	Activities Related to Electrical/Electronic Repair, Maintenance

*Note: Wording May Slightly Differ

Table continues

Edited List of Combined Unique Work Taxonomy Dimensions Resulting from Taxonomy Crosswalk and Their Original Taxonomic Source Sorted by Data, People, Things, and Other Rational Categories *(cont'd)*

Taxonomic Source	**D/O/P/T**	**Consolidation of Dimensions Sorted by Data/Other/People/Things**
OAI	T	Activities Related to Food Preparation/Processing
PAQ	T	Activities Related to Handling/manipulating & Use of finger-controlled devices
O*NET	T	Activities Related to Inspecting Equipment, Structures, or Materials
OAI, GWI, O*NET	T	Activities Related to Mechanical Repair, Maintenance
GWI	T	Activities Related to Performing Arts
OAI	T	Activities Related to Physical Science and Technology
OAI, GWI	T	Activities Related to Visual Aesthetics
OAI, GWI, WAP	T	Activities Related to Working with Animals
CMQ, OAI*, O*NET*	T	Operating Heavy/offroad vehicles
CMQ	T	Operating Office equipment
CMQ	T	Operating Powered tools/equipment
CMQ, OAP*, WAP*, PAQ*	T	Operating Processing/moving machines
CMQ, OAP*, WAP*, PAQ*	T	Operating Stationary machines

*Note: Wording May Slightly Differ

Appendix I—Initial Taxonomy Person Side Ratings

Rater 1 Person Side Crosswalk to Edited List of Combined Unique Work Taxonomy Dimensions

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Attentive/discriminating work demands			X					X
D	Biological Testing/Inspection Activities		X						X
D	Computer Language use/programming		X						
D	Environmental Planning and Maintenance	X	X	X					
D	Estimating the Quantifiable Characteristics of Products, Events, or Information		X	X					X
D	Evaluating Information to Determine Compliance with Standards	X	X	X					X
D	Individual/Job-Related Decision Making	X	X	X					X
D	Individual/Job-Related planning	X	X	X					X
D	info/decide/resolve: High-level	X	X	X	X				
D	info/decide/resolve: Lower-level	X	X	X	X				
D	info/decide/resolve: mid-level	X	X	X	X				
D	info/decide/resolve: Prof/tech		X	X					
D	Judging the Qualities of Objects, Services, or People	X	X	X	X				X

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Managerial Decision Making: Acquire/start/sell businesses	X	X	X					
D	Managerial Decision Making: financial	X	X	X					
D	Managerial Decision Making: prods/services, higher impact	X	X	X					
D	Managerial Decision Making: products/services, lower-impact	X	X	X					
D	Managerial Decision Making: strategic planning, entire org	X	X	X	X				
D	Routine Clerical & Administrative Activities		X		X				
D	Scheduling Work and Activities	X	X		X				
D	Stockkeeping/Bookkeeping		X						X
D	Take info, orders, interview		X	X					X
D	Tech/scientific/computers-machines		X					X	
D	Technical Planning and Drawing		X	X					X
D	Updating and Using Relevant Knowledge	X		X					
D	Utilization and Processing of Numerical Data		X						
O	Educational Requirements		X						
O	Hourly Pay vs. Salary								
O	job-related/required APPAREL								
O	Language use/foreign		X		X				
O	Relevant Experience								
O	Safety/damage to others	X	X	X	X				X

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O	Special Training	X	X						
O	Variable vs. regular work schedule								
O-Cognitive	cognitive attention, focus						X		X
O-Cognitive	Environmental awareness								X
O-Cognitive	General cognitive info processing	X	X						
O-Cognitive	Perceptual interpretation	X		X					
O-Cognitive	Spatial/Object Perception & Tracking		X						X
O-Cognitive	Thinking Creatively	X							
O-Context	Autonomy of Action								
O-Context	Complexity & Stress						X		
O-Context	Enforcement/demanding conditions					X	X		
O-Context	Hazardous/unpleasant work environment					X	X		X
O-Context	Job Security vs. Performance-Dependent Income								
O-Context	Outdoor Work					X			
O-Context	Regulated/Standardized Work								
O-Interpersonal	Interpersonal Activities				X				
O-Physical	Activities Related to Knee-Bending					X	X		
O-Physical	Activities Related to Lifting					X	X	X	
O-Physical	Activities Related to Pushing/Pulling					X	X	X	
O-Physical	Activities Related to Reaching					X	X	X	

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O-Physical	Activities Requiring Coordination, Balance, and Quickness					X	X	X	X
O-Sensory	Audio attention								X
O-Sensory	Visual input from devices/materials								X
O-Sensory	Visual input from distal sources								X
P	Advanced Consulting								
P	Communication: mid-level exchange info	X	X		X				X
P	Communication: press/media	X	X		X				X
P	Communication: public/customers/clients	X	X		X				X
P	Communication: Regulators, Government	X	X		X				X
P	Communication: students/children/civic	X	X		X				X
p	Communication: Verbal	X	X		X				X
p	Communication: Written	X	X		X				X
P	delegating	X	X		X				
P	Developing and Building Teams	X		X	X				
P	Entertain	X		X	X				X
P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others		X	X	X				
P	Instructing	X	X	X	X				X
P	Managerial Decision Making: POM/HR higher-level	X	X						

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
P	Managerial Decision Making: POM/HR, lower-level	X	X						
P	MDM: Implementing	X	X		X				
P	Negotiation	X	X		X				
P	Persuade/sell	X	X	X	X				
P	Project Management	X	X		X				
P	Resolving conflicts	X	X		X				
P	Supervision: lower-level	X			X				
P	supervision: middle-level	X			X				
P	supervision: sales/service	X			X				
P	Treatment/therapy	X	X	X	X				
T	Activities Related to Assembly/Fabrication		X			X	X	X	X
T	Activities Related to Botany/Plants		X					X	
T	Activities Related to Building/Repairing Structures		X			X	X	X	X
T	Activities Related to Electrical/Electronic Repair, Maintenance		X			X	X	X	X
T	Activities Related to Food Preparation/Processing		X				X	X	X
T	Activities Related to Handling/manipulating & Use of finger-controlled devices		X				X	X	X
T	Activities Related to Inspecting Equipment, Structures, or Materials		X					X	X
T	Activities Related to Mechanical Repair, Maintenance		X			X	X	X	X

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Crystallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
T	Activities Related to Performing Arts	X	X	X		X	X	X	X
T	Activities Related to Physical Science and Technology		X						
T	Activities Related to Visual Aesthetics			X					X
T	Activities Related to Working with Animals	X	X			X	X	X	X
T	Operating Heavy/offroad vehicles		X			X	X	X	X
T	Operating Office equipment		X				X	X	
T	Operating Powered tools/equipment		X			X	X	X	X
T	Operating Processing/moving machines		X			X	X	X	X
T	Operating Stationary machines		X			X	X	X	X

Rater 2 Person Side Crosswalk to Edited List of Combined Unique Work Taxonomy Dimensions

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Attentive/discriminating work demands	x	x	x					x
D	Biological Testing/Inspection Activities	x	x	x				x	x
D	Computer Language use/programming	x	x	x			x		x
D	Environmental Planning and Maintenance	x	x	x			x		x
D	Estimating the Quantifiable Characteristics of Products, Events, or Information	x	x	x					x
D	Evaluating Information to Determine Compliance with Standards		x	x			x		x
D	Individual/Job-Related Decision Making	x	x	x					x
D	Individual/Job-Related planning		x	x					x
D	info/decide/resolve: High-level	x	x	x					x
D	info/decide/resolve: Lower-level	x	x	x					x
D	info/decide/resolve: mid-level	x	x	x					x
D	info/decide/resolve: Prof/tech	x	x	x					x
D	Judging the Qualities of Objects, Services, or People	x	x	x	x		x	x	x
D	Managerial Decision Making: Acquire/start/sell businesses	x	x	x					x
D	Managerial Decision Making: financial	x	x	x					x
D	Managerial Decision Making: prods/services, higher impact	x	x	x					x
D	Managerial Decision Making: products/services, lower-impact	x	x	x					x
D	Managerial Decision Making: strategic planning, entire org	x	x	x					x
D	Routine Clerical & Administrative Activities		x	x	x	x	x	x	x
D	Scheduling Work and Activities		x						x

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Stockkeeping/Bookkeeping		x						x
D	Take info, orders, interview		x		x		x	x	x
D	Tech/scientific/computers-machines	x	x	x				x	x
D	Technical Planning and Drawing	x	x	x				x	x
D	Updating and Using Relevant Knowledge		x	x			x		x
D	Utilization and Processing of Numerical Data		x	x					x
O	Educational Requirements	x	x						
O	Hourly Pay vs. Salary					x	x		
O	job-related/required APPAREL				x				
O	Language use/foreign	x	x						
O	Relevant Experience		x						
O	Safety/damage to others				x				
O	Special Training		x						
O	Variable vs. regular work schedule					x	x		
O-Cognitive	cognitive attention, focus	x	x						x
O-Cognitive	Environmental awareness		x	x					x
O-Cognitive	General cognitive info processing	x	x						x
O-Cognitive	Perceptual interpretation	x		x					x
O-Cognitive	Spatial/Object Perception & Tracking			x					x
O-Cognitive	Thinking Creatively	x	x	x					
O-Context	Autonomy of Action		x	x					
O-Context	Complexity & Stress	x			x	x	x		
O-Context	Enforcement/demanding conditions		x		x				

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O-Context	Hazardous/unpleasant work environment					x	x		
O-Context	Job Security vs. Performance-Dependent Income								
O-Context	Outdoor Work					x	x		
O-Context	Regulated/Standardized Work								
O-Interpersonal	Interpersonal Activities				x				
O-Physical	Activities Related to Knee-Bending					x	x		
O-Physical	Activities Related to Lifting					x	x		
O-Physical	Activities Related to Pushing/Pulling					x	x		
O-Physical	Activities Related to Reaching					x	x		
O-Physical	Activities Requiring Coordination, Balance, and Quickness					x	x		
O-Sensory	Audio attention								x
O-Sensory	Visual input from devices/materials								x
O-Sensory	Visual input from distal sources								x
P	Advanced Consulting	x	x	x	x				
P	Communication: mid-level exchange info		x	x	x				
P	Communication: press/media		x	x	x				
P	Communication: public/customers/clients		x	x	x				
P	Communication: Regulators, Government		x	x	x				
P	Communication: students/children/civic	x	x	x	x				
p	Communication: Verbal		x	x	x				
p	Communication: Written		x	x					
P	delegating		x		x				

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
P	Developing and Building Teams		x		x				
P	Entertain		x		x				
P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others	x	x	x	x				
P	Instructing	x	x	x	x				
P	Managerial Decision Making: POM/HR higher-level	x	x	x	x				
P	Managerial Decision Making: POM/HR, lower-level	x	x	x	x				
P	MDM: Implementing		x	x	x				
P	Negotiation	x	x	x	x				
P	Persuade/sell	x	x	x	x				
P	Project Management		x	x	x				
P	Resolving conflicts	x		x	x				
P	Supervision: lower-level		x	x	x				
P	supervision: middle-level		x	x	x				
P	supervision: sales/service		x	x	x				
P	Treatment/therapy	x	x	x	x				
T	Activities Related to Assembly/Fabrication		x	x		x	x	x	x
T	Activities Related to Botany/Plants		x	x		x	x	x	x
T	Activities Related to Building/Repairing Structures		x	x		x	x	x	x
T	Activities Related to Electrical/Electronic Repair, Maintenance		x	x		x	x	x	x
T	Activities Related to Food Preparation/Processing		x	x		x	x	x	x
T	Activities Related to Handling/manipulating & Use of finger-controlled devices		x	x		x	x	x	x
T	Activities Related to Inspecting Equipment, Structures, or Materials		x	x		x	x		x

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
T	Activities Related to Mechanical Repair, Maintenance		x	x		x	x	x	x
T	Activities Related to Performing Arts		x	x		x	x	x	x
T	Activities Related to Physical Science and Technology		x	x		x	x		x
T	Activities Related to Visual Aesthetics		x	x		x	x		x
T	Activities Related to Working with Animals		x	x		x	x	x	x
T	Operating Heavy/offroad vehicles		x	x		x	x	x	x
T	Operating Office equipment		x	x		x	x	x	x
T	Operating Powered tools/equipment		x	x		x	x	x	x
T	Operating Processing/moving machines		x	x		x	x	x	x
T	Operating Stationary machines		x	x		x	x	x	x

Rater 3 Person Side Crosswalk to Edited List of Combined Unique Work Taxonomy Dimensions

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Attentive/discriminating work demands	X	X	X					X
D	Biological Testing/Inspection Activities	X	X	X					X
D	Computer Language use/programming	X	X						
D	Environmental Planning and Maintenance	X	X	X					
D	Estimating the Quantifiable Characteristics of Products, Events, or Information	X	X						
D	Evaluating Information to Determine Compliance with Standards	X	X						
D	Individual/Job-Related Decision Making		X						
D	Individual/Job-Related planning		X	X					
D	info/decide/resolve: High-level	X	X	X					
D	info/decide/resolve: Lower-level		X	X					
D	info/decide/resolve: mid-level	X	X	X					
D	info/decide/resolve: Prof/tech	X	X	X					
D	Judging the Qualities of Objects, Services, or People	X	X	X	X				
D	Managerial Decision Making: Acquire/start/sell businesses	X	X	X	X				
D	Managerial Decision Making: financial								
D	Managerial Decision Making: prods/services, higher impact	X	X	X					
D	Managerial Decision Making: products/services, lower-impact		X	X					
D	Managerial Decision Making: strategic planning, entire org	X	X	X					
D	Routine Clerical & Administrative Activities		X						

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Scheduling Work and Activities		X						
D	Stockkeeping/Bookkeeping		X						
D	Take info, orders, interview		X		X				
D	Tech/scientific/computers-machines		X						X
D	Technical Planning and Drawing		X						X
D	Updating and Using Relevant Knowledge		X						
D	Utilization and Processing of Numerical Data		X						
O	Educational Requirements		X						
O	Hourly Pay vs. Salary								
O	job-related/required APPAREL		X						
O	Language use/foreign		X						
O	Relevant Experience		X						
O	Safety/damage to others	X	X	X					
O	Special Training		X						
O	Variable vs. regular work schedule								
O-Cognitive	cognitive attention, focus	X	X	X					
O-Cognitive	Environmental awareness	X	X	X					
O-Cognitive	General cognitive info processing	X							
O-Cognitive	Perceptual interpretation	X		X					
O-Cognitive	Spatial/Object Perception & Tracking	X		X					X
O-Cognitive	Thinking Creatively	X							
O-Context	Autonomy of Action	X	X						
O-Context	Complexity & Stress	X		X			X		

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O-Context	Enforcement/demanding conditions			X			X		X
O-Context	Hazardous/unpleasant work environment					X	X		X
O-Context	Job Security vs. Performance-Dependent Income								
O-Context	Outdoor Work								X
O-Context	Regulated/Standardized Work						X		
O-Interpersonal	Interpersonal Activities			X	X				X
O-Physical	Activities Related to Knee-Bending					X	X		
O-Physical	Activities Related to Lifting					X	X	X	
O-Physical	Activities Related to Pushing/Pulling					X	X	X	
O-Physical	Activities Related to Reaching					X	X	X	
O-Physical	Activities Requiring Coordination, Balance, and Quickness					X	X	X	X
O-Sensory	Audio attention			X					X
O-Sensory	Visual input from devices/materials			X					X
O-Sensory	Visual input from distal sources			X					X
P	Advanced Consulting	X	X	X	X				X
P	Communication: mid-level exchange info		X		X				
P	Communication: press/media		X		X				
P	Communication: public/customers/clients		X		X				
P	Communication: Regulators, Government		X		X				
P	Communication: students/children/civic		X		X				X
p	Communication: Verbal		X		X				
p	Communication: Written		X						

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
P	delegating	X			X				
P	Developing and Building Teams	X		X					
P	Entertain								
P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others	X	X	X	X				
P	Instructing	X	X	X	X				
P	Managerial Decision Making: POM/HR higher-level	X	X	X	X				
P	Managerial Decision Making: POM/HR, lower-level		X	X	X				
P	MDM: Implementing	X	X	X	X				
P	Negotiation	X	X	X	X				
P	Persuade/sell	X	X	X	X				
P	Project Management	X	X	X	X				
P	Resolving conflicts	X	X	X	X				
P	Supervision: lower-level		X	X	X				
P	supervision: middle-level		X	X	X				
P	supervision: sales/service		X	X	X				
P	Treatment/therapy		X	X	X	X	X	X	X
T	Activities Related to Assembly/Fabrication						X	X	X
T	Activities Related to Botany/Plants		X						
T	Activities Related to Building/Repairing Structures		X			X	X	X	X
T	Activities Related to Electrical/Electronic Repair, Maintenance		X				X	X	X
T	Activities Related to Food Preparation/Processing		X				X		X
T	Activities Related to Handling/manipulating & Use of finger-controlled devices		X				X	X	

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
T	Activities Related to Inspecting Equipment, Structures, or Materials		X	X					X
T	Activities Related to Mechanical Repair, Maintenance		X				X	X	X
T	Activities Related to Performing Arts	X	X	X					X
T	Activities Related to Physical Science and Technology	X	X						
T	Activities Related to Visual Aesthetics	X		X					X
T	Activities Related to Working with Animals		X	X				X	X
T	Operating Heavy/offroad vehicles		X			X	X	X	X
T	Operating Office equipment		X						X
T	Operating Powered tools/equipment		X				X	X	X
T	Operating Processing/moving machines		X			X	X	X	X
T	Operating Stationary machines		X				X	X	X

Composite Person Side Crosswalk to Edited List of Combined Unique Work Taxonomy Dimensions

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Attentive/discriminating work demands	2	2	3	0	0	0	0	3
D	Biological Testing/Inspection Activities	2	3	2	0	0	0	1	3
D	Computer Language use/programming	2	3	1	0	0	1	0	1
D	Environmental Planning and Maintenance	3	3	3	0	0	1	0	1
D	Estimating the Quantifiable Characteristics of Products, Events, or Information	2	3	2	0	0	0	0	2

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
D	Evaluating Information to Determine Compliance with Standards	2	3	2	0	0	1	0	2
D	Individual/Job-Related Decision Making	2	3	2	0	0	0	0	2
D	Individual/Job-Related planning	1	3	3	0	0	0	0	2
D	info/decide/resolve: High-level	3	3	3	1	0	0	0	1
D	info/decide/resolve: Lower-level	2	3	3	1	0	0	0	1
D	info/decide/resolve: mid-level	3	3	3	1	0	0	0	1
D	info/decide/resolve: Prof/tech	2	3	3	0	0	0	0	1
D	Judging the Qualities of Objects, Services, or People	3	3	3	3	0	1	1	2
D	Managerial Decision Making: Acquire/start/sell businesses	3	3	3	1	0	0	0	1
D	Managerial Decision Making: financial	2	2	2	0	0	0	0	1
D	Managerial Decision Making: prods/services, higher impact	3	3	3	0	0	0	0	1
D	Managerial Decision Making: products/services, lower-impact	2	3	3	0	0	0	0	1
D	Managerial Decision Making: strategic planning, entire org	3	3	3	1	0	0	0	1
D	Routine Clerical & Administrative Activities	0	3	1	2	1	1	1	1
D	Scheduling Work and Activities	1	3	0	1	0	0	0	1
D	Stockkeeping/Bookkeeping	0	3	0	0	0	0	0	2
D	Take info, orders, interview	0	3	1	2	0	1	1	2
D	Tech/scientific/computers-machines	1	3	1	0	0	0	2	2
D	Technical Planning and Drawing	1	3	2	0	0	0	1	3
D	Updating and Using Relevant Knowledge	1	2	2	0	0	1	0	1
D	Utilization and Processing of Numerical Data	0	3	1	0	0	0	0	1

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O	Educational Requirements	1	3	0	0	0	0	0	0
O	Hourly Pay vs. Salary	0	0	0	0	1	1	0	0
O	job-related/required APPAREL	0	1	0	1	0	0	0	0
O	Language use/foreign	1	3	0	1	0	0	0	0
O	Relevant Experience	0	2	0	0	0	0	0	0
O	Safety/damage to others	2	2	2	2	0	0	0	1
O	Special Training	1	3	0	0	0	0	0	0
O	Variable vs. regular work schedule	0	0	0	0	1	1	0	0
O-Cognitive	cognitive attention, focus	2	2	1	0	0	1	0	2
O-Cognitive	Environmental awareness	1	2	2	0	0	0	0	2
O-Cognitive	General cognitive info processing	3	2	0	0	0	0	0	1
O-Cognitive	Perceptual interpretation	3	0	3	0	0	0	0	1
O-Cognitive	Spatial/Object Perception & Tracking	1	1	2	0	0	0	0	3
O-Cognitive	Thinking Creatively	3	1	1	0	0	0	0	0
O-Context	Autonomy of Action	1	2	1	0	0	0	0	0
O-Context	Complexity & Stress	2	0	1	1	1	3	0	0
O-Context	Enforcement/demanding conditions	0	1	1	1	1	2	0	1
O-Context	Hazardous/unpleasant work environment	0	0	0	0	3	3	0	2
O-Context	Job Security vs. Performance-Dependent Income	0	0	0	0	0	0	0	0
O-Context	Outdoor Work	0	0	0	0	2	1	0	1
O-Context	Regulated/Standardized Work	0	0	0	0	0	1	0	0
O-Interpersonal	Interpersonal Activities	0	0	1	3	0	0	0	1
O-Physical	Activities Related to Knee-Bending	0	0	0	0	3	3	0	0

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
O-Physical	Activities Related to Lifting	0	0	0	0	3	3	2	0
O-Physical	Activities Related to Pushing/Pulling	0	0	0	0	3	3	2	0
O-Physical	Activities Related to Reaching	0	0	0	0	3	3	2	0
O-Physical	Activities Requiring Coordination, Balance, and Quickness	0	0	0	0	3	3	2	2
O-Sensory	Audio attention	0	0	1	0	0	0	0	3
O-Sensory	Visual input from devices/materials	0	0	1	0	0	0	0	3
O-Sensory	Visual input from distal sources	0	0	1	0	0	0	0	3
P	Advanced Consulting	2	2	2	2	0	0	0	1
P	Communication: mid-level exchange info	1	3	1	3	0	0	0	1
P	Communication: press/media	1	3	1	3	0	0	0	1
P	Communication: public/customers/clients	1	3	1	3	0	0	0	1
P	Communication: Regulators, Government	1	3	1	3	0	0	0	1
P	Communication: students/children/civic	2	3	1	3	0	0	0	2
p	Communication: Verbal	1	3	1	3	0	0	0	1
p	Communication: Written	1	3	1	1	0	0	0	1
P	delegating	2	2	0	3	0	0	0	0
P	Developing and Building Teams	2	1	2	2	0	0	0	0
P	Entertain	1	1	1	2	0	0	0	1
P	Improving/Monitoring the Physical Performance, Capability and Adjustment of Others	2	3	3	3	0	0	0	0
P	Instructing	3	3	3	3	0	0	0	1
P	Managerial Decision Making: POM/HR higher-level	3	3	2	2	0	0	0	0
P	Managerial Decision Making: POM/HR, lower-level	2	3	2	2	0	0	0	0

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
P	MDM: Implementing	2	3	2	3	0	0	0	0
P	Negotiation	3	3	2	3	0	0	0	0
P	Persuade/sell	3	3	3	3	0	0	0	0
P	Project Management	2	3	2	3	0	0	0	0
P	Resolving conflicts	3	2	2	3	0	0	0	0
P	Supervision: lower-level	1	2	2	3	0	0	0	0
P	supervision: middle-level	1	2	2	3	0	0	0	0
P	supervision: sales/service	1	2	2	3	0	0	0	0
P	Treatment/therapy	2	3	3	3	1	1	1	1
T	Activities Related to Assembly/Fabrication	0	2	1	0	2	3	3	3
T	Activities Related to Botany/Plants	0	3	1	0	1	1	2	1
T	Activities Related to Building/Repairing Structures	0	3	1	0	3	3	3	3
T	Activities Related to Electrical/Electronic Repair, Maintenance	0	3	1	0	2	3	3	3
T	Activities Related to Food Preparation/Processing	0	3	1	0	1	3	2	3
T	Activities Related to Handling/manipulating & Use of finger-controlled devices	0	3	1	0	1	3	3	2
T	Activities Related to Inspecting Equipment, Structures, or Materials	0	3	2	0	1	1	1	3
T	Activities Related to Mechanical Repair, Maintenance	0	3	1	0	2	3	3	3
T	Activities Related to Performing Arts	2	3	3	0	2	2	2	3
T	Activities Related to Physical Science and Technology	1	3	1	0	1	1	0	1
T	Activities Related to Visual Aesthetics	1	1	3	0	1	1	0	3
T	Activities Related to Working with Animals	1	3	2	0	2	2	3	3
T	Operating Heavy/offroad vehicles	0	3	1	0	3	3	3	3

Work Taxonomy and Classification Subcommittee

Content Model and Classification Recommendations

Job Side		Person Side							
DOT	Initial Work Taxonomy	Cognitive/Interpersonal				Physical			
D/P/T/O	Consolidation of Dimensions Sorted by Data/People/Things/Other	Fluid g	Cristallized g	Perception	Interpersonal	Strength	Stamina	Peripheral Manipulation	Sensory
T	Operating Office equipment	0	3	1	0	1	2	2	2
T	Operating Powered tools/equipment	0	3	1	0	2	3	3	3
T	Operating Processing/moving machines	0	3	1	0	3	3	3	3
T	Operating Stationary machines	0	3	1	0	2	3	3	3