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Timothy F. Field, PhD

Interim Editor

Elliott & Fitzpatrick, Inc.

1135 Cedar Shoals Drive

Athens, GA 30605

timfield@elliottfitzpatrick.com

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Dr. Scott F. Beveridge, The George Washington University, (202) 994-2473, beveridg@gwu.edu

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Dr. Molly Tschopp, Ball State University, (765) 285-8040, mkttschopp@bsu.edu

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Editorial Comment

It is with pleasure that I will serve as Interim Editor of *The Rehabilitation Professional* until the IARP Board is able to secure and appoint a permanent editor for the next term. First, however, we all appreciate and congratulate the four year plus tenure of our former editor, Dr. Scott Smith, who served with persistence and distinction in developing issues. Given the fact that our membership is comprised primarily of practicing professionals, and not academics who have much more time to author articles, all past editors have struggled in securing sufficient copy on a regular basis. Dr. Scott did an excellent job on this ever continuing task.

During my tenure as interim editor, which I expect will be brief, I will rely on old friends and colleagues to help with the development of copy that will serve to get the journal back on schedule with quality manuscripts on topics that are relevant to our membership while continuing to maintain the goals and mission of the journal. With this issue, we have achieved just that – several quality papers that are very relevant to the work of our members. The lead article is an excellent piece of research and thinking related to labor market surveys. These three authors, all very familiar with compensation cases, propose an approach which is based upon the needs and concerns of the individual claimant while consistent with the demands and expectations of relevant rules and regulations, objective data and resources, and appropriate methodologies. The paper includes a “sample format”, and is well referenced to prior research on the topic.

The next two articles by Dr. Patrick Dunn, a former editor of this journal, address certain aspects of one of most cherished federal laws which was signed during the presidency of George Bush in 1990 – the *Americans with Disabilities Act*. Dr. Dunn reviews the history of several Supreme Courts rulings relative to Title I. In the second paper on the ADA, Dr. Dunn addresses the concerns and issues relative to Title I when civil rights are considered. These two papers are important reminders of how important both disabilities rights and civil rights are to all Americans.

The final paper by David Gibson illustrates how the *American Community Survey* can be used as a resource to improve estimates of earnings. The ACS paper reflects an analysis of how education is a very significant factor in estimating earnings – especially as it relates to the discrepancy of earnings between men and women. A follow-up reaction paper by Kent Jayne adds an excellent perspective on this ACS research.

Finally, I want to thank all of these people who contributed some very fine papers on such short notice. The content of this issue is reflective of the past several decades of articles which we have come to expect from this journal. The next issue of the journal is expected to be released by early August.

Timothy F. Field
Interim Editor

Labor Market Survey/Research: An Approach Centered on the Individual and Grounded in Objective and Reliable Data

John R. Cary, Jamie N. Gamez, and Nicholas J. Choppa

OSC Vocational Services

In 2010, a cross section of Vocational Rehabilitation Counselors (VRC's) in Washington State took part in a comprehensive review of labor market survey methodology as it pertains to Washington Administrative Codes (WAC) (Donley & Johnson, 2015). This review produced the Labor Market Survey/Research (LMS/R) protocol: a combination of quantitative and qualitative data derived from scientifically surveyed published statistics and individual employer sampling, analyzed against worker-specific data, to arrive at a valid vocational opinion (Donley & Johnson, 2013). The goal is to arrive at a reliable conclusion based on these factors and VRC's professional clinical judgment (Barros-Bailey & Heitzman, 2014; Field, Choppa, & Weed, 2009). This article will review the LMS/R protocol as an option when conducting labor market research.

The Labor Market Survey

Labor Market Surveys (LMS) are used in a variety of venues where vocational assessments are required. These include Workers' Compensation, Longshore Harbor Workers/Jones Act, Social Security Disability, Long Term Disability, Civil Litigation, Marital Dissolution and Veterans Administration cases, among others (Barros-Bailey & Heitzman, 2014).

According to the Washington Administrative Code (WAC) 296-19A-010, an LMS "is a survey of employers in an industrially injured or ill worker's labor market to obtain specific information (such as physical demands and qualifications) related to job possibilities" (para. 5). Barros-Bailey & Heitzman (2014) define an LMS as "a survey methods strategy to collect qualitative and/or quantitative data for a small population census or sample about an identified labor market in order to draw inference to the client/evaluee (N=1)" (p. 168).

An LMS is used "to provide documentation in support of a vocational recommendation" (WAC 296-19A-140 (1). For the purposes of Washington State Department of Labor and Industries Worker's Compensation (L&I), an LMS is primarily used for Vocational Assessment, Plan Development, and Forensic Assessment, (WAC 296-19A-140 1(f)(i) and (ii); WAC 296-19A-130 (e), 2004; and 296-19A-135 (iii), 2004, 296-19A-010 (iii), 2004).

Concerns with Existing LMS Expressed Amongst Stakeholders

Washington State's workers' compensation stakeholders (attorneys, VRCs, employers and their representatives, and L&I) have long engaged in informal discussion related to concerns around the implementation and execution of LMS for L&I cases. (Donley & Johnson, 2015). Historically, execution of the LMS and subsequent vocational recommendations have been based solely upon a small sample size of employers, commonly understood to consist of five employer contacts in a given geographic labor market. It is unclear where the reliance on five employer contacts is derived, as it is not implicit in

the WAC. Thus, the rule of five contacts appears to be arbitrary, which introduces a note of levity to the historical execution of LMS for Washington State's workers' compensation cases (Cary, Choppa, Gamez, & Johnson, 2015). This process also entails cold calling employers to verify complex aspects of jobs in a short window of time. Such a format thus relies upon the collection of primary data, leaving vocational opinions to be based upon an inadequate sample sizes given the desired occupation studied (particularly in metropolitan areas), which more often than not lacks an adequate survey design (Donley & Johnson, 2013, Donley & Johnson 2015).

There was an overlap among stakeholders regarding this historical execution of the LMS, and while some noted issues directly related to the quality and thoroughness of work by an individual VRC, attention was primarily placed on the concern related to employer sample based LMS described above. This focus was directed at the subjective nature of responses solicited from the narrow employer sample method. Additional queries were raised relating to the amount of resources being devoted to gathering information in a sample that is routinely collected through state, federal, and non-profit organizations using scientific research based survey protocols, not just sampling (Donley & Johnson, 2013, Donley & Johnson 2015).

Development of the LMS/R Work Group

Informal conversations about historical use of the LMS for L&I cases gave way to an organized approach to address the issue, and in 2010 the need to formally review the LMS process was raised by the vocational community in Washington State. Driven by Cloie Johnson and Jan Donley, a cross section of VRC's from around the state were recruited. Within this work group, the issue was dissected, literature was reviewed, the WAC was analyzed, VRCs were surveyed, and a mission statement was created (Donley & Johnson, 2013). Donley & Johnson (2013) outlined the work group's goal in a memo to L&I:

Propose a complementary labor market research methodology based on existing objective labor market and wage data through Employment Security Department, federal and other state resources. Our intention is to uphold the current WAC guidelines while increasing LMS accuracy, strengthening case outcomes[,] and decreasing costs through reduction of subjective data collection methods, for example, direct employer contacts (para 5).

A sample LMS/R format was created, first utilizing secondary data sources to determine the suitability of an occupation, followed by primary data sources reflecting the suitability for an occupation, including claim-specific facts related to pre/post and accepted conditions (Donley & Johnson, 2013).

By February of 2015, L&I released the following in "What's New for Vocational Counselors" (The Washington State Department of Labor and Industries, 2015):

Objective approach to Labor Market Survey

Vocational representatives from the Washington Self-Insurers Association (WSIA) approached L&I to discuss how to make labor market surveys more objective, how to ensure a more consistent product[,] and how to make them easier to administer. With this goal in mind, the vocational representatives worked with a number of other vocational providers in the community to develop an alternative approach to labor market surveys (para. 1).

The alternative approach relies heavily on objective labor market data from Federal, State[,] and County resources, while still validating information with specific employers when necessary, for example when the JA [Job Analysis] doesn't match the physical requirements of the objective labor market data (para. 2).

L&I believes that all parties can benefit from a more objective approach to labor market surveys. The alternative option presented to L&I appears to provide this objectivity, while reducing burden on employers and VRCs. (para. 3)

The “alternative option” referenced is the LMS/R, and the “objective labor market data” are secondary data sources such as the Employment Security Department (ESD), WOIS/The Career Information System (WOIS), O*NET OnLine (O*NET), among others. The primary data is derived from direct employer surveying to verify worker-specific data that has not been triangulated through the limited study of quantitative sources. The LMS/R emphasizes triangulating data sources to either confirm or refute the suitability of jobs for an individual worker (N of 1) (Donley & Johnson, 2013, Donley & Johnson 2015).

Thus, the focus of the LMS/R is on following established research methodology within the field of rehabilitation to mitigate longstanding issues with reproducibility of employer surveying. This is accomplished by triangulating a wide variety of available and reliable sources, along with employer contacts, thus providing the VRC with an effective protocol for conceptualizing and interacting with the labor market. These data points, combined with the clinical judgment and experience of the VRC seeks to limit the chance for inaccurate or incomplete vocational opinions and recommendations.

Foundational Research Methodology

It is important that rehabilitation professionals rely on established methodologies in all facets of their work product (Field, Johnson, Schimdt, & Van de Bittner, 2006). The LMS/R approach to research into the labor market and formulation of a vocational conclusion should be no different. Research methodologies in the field of rehabilitation counseling are well established and should be acknowledged in forming an understanding of the newer LMS/R protocol. It is important to return to the tenets of research within the field of rehabilitation counseling in order value of the research process. To understand the foundations of the protocol being proposed in any LMS process, some research involves the formulation of a research question, the collection of data from individuals, the analysis of data, and finally the determination of the findings on the original hypothesis (Bellini and Rumrill, 2009). This remains the central tenet to the LMS/R.

As is the case for any labor market research utilized, the VRC must determine a research question founded on the purpose and necessity of data for a given occupation based upon the evaluatee’s skill set (i.e., work experience, education, aptitudes, among others), with special consideration to the nature of the individual’s functional limitations and impairment. The VRC’s training and clinical experience is essential to establishing research questions and potential hypotheses. This training is grounded in more than thirty-five years of expected competencies in the use of labor market in practice across the nation (Barros-Bailey & Robinson, 2012). Once a research question has been identified, the VRC’s objective may be to then test the hypothesis through data collection. The primary means of data collection come in the form of quantitative and qualitative design, or both (called mixed methods) (Van de Bittner, Toyofuku, & Mohebbi, 2012; Barros-Bailey & Heitzman, 2014). As noted by Bellini and Rumrill (2009), quantitative research translates observations “into numbers and a focus on summarizing and aggregating findings as a way of bringing meaning to research results,” (p. 184). With regard to qualitative sources, Bellini and Rumrill (2009) explain, “findings are arrived at using non-mathematical analytic procedures” (p. 187), i.e., interview and observations. The most accurate way to describe the research outlined in this article is mixed methods research.

While sound methodology in rehabilitation research is comprised of many additional elements worthy of detailed review, defining qualitative and quantitative research within primary and secondary sources of evidence is meant to establish the “basics” from which a VRC should be guided, in the design of their labor market analyses. What is important to note is the use of various sources of data points and collection methods to determine or test an original hypothesis. Such triangulation of data is necessary in an effort to limit and mitigate researcher bias, along with erroneous or incomplete information from a given data source.

As noted by Weed and Field (2001), the results of labor market surveys can hold significant meaning and impact on the evaluatee and, thus, “deserve to be conducted in a methodical, standardized, objec-

tive manner which replaces personal bias on the part of the rehabilitation professional with clear data to support realistic placement opportunities” (p. 123).

Below, the qualitative and quantitative elements of the LMS/R are explored to provide reference to statistically valid and relevant data collection sources and their relationship to the unique physical, mental, and skills inherent in an “N of 1” study of labor market accessibility.

Secondary Data Sources

From the outset, it is important to acknowledge the limitations associated with secondary quantitative data sources. Barros-Bailey (2013) points out that quantitative data contained in secondary data sources are outside of the control of the VRC, in that VRC’s have no way of framing the questions that are utilized to collect the data contained within those secondary sources. This is a valid limitation with regard to applying these data for the purposes of the LMS/R if the questions to be answered for a given evaluatee were not collected and contained by the source (e.g., O*NET, DOT).

Additionally, the obsolescence of sources and data is a limitation and important to consider. The Commission on Rehabilitation Counselor Certification (CRCC) Advisory Opinion #46 (2002), acknowledges the “lack of current and complete information in the DOT and O*NET” (p. 21) and note that even in their most up-to-date form may “fall short of listing every position” (p. 22). CRCC (2002) notes that secondary data sources are one source of information, “which should be supplemented with additional information such as that obtained from current labor market surveys, and that judgment should be applied when making use of any data upon which a professional relies when developing recommendations” (p. 22). This approach is consistent with WAC 296-19A-140 (g): “Additional information may be presented in the summary, but only as a supplement to the labor market survey. Additional information may include, but is not limited to, published statistical data regarding occupations and projected job openings” (para. 1).

The LMS/R addresses the use of secondary sources by emphasizing a triangulation of data from primary sources. When analyzing secondary data sources, it is incumbent upon the VRC to use their clinical judgment (or experience understood) as a critically important and central requirement of the LMS/R. The LMS/R further emphasizes the use of quantitative sources through employer surveying to acquire specifically selected data points to address the issue of level of impairment on an individual’s ability to work.

Triangulated quantitative and qualitative data analysis assists the VRC to arrive at an opinion that is reproducible and reference-ready to all involved stakeholders. This is especially true when documenting the following “necessary” geographic specific elements of labor market survey information (The Washington State Department of Labor and Industries, 2018a):

The return-to-work program goal exists in the worker’s labor market (para. 1).

The worker meets the minimum qualifications for the return-to-work goal or will meet the minimum qualifications at the conclusion of their retraining program (para. 1)

The worker has transferable skills required for the job (para. 1).

When evaluating reasonable commuting distance in the labor market (para. 2).

Additionally, because the “ability to obtain gainful employment decision [is not] based solely on fluctuation in the job market” (para. 1) (The Washington State Department of Labor and Industries, 2018b), secondary data sources become important to the VRC to weigh data in order to project employability into the future, which is not easily attainable through the collection of a small sampling of employer contacts and a sophisticated research design. This is especially true when analyzing the following considerations for employability in a fluctuating labor market (The Washington State Department of Labor and Industries, 2018b):

Lack of current or projected job openings shouldn't be the reason to find an IW eligible for plan development. Inability to work must be due to the injury or disease, not fluctuation in the labor market (para. 3).

A LMS conducted during Plan Development is positive if it shows enough jobs for the proposed goal exist to reasonably conclude the IW will be employable at plan completion (para. 7).

The LMS/R encourages the analysis and scrutiny of secondary data sources in tandem with primary data collection, especially when making decisions related to projecting employability, often times two, or more, years in to the future.

Secondary quantitative and qualitative data are obtained through sources including, but not limited to, the *Dictionary of Occupational Titles* (DOT), WOIS, ESD, and O*NET. Despite critical reviews of occupational information systems existing in the United States for over eight decades (National Academy of Sciences, 1981, 2010), these sources are considered the best available we have to do the analyses required in our work. The following is a brief overview and history of each secondary source of evidence utilized in the LMS/R.

The Dictionary of Occupational Titles

The DOT was developed out of need to address the job placement activities of the expanding public employment service in the mid 1930s, and in response to the Wagner-Peyser Act of 1933 (US Department of Labor, 1991). The Wagner-Peyser Act of 1933 was designated to establish a national employment system (US Department of Labor, 2008), which the U.S. Employment Service instituted in the form of a national occupational research program utilizing analysts in regional field offices to collect standardized occupational data (US Department of Labor, 1991).

These data have been used for decades to match people with jobs for various purposes including for occupational and career guidance, and labor market information services (US Department of Labor, 1991).

L&I requires utilization of the DOT, or other occupational coding, in identifying occupations which reflect work history, transferable skills, and/or occupational retraining goals (WAC 296-19A-140 (1)(a)). It is important to note that the most recent revisions to the DOT's were the 3rd edition (US Department of Labor, 1965) and the 4th edition (US Department of Labor, 1977). The LMS/R recognizes that the weight of the DOT information alone is not enough for making vocational determinations/recommendations, but rather serves as a source of data based on direct observation and analysis of occupations over time (US Department of Labor, 1991) while also fulfilling L&I's requirement that the DOT, or other occupational code and source, be included in an LMS (WAC 296-19A-140 (a)). The LMS/R relies on the VRC's clinical knowledge as an essential key to interpreting the validity and/or obsolescence of the DOT's data when compared against jobs as they exist today, in the geographic labor market under review.

WOIS/The Career Information System

Previously known as the Washington Occupational Information Service or simply WOIS, the WOIS/The Career Information System began in 1974 as a state agency (WOIS, 2018). In the 1980s this system became a private, 501(c)(3) nonprofit organization and changed the name to WOIS/The Career Information System (WOIS, 2018). Tami Palmer, WOIS Executive Director, (personal communication, July 12, 2015) explained that as a member state of intoCareers, a national Career Information System (CIS) based in the University of Oregon, WOIS adheres to the Alliance of Career Resource Professionals (ACRP), quality standards for computer-based career information, services, and systems.

According to T. Palmer (personal communication, July 12, 2015) data utilized in the database include national wage, employment, and job outlook data from the Bureau of Labor Statistics and O*NET, both divisions of the US Department of Labor. Additional content for the occupation descriptions is

from the *Occupational Outlook Handbook* and from publications created by professional organizations. State specific employment and outlook information comes from the Washington State Department of Employment Security (T. Palmer, personal communication, July 12, 2015). Occupations that list numbers of licensed workers in the state at the time of update are gathered from the state licensing agencies by internal WOIS analysts/researchers Security (T. Palmer, personal communication, July 12, 2015). Specific Washington state wages come direct from the Washington State Department of Employment Security. WOIS lists wages for some State of Washington jobs using data from the Washington State Human Resources office. WOIS also has access to other states' data on earnings outlook. (T. Palmer, personal communication, July 12, 2015).

In addition to these resources, WOIS' own Information Analysts and Researchers track real time labor market trends, in order to provide the most up-to-date labor market information available (T. Palmer, personal communication, July 12, 2015).

Employment Security Department (ESD)

Occupational information reported by the ESD is based on a survey of employers throughout Washington State and is collected in accordance with The Bureau of Labor Statistics' Occupational Employment Statistics standards (OES) (US Department of Labor, 2015). As explained by Anneliese Vance-Sherman, Ph.D., Regional Labor Economist at Employment Security Department (personal communication, July 13, 2015), projections are industry-based and occupational information is derived from a combination of staffing information (occupational staffing by industry), which is based on the OES survey (US Department of Labor, 2015). Additional data are procured from Help Wanted OnLine and Unemployment Insurance claims information by occupation (A. Vance-Sherman, personal communication, July 13, 2015). These lists are specific to Workforce Development Areas and are used to inform job training decisions. The lists are owned by local Workforce Development Councils throughout the state, and can be changed to reflect the local list owners' observations of economic trends in their respective areas (A. Vance-Sherman, personal communication, July 13, 2015). The ESD also provides information from WorkSource. WorkSource is a joint venture of organizations dedicated to addressing Washington State's employment needs. WorkSource Partners include state and local government agencies as well as local community-based organizations that provide a wide range of employment and training-related services (US Department of Labor, 2015). Organizations include:

- Business
- Labor
- Employment Security Department
- Workforce Development Councils Community and Technical Colleges
- Department of Social and Health Services
- Workforce Training and Education Coordinating Board
- Superintendent of Public Instruction

Information is reported through Current Employment Statistics, Washington Employment Estimates, and Labor Market and Economic Report (US Department of Labor, 2015).

The O*NET OnLine

The database is sponsored by the U.S. Department of Labor, Employment & Training Administration, and developed by the National Center for O*NET. O*NET OnLine is an application that was created for the general public to provide broad access to the O*NET database of occupational information (U.S. Department of Labor, 2011). Data collection is managed by Research Triangle Institute (RTI) International, an independent nonprofit organization (RTI, 2015a). RTI staffs two-thirds of their research core with advanced degrees (RTI, 2015b). These scientists and engineers work in multidisciplinary teams, often in collaboration with university and industry researchers (RTI,

2015b). The data collection design seeks a “statistically random sample of businesses expected to employ workers in the targeted occupations” and “a random sample of workers in those occupations within those businesses” (U.S. Department of Labor, 2011, para. 3).

O*NET OnLine offers a variety of search options and occupational data and is a unique and powerful source for continually updated occupational information and labor market research. By using a contemporary, interactive skills-based database and a common language to describe worker skills and attributes, O*NET transforms mountains of data into precise, focused occupational intelligence that anyone can understand easily and efficiently (U.S. Department of Labor, 2011).

The National Center for O*NET Development also supports My Next Move, which is a streamlined application of the data collected for use on O*NET OnLine specifically for students and job seekers (My Next Move, 2015).

Primary Data

Primary data collected from a small sample of direct employer contacts has been the mode by which most LMS's have been historically completed for Washington State workers' compensation cases (Donley & Johnson, 2015). Primary data has been mostly optional and limited to supplementing employer contacts (WAC 296-19A-140 (g)). Barros-Bailey and Heitzman (2014) review the complexity of a valid and reliable Survey Design when utilizing an interview-based survey, and explore the sophistication by which LMS through employer sample or census surveying should be executed. Barros-Bailey (2012a) sets forth a 12 step methodology by which a survey instrument is designed, data are collected, analyzed, and reported, when a review of secondary quantitative data is insufficient by itself or requires supplementation (Barros-Bailey & Heitzman, 2014).

Unfortunately, based on the feedback solicited from VRCs, attorneys, employers, and L&I representatives in Washington state, transparency in research questions, sample framing, data collection, and analysis of data has called into question whether a true methodology is being sufficiently followed in the execution of LMS in accordance with WAC (Donley & Johnson, 2015). Additionally, the variance in VRC qualifications per WAC 296-19A-210 (a), Bachelor's Degree and/or Master's Degree and up to 3 years of internship status, does not always translate to immediate understanding of a high level skills, such as LMS, which is often delegated to VRC Interns.

Hence the LMS/R encourages beginning with secondary quantitative and qualitative data from reliable sources to distill an understanding of the job under review, and then seek qualitative input to determine if in fact an occupation is suitable for retraining or if an individual is able to obtain and perform the work (Donley & Johnson, 2014). In most other venues of vocational rehabilitation, depending on the VRC's experience and depth or breadth of secondary data sources, the secondary data sources may be sufficient to arrive at an opinion (Barros-Bailey, 2012a). However, in accordance with WAC, it is advisable that primary data sources are used to support opinions discovered by review of secondary sources.

The key component is the VRC's capacity to utilize the quantitative and qualitative data to address the appropriateness of a recommended occupation (Donley & Johnson, 2014) and to reach a point of Opinion Validity© (Barros-Bailey & Neulicht, 2005) through careful analysis of quantitative and qualitative data.

Coupled with supportable secondary data, other objective primary data collections methods, such as job analysis and employer contacts (survey research) are used to clarify claim-specific criteria related to the individual under study (Donley & Johnson, 2014). The proposed sample format provides a summary of the principle data sources used in the LMS/R.

Previous Job Analysis (JA)

According to WAC 296-19A-010 (6) a job analysis (JA) is: “the gathering, evaluating, and recording of accurate, objective data about the characteristics of a particular job” (para. 6). Previously completed

JAs are reflective of positions that are generalizable to occupations within the general labor market and are geographically specific. Especially when completed on site as a stand-alone job analysis (SAJA) for the job of injury (JOI) or past transferable skill/work history position, this primary data collection observation source is valuable and essential for inclusion to the development of an LMS/R opinion. Thus, JAs can serve as a comprehensive qualitative data point in the critical analyses of the labor market.

The methodology set out for developing a JA is clear in WAC 296-19A-170, paraphrased for brevity: (1) Include identifying information on each page . . . the specific job title surveyed . . . an accurate reflection/description of the job, then list the specific job surveyed, the occupational code and the source from which the occupational code was obtained; (2) Note . . . where the provider completed the job analysis and the date of the job analysis. If the analysis is based on site specific information, include the employer name and employer contact person(s) name(s) with phone number(s); (3) Describe the essential functions . . . necessary, and integral parts of a job performed by a worker; (4) List the tools and equipment required to do the job; (5) Evaluate and describe the skills required to perform the job; (6) Evaluate and describe the physical demands and their frequency required to perform the job, utilizing the physical demands . . . and the source from which the physical demands listing was obtained . . .; (7) Describe, if pertinent, any environmental hazards encountered on the job; (8) Describe possible modifications to the job for employer job offers or job modifications; (9) A section for medical approval, signature, and comments; and (10) The signature of the vocational rehabilitation provider presenting the job analysis for review and date signed (para. 1-10).

RCW 51.32.090 (4) stipulates that workers are entitled to a JA during the intervention phase of vocational services, thus resulting in a bank of JA accessible by large vocational counselor firms and sole proprietors alike, from which to analyze as primary sources of information. In the LMS/R protocol, significant claim-specific, and geographically appropriate, portions for the jobs under review are analyzed and summarized as they pertain to the specific worker under review. The redacted JAs are attached to the LMS/R and qualify as a primary data source for employer contact. (Donley & Johnson, 2015).

Labor Market Survey/Employer Sample or Census Surveying

In the LMS/R, employer sampling is reserved for focusing on refined, claim-specific criteria, applicable to the individual under review, which have not been or could not be gathered through review of secondary research (Donley & Johnson, 2014). The technique is not used to supplement data collected in the secondary data collection process to support an already established opinion that an occupation is Positive or Negative (i.e., quantitative data that supports or refutes the qualifications, wage, availability, and physical demands). Rather, the employer sample or census phase is one of two possible components with the other component being secondary data in achieving Opinion Validity© (Barros-Bailey & Neulicht, 2005; Choppa, Johnson, & Neulicht, 2014). Workers represent their own (N of 1) variable data set (e.g., nature of injury, functional capacities, occupational/academic history/experience), which is compared against the aggregated data gathered through the course of LMS/R judgment (Barros-Bailey & Heitzman, 2014; Donley & Johnson, 2014; Field, Choppa, & Weed, 2009). Specific employer contacts are reserved for addressing those worker-specific variables not present or adequately defined during the course of LMS/R research (e.g., level of English comprehension required for the work activity, reasonable accommodations available) while collecting the other data required by the WAC (Donley & Johnson, 2013; Donley & Johnson, 2014; Donley & Johnson, 2015).

The critical component is the VRC's analysis utilizing professional, clinical judgment after each data source to provide findings and opinions relevant to the outcome of each data source's contribution in support of or not in support of the injured worker's employability (Barros-Bailey & Neulicht, 2005; Choppa et al., 2014; Donley & Johnson, 2013; Donley & Johnson, 2014; Donley & Johnson, 2015). Inconsistencies or consistencies in data, and emphasis on the appropriate recommendation is based

upon the VRC's knowledge, training, and experience combined with professional clinical judgment, and should be provided for each data resource under VRC comment (Donley & Johnson, 2015).

It should be noted that all the aforementioned sources included in the LMS/R (DOT, WOIS, ESD, O*NET, Previous JA, LMS/Employer Sampling) are already existing within the VRC's toolbox. VRC's are expected to be familiar with these sources in their clinical work in areas of occupational research and retraining plan development. VRC's are already skilled in navigating and interpreting these data. It is also recommended that VRC's, particularly VRC Interns and their Supervisors, establish a transparent Survey Design (Barros-Bailey, 2012a) and properly applied methodology (Barros-Bailey, 2012b; Van de Bittner, Toyofuku, & Mohebbi, 2012).

Sample Format

The product of the work started in 2010 by the LMS/R Work Group in Washington State was a sample LMS/R format. The following represents a simplified outline of the LMS/R format developed by the 2010 work group:

Table 1

LMS/R Sample Format

(County) Labor Market Survey/Research

This labor Market Survey/Research is submitted as the documentation in support of the vocational recommendation. The labor Market Survey/Research is a combination of secondary data that may include ESD/WorkSource, WOIS, O*NET, DOT, Job analysis(es), and the primary data from employer sample or census specific to the above-identified individual.

The labor market survey/research methodology is based on existing objective labor market and wage data from the Washington State Employment Security Department, federal, and other state resources.

- *Dictionary of Occupational Titles* (DOT)
- ESD/WorkSource (which provides job growth and trend information, in-demand/neutral/not in demand occupational information, etc.)
- Washington Occupational Information System (WOIS) (Hybrid of federal, state, county information as well as employer sampling, etc.)
- O*NET (general occupational data with state and regional specific wages).
- Job analysis (JA) (using past job analyses obtained from employer contacts within the VRC's practice for physical demands, wages, minimum qualifications, etc.)
- Selective employer contacts for clarification of conflicting or unknown data.

Labor Market Research Summary

Claim-specific Criteria: Claimant, injury, Date of Injury, Pattern of employment, job at time of injury, geographic area, education, experience and skills (summarized), and what the worker's primary physical restrictions are; worker's injury (accepted conditions). Are there any pre-existing conditions that need to be considered followed by restrictions, limitations, and which job analysis is approved?

Occupational Goal per Dictionary of Occupational Titles (DOT):

DOT Title/code (Industry), alternate titles:

Description:

GOE:

STRENGTH:

GED: Reasoning, Mathematics, and Language (RML):

SVP:

DLU:

VRC COMMENT: (Analysis, findings, and opinion(s) relevant to the outcome stated above, addressing any inconsistencies or providing applicable emphasis to the recommendation based upon the qualitative and quantitative data findings along with knowledge, training, and experience combined with professional and clinical judgments.)

LABOR MARKET RESEARCH

PART I: SECONDARY DATA **RELEVANT LABOR MARKET/COUNTY:**

WOIS (The Career Information System):

Terms researched:

Description:

Training: Wages:

Occupational Outlook:

(county) County Outlook:

Washington Outlook:

VRC COMMENT:

WORKSOURCE/(county):

Terms researched:

Description:

Training:

Wage:

Growth:

(county) County:

Demand:

Updated:

VRC COMMENT:

National Data: (Growth, Wages)

O*NET:

Terms researched:

SOC CODE:

Description:

Sample of reported job titles:

Tasks:

Training/Job Zone:

Education:

Wages:

Projected growth in Washington State:

VRC COMMENT:

PART II: EMPLOYER SAMPLING:

PART A: JOB ANALYSES

These previously completed job analyses are reflective of occupations within the injured worker's geographic labor market which represent actual positions previously analyzed. Significant portions are summarized below. Actual JAs are attached.

#1: Title:

Employer/Location:

Phone#:

Person Contacted:

Date:

Physical Demands:

Qualifications:

License/Certification:

Work Pattern: ☐ FT ☐ PT

Claim-specific Criteria:

#2: Title:

#3: Title:

VRC COMMENT:

PART B: LABOR MARKET SURVEYS - CASE SPECIFIC CRITERIA

SUMMARY OF EMPLOYER SAMPLE/CENSUS SURVEYING

	Employer Contacts	Date	Positive/Negative	Why Negative?
1				
2				
3				

Note Claim-specific Criteria:

DOT NO

SVP NO

GOE

CLAIM #

WORKER:

DATE OF CONTACT

SURVEYOR:	PHONE
JOB TITLE	
	(Per Employer)
(Per DOT)	
EMPLOYER:	
CITY/CO:	TELEPHONE:
PERSON CONTACTED:	TITLE
WORK PATTERN:	NUMBER OF OPENINGS
DATE OF LAST HIRE:	NUMBER OF POSITIONS
WAGES:	
JOB DESCRIPTION:	
MINIMUM QUALIFICATIONS	
CLAIM-SPECIFIC CRITERIA:	
OTHER RELEVANT INFORMATION:	

The above sample LMS/R Format can be used to gather and present the quantitative and qualitative primary and secondary data sources outlined in this article.

Summary and Conclusions

The LMS/R format provides for a comprehensive analysis of the individual or evaluatee's labor market, intended to mitigate the risk of otherwise erroneous or incomplete findings, and places the emphasis on the use of the VRC's professional clinical judgment that rests upon a database of qualitative and quantitative evidence from primary and secondary sources. A format to record labor market primary and secondary information was introduced emphasizing an individual's case facts and residual functional profile as the anchor for the collection of the different types of labor market evidence to ultimately achieve Opinion Validity®. The LMS/R protocol promotes a consistent professional, objective, and dynamic approach for the VRC, aligned with calls for greater reliability in the peer reviewed and published methodology. The format is not a paint-by-numbers model using existing data, or based on an extremely small sample of the labor market, neither are these data being applied to an individual without context. The utilization of primary and secondary labor market data promoted in the LMS/R is intended to provide the VRC with a clear foundation of the labor market for specific occupations under review, without which a professional cannot arrive at a defensible and replicable opinion regarding an individual's ability to work. The use of primary and secondary data is a foundational component of strong research methodology for the rehabilitation field. These sources provide a database allowing for the triangulation of data – whether qualitative or quantitative – thus reducing broad data sources through professional and clinical judgment to arrive at sound and objective vocational opinions, thereby limiting reliability on erroneous or incomplete data and findings.

VRCs hold requisite education, are nationally certified, must adhere to a code of ethics, and are experienced and qualified to utilize their specialized knowledge to provide analyses and labor market survey/research. The LMS/R proposes to reduce redundancy, promote a higher level of objectivity, and help to neutralize LMS validity concerns regarding employer and respondents such as employer size, relevance to job, respondent's position, tenure, familiarity with job, general mood, the way a question is phrased, resistance to interview, etc. This comprehensive and transparent analysis completed by

the VRC may promote accuracy, strengthen case outcomes, and decrease costs through the reduction of subjective data collection methods.

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Author Notes

John R. Cary, Nicholas J. Choppa, and Jamie N. Gamez are employed at OSC Vocational Systems, Inc. in Bothell, WA.

A Review and History of Supreme Court Rulings Related to Title I of the Americans with Disabilities Act

Patrick L. Dunn

The University of Tennessee

The Americans with Disabilities Act of 1990 (ADA) provides broad protections from disability-based discrimination in a broad array of categories. Title I of the ADA applies to employment of persons with disabilities, and congressional language relevant to the act indicates that disability-based discrimination in employment was a key provision. However, during the early years of the ADA the Supreme Court, through a series of decisions, interpreted the legislation in ways that weakened these protections. The following article is a historical review of these cases, the Court's reasoning, and the successful efforts of Congress to restore the fullest possible protections for persons with disabilities in the workplace.

In 1990 Congress passed the Americans with Disabilities Act (ADA), Pub. L. 101-336, 104 Stat. 327, to provide protections from discrimination for persons with disabilities in the broad categories of employment, public entities and public transportation, commercial facilities and public accommodations, and telecommunications. The ADA is the federal recognition of the rights of persons with disabilities to the full benefits of citizenship. The findings of Congress state "individuals with disabilities continually encounter various forms of discrimination, including outright intentional exclusion, the discriminatory effects of architectural, transportation, and communication barriers, overprotective rules and policies, failure to make modifications to existing facilities and practices, exclusionary qualification standards and criteria, segregation, and relegation to lesser services, programs, activities, benefits, jobs, or other opportunities," 42 U.S.C. § 12101(a)(5) and "the continuing existence of unfair and unnecessary discrimination and prejudice denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and nonproductivity." 42 U.S.C. § 12101(a)(8).

Laws passed by Congress must have a basis in constitutional law, and must, if challenged, bear up to this challenge under the scrutiny of the Supreme Court. The rights of persons with disabilities to the benefits of citizenship have been interpreted differently in regard to different types of rights. The history of the Court's treatment of discrimination related to those elements of the ADA other than employment has seen affirmation of the intent of Congress in the Act. In regard to employment, however, the Court has often been at odds with the language of the Act. This has included narrowed definitions of disability and rejection of certain protections that it has historically recognized for other minority groups.

The purpose of this article is to review the history of ADA protections in employment for persons with disabilities. This review will include a review of both actions by the Court and congressional responses. To place this review in context, a review of principles and rules relevant to fundamental rights, employment law, and protection of civil rights is presented.

Fundamental Rights

Fundamental rights of citizens of the United States are vested in the United States Constitution, largely through the Bill of Rights. The Bill of Rights composes the first ten amendments to the Constitution, and the first eight amendments provide protection from federal government interference in a wide array of actions related to freedoms of expression, rights to due process, certain rights to property, rights in proceedings of courts, and others. U.S. Const. amends. I-VIII. Each of the rights enshrined in the Bill of Rights are not absolute, however, and the boundaries have been established through decisions of the Supreme Court (Court) over the history of the republic.

Amendment Nine to the Constitution is sometimes viewed as a source of rights of citizens beyond those enshrined in the Bill of Rights proper. The Amendment states, "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people." U. S. Const. Amend. IX. In practice, the Ninth Amendment is not viewed as conveying rights in and of itself, but rather is used by the Court to justify the recognition of fundamental rights of citizens beyond those actually enumerated in the Constitution itself (Chemerinsky, 2009). The Court on occasion will recognize fundamental rights through cases that come before it, and has done this numerous times. Some of the fundamental rights recognized outside of the Bill of Rights, and the cases in which they were recognized, include the right to marry (*Loving v. Virginia*, 388 U.S. 1 (1967)), the right to procreate (*Skinner v. Oklahoma*, 316 U.S. 545 (1942)), the right to use contraception (*Griswold v. Connecticut*, 381 U.S. 479 (1965)), the right to have an abortion (*Roe v. Wade*, 410 U.S. 113 (1973)), the right to refuse medical treatment (*Cruzan v. Director, Missouri Dept. of Health*, 497 U.S. 261 (1990)), and the right to interstate travel (*Saenz v. Roe*, 526 U.S. 489 (1999)).

Fundamental rights are considered to be virtually sacrosanct, but only within rational limits. When a right has been recognized as a fundamental right, the Court may nonetheless place or recognize certain restrictions to it. In other circumstances, the right might be taken away but only after due process requirements are met, meaning that the individual has a right to notice of their right being in jeopardy, a right to challenge this in a hearing, and equitable application of the law to their case.

Enforcing Fundamental Rights

The government and the states have powers to enforce laws either nationally or within their own boundaries. Each branch of the federal government has certain enumerated powers permitting it to perform certain actions of government. Those of the legislative branch may be found in Article I of the Constitution, those of the executive branch in Article II, and of the judicial branch in Article III. U.S. Const. arts. 1-3. The legislative branch has the greatest power to create protections in law for the rights of citizens, but in order to do so it must act within its enumerated powers within the Constitution.

Many of the enumerated powers of Congress are created to perform those acts which states could not do efficiently or without causing confusion or conflict, such as national defense or minting of money. One of the enumerated powers has become very effective, however, in allowing Congress to pass civil rights legislation, that of the Commerce Clause. The Commerce Clause states indicates that Congress has the power "To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes." U.S. Const., art. 1, § 8, cl. 3. This power was used only in a very limited way until the 1930s, when the Court began to make decisions permitting sweeping economic regulation in accordance with the New Deal. In the 1960s, Congress began passing civil rights legislation, most notably the Civil Rights Act of 1964, Pub. L. 88-352, 78 Stat. 241, to affect discriminatory activity by private (as opposed to public) entities using the rationale that commercial activities were part of the stream of interstate commerce and thus within Congress's regulatory purview, a view that was upheld by the Court in numerous subsequent decisions.

While the Commerce Clause gives Congress regulatory power over private entities engaged in commercial activity, power to regulate state activity is somewhat more complicated. Because the United States is a federal system, states are technically independent from the federal government in those

actions that are not specifically forbidden to them by the Constitution. The Bill of Rights itself was initially viewed by the Court as applicable only to federal government action and not actions by individual states. *Barron v. Baltimore*, 32 U.S. (7 Pet.) (1833). Furthermore, states were protected by the principle of sovereign immunity, preventing them from liability of suits by private citizens, after the ratification of the Constitution's Eleventh Amendment in 1795 ("The Judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by Citizens of another State, or by Citizens or Subjects of any Foreign State.). U.S. Const. amend. XI.

This changed in 1868 with the passage of the Fourteenth Amendment to the Constitution. The Fourteenth Amendment states, in part:

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws. U.S. Const. amend. XIV, § 1.

This amendment was significant in several ways. First, it gave a constitutional definition to "citizenship," which had been lacking since its original writing. Secondly, it recognized the rights of citizens to protection of the law and forbade states from creating laws that abridged these rights with inequity, or without provisions for due process. The other significant element of the Fourteenth Amendment was Section 5, which simply states, "The Congress shall have power to enforce, by appropriate legislation, the provisions of this article." U.S. Const., amend. XIV, § 5. Section 5 gives Congress the power to breach state sovereign immunity and it can impose restrictions on state lawmaking that burden fundamental rights or attempt to apply the law differently to groups of individuals who share some indelible characteristic, such as a particular racial classification or national origin.

The Court began to analyze cases of laws that propose to burden fundamental rights or which make distinctions to "discrete and insular minorities," *United States v. Carolene Products Co.*, 304 U.S. 134 (1938) beginning in the 1930s. Such laws are permitted to stand only if there is a compelling justification for such action, that the remedy proposed by the law is the least restrictive method to obtain the desired outcome, and that the law is tailored narrowly in regard to its usurpation of rights. Other laws are usually analyzed only with ordinary scrutiny under what is called the rational basis test, meaning that the law must have a rational relationship to a legitimate government purpose. Thus, when the state or federal government creates a law using a legitimate regulatory power that does not infringe on basic freedoms or make group distinctions, the law is usually allowed to stand.

The use of heightened scrutiny and rational basis reasoning has factored into the Court's view of laws concerning persons with disabilities, both in regard to Title I and state action under Title II.

Work, in a generic sense, has never been recognized as a fundamental right by the Court, although discrimination by states against certain groups can be sanctioned by Congress using either the Fourteenth Amendment or the Commerce Clause. State action would need to be sanctioned using the Fourteenth Amendment, and specifically Title I of the ADA, covering employment, would be the rationale for Congress to do so. However, the Court found, in *Board of Trustees of University of Alabama v. Garrett*, 531 U.S. 356 (2001), that state employees cannot breach sovereign immunity of a state to receive punitive monetary damages, reasoning that the congressional empowerment to invoke Fourteenth Amendment remedies only applies where there has been a historical record of unconstitutional discrimination against a group of citizens, and such record did not exist in regard to state actions in employment against persons with disabilities. The holding states: Congress is the final authority as to desirable public policy, but in order to authorize private individuals to recover money damages against the States, there must be a pattern of discrimination by the States which violates the Fourteenth Amendment, and the remedy imposed by Congress must be congruent and proportional to the targeted violation. Those requirements are not met here, and to uphold the Act's application to the States would allow Congress to rewrite the Fourteenth Amendment(.) *Garrett* at 374.

Note, however, that the decision did not limit injunctive relief such as an order to apply ADA-based remedies to restore the employees to their jobs.

In regard to Title II, claims concerning state actions in public accommodations, as opposed to employment claims, the Court has upheld the use of the Fourteenth Amendment in its decision in *Tennessee v. Lane*, 541 U.S. 509 (2004). Access to public facilities such as courts and courthouses must be made accessible as demanded by the ADA; to fail to do so denies persons with disabilities the right to numerous fundamental rights. The Court did find the kind of historical unconstitutional discrimination against persons with disabilities that justify Congressional application of the Fourteenth Amendment, and abrogation of sovereign immunity.

The Commerce Clause applies to congressional actions of private employers in regard to Title I of the ADA. These claims, including punitive damages claims, have been allowed to move forward, but not without controversy in the early days of the ADA. The definition of disability, who is a person with a disability, and the application of these matters was modified significantly by the Court in a series of cases in the late 1990s and early 2000s. The remainder of this article discusses the history of these actions by the Court and the congressional legislative response to restore the fullest protections for persons with disabilities under Title I.

Title I of the ADA: Employment

Title I of the ADA includes definitions of terms that are familiar to those who work with persons with disabilities who are seeking employment, such as qualified individual, reasonable accommodation, and undue hardship. 42 U.S.C. 126 §§ 12111 (8-10). Discrimination in employment is defined at 42 U.S.C. 126 § 12112, with the general rule stated as, “No covered entity shall discriminate against a qualified individual on the basis of disability in regard to job application procedures, the hiring, advancement, or discharge of employees, employee compensation, job training, and other terms, conditions, and privileges of employment,” 42 U.S.C. 126 § 12112 (a). Within the early years of the ADA, however, the Act was weakened by a series of rulings by the Court determining the meaning of the term “disability” as it is applied to employment. The four cases that are relevant in this history are the three cases of the *Sutton* trilogy and *Toyota Motor Manufacturing, Kentucky, Inc. v. Williams*.

The Sutton Trilogy. June 22, 1999 was a significant day in the history of Title I of the ADA. On this date the Court delivered three rulings which limited the definition of disability and, as a result, protections for persons with disabilities in employment. These three cases became known as the *Sutton* trilogy after the leading and most verbose ruling, that in *Sutton v. United Air Lines, Inc.*, 527 U.S. 471 (1999). The plaintiffs were twin sisters with severe myopic vision, correctible to 20/20 with corrective lenses, were denied training by the defendant airline in 1992 after applying for employment as commercial airline pilots based on the airline’s policy that applicants must have uncorrected vision of 20/100 or better. The plaintiffs sued the airline claiming discrimination on the basis of disability, or alternately as being regarded as a person with a disability, under the ADA. Plaintiffs also pointed to Equal Employment Opportunity Commission (EEOC) guidelines that indicated that the presence of disability should be considered without use of mitigating measures. The lower courts held that plaintiffs did not have a disability because they were unimpaired in any major life activity because their vision was correctible, nor should they be considered as having a disability. The Court affirmed the decision of the lower courts, with the holding tied to considerations of “mitigating measures” that improve physical function, and ruled that the determination of disability must be made after the effects of mitigating measures are taken into consideration. Justice O’Connor, writing for the majority, stated in the holding:

The Act defines a “disability” as “a physical or mental impairment that *substantially limits* one or more of the major life activities” of an individual. Because the phrase “substantially limits” appears in the Act in the present indicative verb form, we think the language is properly read as requiring that a person be presently—not potentially or hypothetically—substantially limited in order to demonstrate a disability. A “disability” exists only where an impairment “substantially

limits” a major life activity, not where it “might,” “could,” or “would” be substantially limiting if mitigating measures were not taken. A person whose physical or mental impairment is corrected by medication or other measures does not have an impairment that presently “substantially limits” a major life activity. To be sure, a person whose physical or mental impairment is corrected by mitigating measures still has an impairment, but if the impairment is corrected it does not “substantially limi[t]” a major life activity.

The definition of disability also requires that disabilities be evaluated “with respect to an individual” and be determined based on whether an impairment substantially limits the “major life activities of such individual.” Thus, whether a person has a disability under the ADA is an individualized inquiry. (. . .)

The (EEOC) guidelines’ directive that persons be judged in their uncorrected or unmitigated state runs directly counter to the individualized inquiry mandated by the ADA. The agency approach would often require courts and employers to speculate about a person’s condition and would, in many cases, force them to make a disability determination based on general information about how an uncorrected impairment usually affects individuals, rather than on the individual’s actual condition. For instance, under this view, courts would almost certainly find all diabetics to be disabled, because if they failed to monitor their blood sugar levels and administer insulin, they would almost certainly be substantially limited in one or more major life activities. A diabetic whose illness does not impair his or her daily activities would therefore be considered disabled simply because he or she has diabetes. Thus, the guidelines approach would create a system in which persons often must be treated as members of a group of people with similar impairments, rather than as individuals. This is contrary to both the letter and the spirit of the ADA. *Sutton* at 481-84. (Citations omitted).

The effect of the *Sutton* case was to eliminate vast numbers of people from the class of persons with disabilities. The holding justified this position by citing language in the text of the ADA itself giving the number of people with disabilities as 43 million, and rationalized that if unmitigated medical conditions were included in the congressional intent in the Act, this number would be much higher. *Sutton* at 487. In addition, the Court held that to be substantially impaired in the major life activity of working an individual must be unable to perform a “broad class of jobs,” rather than a single position. This too had the effect of limiting the protections for persons with disabilities in employment under the ADA. *Sutton* at 491-94.

The other two component cases of the *Sutton* trilogy reached similar conclusions. *Murphy v. United Parcel Service, Inc.*, 527 U.S. 517 (1999), a mechanic was hired for a job with an essential function of driving heavy vehicles and requiring health certification from the Department of Transportation. The plaintiff had long-standing hypertension and did not meet the requirements for the health certification, but, nonetheless, it was erroneously granted. After one month the error was discovered, the certification revoked, and the plaintiff dismissed from the job. Citing *Sutton*, ruled the Court found that medication mitigated medical condition, did not limit him from performing major life activities, and therefore the plaintiff was not a person with a disability as defined by the ADA. Working was not viewed as an impaired life activity because the Petitioner was capable of performing numerous jobs as a mechanic that did not involve driving heavy vehicles. *Albertson’s, Inc. v. Kirkinburg*, 527 U.S. 555 (1999) was the third case in the trilogy and also concerned an erroneous certifications for truck driving, but in regard to amblyopia (unequal vision between left and right eyes), with the error discovered after approximately one year. The employee, however, was eligible for and was granted a waiver under an experimental program from the Department of Transportation. The defendant Albertson’s had meanwhile dismissed the driver and refused reinstatement to reinstate even after the waiver had been granted. The Court, similar to the other two cases, held that the plaintiff employee did not have a disability, and that a “difference” in how the employee saw was different from a “significant restriction” in how they saw; therefore, there was not a significant limitation in a major life activity. Rather than considering whether the employee was limited from a broad range of jobs, the Court justified its holding on the basis that the defendant employer was not required to participate in a regulatory experiment of a federal agency and could dismiss the employee using existing regulations.

After the *Sutton* trilogy the definition of disability had essentially been rewritten by the Court. The effect was to in essence rewrite the ADA in such a way that its potential effects were far less potent. A final case, *Toyota Motor Manufacturing, Kentucky, Inc. v. Williams*, further limited the employment protections of the ADA.

Toyota Motor Manufacturing, Kentucky v. Williams. *Toyota Motor Manufacturing, Kentucky, Inc. v. Williams*, 534 U.S. 184 (2002), decided three years after the *Sutton* trilogy, was another case in which the Court limited the employment protections of the ADA, and like the trilogy the Court provided its own definitions of disability. The plaintiff was an employee at the defendant's automobile manufacturing plant and was initially employed as a production worker, but acquired carpal tunnel syndrome and tendinitis, filed a workers' compensation claim which was settled, and returned to work after filing an ADA complaint. Plaintiff was placed in a quality control operation which had four components, but those operations that required more manual activity were taken out of her rotation. After approximately three years the defendant required her to begin performing the full cycle of quality control tasks, including those that required more use of her upper extremities. This led to increased absences and an eventual medical order of no work of any kind, at which point the defendant terminated the plaintiff for poor work attendance.

The plaintiff brought suit under the ADA and other statutes, claiming protections as a person with a disability via limitations in major life activities of "(1) manual tasks; (2) housework; (3) gardening; (4) playing with her children; (5) lifting; and (6) working" (*Toyota* at 190) and also as a person with a record of impairment and being regarded as having an impairment. The trial court rejected plaintiff's claims of disability, rejecting the notion that gardening, playing with children, or housework were major life activities, and while accepted that manual tasks, lifting and working were major life activities that the plaintiff defeated her claim that she was disabled through insistence that she could perform certain tasks at her former employer. On appeal, the Sixth Circuit Court of Appeals reversed the decision, holding that her inability to perform a full range of manual tasks (without considering the issue of lifting or working) disqualified her from a broad class of employment, and thus the plaintiff was disabled.

The Supreme Court reversed the decision of the appeals court and in doing so considered the question of "the proper standard for assessing whether an individual is substantially limited in performing manual tasks." *Toyota* at 192. Justice O'Connor, writing for the majority, explained how the court arrived at that standard:

"Major life activities" (. . .) refers to those activities that are of central importance to daily life. In order for performing manual tasks to fit into this category—a category that includes such basic abilities as walking, seeing, and hearing—the manual tasks in question must be central to daily life. If each of the tasks included in the major life activity of performing manual tasks does not independently qualify as a major life activity, then together they must do so.

That these terms need to be interpreted strictly to create a demanding standard for qualifying as disabled is confirmed by the first section of the ADA, which lays out the legislative findings and purposes that motivate the Act. When it enacted the ADA in 1990, Congress found that "some 43,000,000 Americans have one or more physical or mental disabilities." If Congress intended everyone with a physical impairment that precluded the performance of some isolated, unimportant, or particularly difficult manual task to qualify as disabled, the number of disabled Americans would surely have been much higher.

We therefore hold that to be substantially limited in performing manual tasks, an individual must have an impairment that prevents or severely restricts the individual from doing activities that are of central importance to most people's daily lives. The impairment's impact must also be permanent or long term. (. . .)

When addressing the major life activity of performing manual tasks, the central inquiry must be whether the claimant is unable to perform the variety of tasks central to most people's daily lives, not whether the claimant is unable to perform the tasks associated with her specific job. (...) There is also no support in the Act, our previous opinions, or the regulations for the Court of

Appeals' idea that the question of whether an impairment constitutes a disability is to be answered only by analyzing the effect of the impairment in the workplace. Indeed, the fact that the Act's definition of "disability" applies not only to Title I of the Act, which deals with employment, but also to the other portions of the Act, which deal with subjects such as public transportation and privately provided public accommodations demonstrates that the definition is intended to cover individuals with disabling impairments regardless of whether the individuals have any connection to a workplace. Even more critically, the manual tasks unique to any particular job are not necessarily important parts of most people's lives. As a result, occupation-specific tasks may have only limited relevance to the manual task inquiry. (. . .)

In addition, (...) even after her condition worsened, she could still brush her teeth, wash her face, bathe, tend her flower garden, fix breakfast, do laundry, and pick up around the house. The record also indicates that her medical conditions caused her to avoid sweeping, to quit dancing, to occasionally seek help dressing, and to reduce how often she plays with her children, gardens, and drives long distances. But these changes in her life did not amount to such severe restrictions in the activities that are of central importance to most people's daily lives that they establish a manual task disability as a matter of law. *Toyota* at 197-202. (Citations omitted).

Coupled with the *Sutton* trilogy, *Toyota* appeared to place virtually impossible barriers to claims of workplace discrimination under Title I. In the process of attempting to clarify the meaning of disability under the ADA, the Court interpreted congressional language to apply Title I only to those who had, seemingly, vast functional difficulties in virtually every aspect of a major life function. This situation endured until 2008 when congress took action to correct the meaning of the ADA and moot these previous decisions.

Congressional Response to the *Sutton* Trilogy and *Toyota*. In response to the Court's decisions limiting the definition of disability in the ADA, congress passed the Americans with Disabilities Act Amendments Act (ADAAA) (Pub. L. 110-325, 122 Stat, 3553) in 2008. The language of this Act was incorporated into and where necessary superseded the language of the original ADA. Specifically, the ADAAA eliminated the language referring to 43 million Americans with disabilities which the Court had found significant in its earlier holdings. ADAAA specifies that the definition of disability should be broadly construed, as it had been in regard to Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112, 87 Stat. 355, codified at 29 U.S.C 701 *et. seq.*), and specifically instructed the Court to apply the definition of disability applied in *School Board of Nassau County v. Arline*, 480 U.S. 273 (1987). In that case, the Court used Department of Health and Human Services definitions for a (physical) disability as "[A]ny physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological; musculoskeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive, digestive, genito-urinary; hemic and lymphatic; skin; and endocrine," and for major life activities as "functions such as caring for one's self, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working." *Arline* at 208. The ruling also spoke to the meaning of persons regarded as having a disability. Justice Brennan, writing for the majority, stated:

By amending the definition of "handicapped individual" to include not only those who are actually physically impaired, but also those who are regarded as impaired and who, as a result, are substantially limited in a major life activity, Congress acknowledged that society's accumulated myths and fears about disability and disease are as handicapping as are the physical limitations that flow from actual impairment. *Arline* at 284.

The definition of disability present in *Arline* is more inclusive and provides greater protection in employment to persons with disabilities than the Court's earlier rulings. Congressional action appears to have had the desired effect. The ruling appears to have alleviated confusion concerning the definition of disability in the courts, and since 2008 no major Title I cases have found their way to the Supreme Court. It appears that the ADAAA has had the desired effect in restoring employment protections to persons with disabilities to the full extent possible, at least with private employers.

Conclusions

Congress has demonstrated a desire to protect the rights of persons with disabilities in employment when it passed the Americans with Disabilities Act. However, the language of the Act in its original form was found to be open to interpretation, especially in regard to the definition of disability, and the Court chose to rule in such a way that it limited those protections by redefining disability. Congress then reaffirmed intentions by passing the Americans with Disabilities Act Amendments Act in 2008, mooting the previous decisions of the Court. The Court has not disturbed these stronger and broader definitions of disability, providing protections in employment to a much larger group of people than in its earlier limiting ruling.

The constitutional history of the United States demonstrates a desire to expand fundamental rights and to provide protections for those who are members of vulnerable groups. Employment is not and has never been a fundamental right, and the Courts, as shown in *Tennessee v. Lane*, have not recognized discrimination against persons with disabilities as similar to the discrimination against other vulnerable populations in regard to state hiring and employment decisions. Therefore, in regard to employment, the Fourteenth Amendment and its strong protections has not been permitted as a means to protect persons with disabilities in this manner. However, the Congress and the Court's actions in regard to private employment, and other titles of the ADA, have nonetheless shown a strong commitment to defining the right of persons with disabilities to those privileges to which all citizens are entitled.

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The Americans with Disabilities Act as a Civil Right Law: A Review of Developmental Principles and Supreme Court Decisions

Patrick L. Dunn

University of Tennessee

The protection of the fundamental rights of citizens of the United States has been a significant theme in the legislative and judicial history of the nation. These rights, largely derived from the Bill of Rights and augmented through decisions of the Supreme Court, allow individuals to realize the full benefits citizenship. The post-Civil War amendments to the Constitution legally defined citizenship and provided significant protections from denial of these rights by the states, and broad reading of the Commerce Clause of the Constitution allowed greater protections from private, rather than governmental, actors to be instituted through congressional action. The Americans with Disabilities Act of 1990 (ADA) attempted to apply both the Fourteenth Amendment of the Constitution and the Commerce clause as a justification for the protection of civil rights of persons with disabilities. This article reviews the development of civil rights law in the United States and those Supreme Court decisions that apply to persons with disabilities, and the way in which the Court has distinguished the protection of civil rights of persons with disabilities from other vulnerable groups.

The definition and meaning of citizenship, and the rights of citizens, have been a constant point of debate since the writing of the United States Constitution in 1787. The striving of various groups of traditionally under-empowered groups of citizens based upon race, gender, sexual orientation, national origin, and other indelible personal characteristics has been a continuous struggle, with a general movement over time toward greater recognition and protection of the basic privileges that citizenship should bring under the Constitution. While for some these struggles have been evident for more than 200 years, recognition of the rights of persons with disabilities has only come in recent decades. Perhaps the most significant protections come through the Americans with Disabilities Act (ADA) of 1990, Pub. L. 101-336, 104 Stat. 327(1990; codified at 42 U.S.C § 12101 *et. seq.*), but also through other legislative endeavors.

Because the United States is a federal system in which the federal (central) government theoretically possesses only limited power to enact legislation, there remain legal limits on the ability of the central government to grant protection to the rights of citizens. Concerning the protection of the civil rights of persons with disabilities, on occasion these limits have caused the Supreme Court of the United States, the final arbiter of legal questions, to determine that the fullest protections envisioned by the ADA and similar laws do not meet the scrutiny of constitutional requirements. Therefore, in many decisions the Supreme Court has limited the benefits of the ADA to persons with disabilities.

The ADA and its meaning as interpreted by the Supreme Court recalls a history that goes deep into the constitutional history of the nation. A full understanding of the rationale for the evolution of the Supreme Court's views on the meaning of citizenship and the capacity of the federal government to of the protection of the rights of citizenship requires an explanation of that history. The purpose of this

article is to examine that history as a backdrop to the discussion of the major cases heard by the Supreme Court in relation to persons with disabilities.

Federalism, Federal Powers, and State Powers

The Constitution of the United States as written in 1787 proposed a system of government in which a federal government consisting of a legislative, executive and judicial branch be established, with each branch having limited enumerated powers to establish laws applicable to the nation as a whole. State governments, meanwhile, created their own laws largely unhindered by the provisions of the Constitution, so long as those state laws did not interfere with the inherent enumerated powers of the federal government. This system remains largely intact today, although the scope of enumerated powers of the federal government has gradually increased through interpretation of federal law and through amendment to the Constitution itself.

Enumerated Powers of the Legislative Branch

The legislative branch is given the task of making law and the enumerated powers allocated to it to make law can be found in Article I, Section 8 of the Constitution, and each law that is proposed or passed must tie to one of the enumerated powers. U.S. Const., art. 1, § 8. Most of the enumerated powers relate to matters that seem rather limited in scope and some may seem anachronistic, and all relate to those things that states could not effectively oversee efficiently. Two of the enumerated powers, however, have been interpreted so broadly by the Supreme Court to give the legislative branch far greater power than is apparent on first glance. The first of these is the necessary and proper clause. This clause authorizes Congress “To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof.” U.S. Const. art. 1, § 8, cl. 18. This power gives the legislative branch authority to create laws to enable it to efficiently carry out the other enumerated powers, but also to allow the other branches of government, the executive and the judicial, to carry out their enumerated powers. The necessary and proper clause was clarified in *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 419 (1819) as a grant of implied powers to Congress to enforce its enumerated powers under the Constitution, and these powers were sacrosanct in that they could not be nullified or otherwise made moot by the action of the states.

Perhaps the broadest power granted under the enumerated powers is the commerce clause. This clause states that Congress has the power “To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.” U.S. Const., art 1, § 8, cl. 3. This power seems on its face to be rather innocuous, and indeed, for approximately the first century and a half of the Constitution’s existence this was the case, with a relatively strict interpretation of the application of the power. However, as will be discussed later in this chapter, over the last eighty years the Supreme Court has permitted a much broader interpretation of the commerce regulation power. This broader interpretation has allowed the legislative branch to create laws that impact many things that were not envisioned in the earlier era of the clause’s interpretation. Most significant among these for the discussion in this article is the application of the commerce clause to civil rights legislation.

The Powers of the States

Federalism grants to the states the right to make all laws that did not conflict with the enumerated powers of the federal government, or that violate those restrictions placed on the states by in Article 1 of the Constitution (U.S. Const. art 1, § 10), most of which relate to commercial regulation with other states or foreign nations. Each state has its own constitution defining the government and the means of making laws within that state. Until after the time of the Civil War, state governments retained broad powers to govern citizens within their borders, including the regulation of civil rights and fundamental freedoms.

Structure and Development of Civil Rights Protections

The Bill of Rights

The Bill of Rights refers to the first ten amendments to the Constitution, ratified by the states in 1791. The Bill of Rights indicate certain specific rights of citizens that cannot be abridged by actions of the federal government, and as such may be considered the first guarantee of civil rights to citizens of the United States. The rights that are encompassed by these amendments are by and large stated in the negative, indicating not a grant of rights to citizens but rather an acknowledgement that certain rights exist and cannot be taken away. For example, the First Amendment to the Constitution states “Congress *shall make no law* respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances” (emphasis added). U.S. Const. amend. I. Subsequent amendment protect a wide array of rights of citizens to legal process and property. Amendments Nine (“The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people”), and Ten (“The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people”) of the Constitution provide caveats to federal government power, indicating that the protections provided by the Bill of Rights are not an exhaustive list of rights of citizens. U.S. Const. amends. IX, X.

Although the Bill of Rights was ratified in 1791, it was not until the passage of the Fourteenth Amendment to the Constitution that it was possible to bind these rights to actions of individual states, and then this process was a gradual one that occurred over a number of decades. The Bill of Rights refers to *federal* action without reference to *state* action, and states themselves were not bound by its provisions. For example, the Fifth Amendment prohibition of seizure of private property for public use without just compensation (U.S. Const. amend. V) was deemed to have not applied to the states in *Barron v. Mayor and City Council of Baltimore*, 32 U.S. (7 Pet.) 243 (1833), with Chief Justice Marshall holding that “amendments (making up the Bill of Rights) contain no expression indicating an intention to apply them to the State governments. This court cannot so apply them.” *Barron* at 250. The individual states were free to enact their own protections for rights of citizens under their own individual constitutions, but state action itself was not limited by the protection of the Bill of Rights.

Sovereign Immunity and the Eleventh Amendment

Another early amendment which impacts upon civil rights and redresses against actions of the state or federal government is sovereign immunity. Sovereign immunity is the principle that the sovereign (in this case the state or federal government) cannot do wrong, and therefore cannot be forced to compensate a wronged party for their actions. The federal government has no specific constitutional protection related to sovereign immunity. Rather, it has been assumed by the courts that sovereign immunity existed for the federal government. State governments, likewise, have sovereign immunity against suits by citizens of the state. However, there were initially no provisions for states by suits from citizens of another state. This matter was at issue in *Chisholm v. Georgia*, 2 U.S. (2 Dall.) 419 (1793), a very early case in which it was held that suits of this type could stand. In response, the Eleventh Amendment to the Constitution was quickly proposed and ratified by the states, granting states the same protections in sovereign immunity against citizens of other states that it held over its own citizens. U.S. Const. amend. XI. The matter of sovereign immunity became an important consideration in the development of further civil rights protections and was a significant consideration in the development of the Fourteenth Amendment to the Constitution.

The Definition of Citizenship and the Reconstruction Amendments

Perhaps one of the great paradoxes of the creation of the Constitution is that while it, and the Bill of Rights, speak to the rights of citizens and their protections, in no place does the original draft of the Constitution define citizenship. It was assumed that free persons born in the United States were citizens, and Congress was given the power to provide procedures for naturalization of persons of foreign birth. It was not until the ratification of the Reconstruction Amendments (the name collectively given to the Thirteenth, Fourteenth, and Fifteenth amendments to the Constitution) that citizenship was finally defined.

The result of the Civil War necessitated the passage of the Reconstruction Amendments. The Thirteenth Amendment abolished slavery *de jure* in the United States, and the Fifteenth Amendment prohibited discrimination in voting against by reasons of race, color, or previous condition of servitude. U.S. Const. amends. XIII, XIV. Both of these Amendments provide invaluable protections of fundamental rights, and in particular the rights of racial minorities. However, of the three Reconstruction Amendments, the Fourteenth Amendment has had perhaps the greatest and most enduring impact on civil rights protections. U.S. Const. amend. XIV.

Section 1 of the Fourteenth Amendment states:

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws. U.S. Const. amend. XIV, § 1.

This section of the Fourteenth Amendment finally provided a constitutional definition of citizenship. The Amendment further indicates that states cannot create laws which violate the benefits of citizenship or deny these rights to persons without due process or equal protection of the laws. Sections 2 through 4 of the Fourteenth Amendment relate to specific consequences of the Civil War and by and large have little meaning in the current day. Section 5 of the Fourteenth Amendment, however, remains one of the most powerful means by which the legislative branch can influence civil rights protections. This section states, “The Congress shall have power to enforce, by appropriate legislation, the provisions of this article.” U.S. Const. amend. XIV § 5. This sentence in and of itself grants Congress a new power not included in the Constitution, that of policing actions by the states that seek to deny rights to citizens in a manner that is in conflict with the provisions of the Amendment. Perhaps the most significant use of this power in recent years has been its application in *Brown v. Board of Education of Topeka*, 347 U.S. 483 (1954), the landmark decision desegregating public schools. The modern interpretation of this power by the Supreme Court was enunciated in *City of Boerne v. Flores*, 521 U.S. 507 (1997), holding that use of Section 5 of the Fourteenth Amendment must be congruent and proportional to the circumstances, and not sweeping; otherwise, the legislative branch could rewrite the balance between the federal government and the states to favor itself, going beyond the intent of the Fourteenth Amendment.

A final note on the Fourteenth Amendment concerns the incorporation of the provisions of the Bill of Rights to the states. The Supreme Court did not hold that the Bill of Rights immediately applied to the states upon the passage of the Fourteenth Amendment. Rather, it chose to follow a policy of selective incorporation, or attaching the protections of the Bill of Rights to the states as cases provided for the opportunity. This began with freedom of speech in *Gitlow v. New York*, 268 U.S. 652 (1925) and has continued over the years with the most recent case of incorporation being *McDonald v. City of Chicago*, 561 U.S. 742 (2010), concerning the Second Amendment. Nearly all of the substantive protections contained in the Bill of Rights have now been recognized as applicable to state action through the Fourteenth Amendment’s due process clause.

Development of Commerce Power as a Means to Extend Protection of Civil Rights

Until the 1930s the power of the legislative branch to regulate interstate commerce and foreign trade was a relatively minor constitutional concern. With the coming of the Great Depression and the institution of programs under the New Deal and its sweeping regulatory provisions intended to help the recovery of the United States economy, the Supreme Court faced a number of decisions regarding application of the commerce power. Initially the Supreme Court held many of the provisions unconstitutional, but beginning in the mid-1930s the Supreme Court, under pressure from the executive branch, began to allow broader and broader application of the commerce power. One of the more commonly cited cases indicating this new acceptance of the broad commerce power was *Wickard v. Filburn*, 317 U.S. 111 (1942). This case involved a federal law, passed under the power of the commerce clause that awarded federal allotments permitting farmers to grow a certain amount of wheat and fined those who grew wheat without this allotment. A farmer had grown wheat on his farm for the purpose of feeding his livestock; none of the wheat left his farm for market. Nonetheless, the farmer received a fine for this action. The farmer challenged the law and this use of the commerce power. The Supreme Court upheld the law, and the fine, and stated in its holding:

Once an economic measure of the reach of the power granted to Congress in the Commerce Clause is accepted, questions of federal power cannot be decided simply by finding the activity in question to be 'production' nor can consideration of its economic effects be foreclosed by calling them 'indirect.' (. . .) 'The commerce power is not confined in its exercise to the regulation of commerce among the states. It extends to those activities intrastate which so affect interstate commerce, or the exertion of the power of Congress over it, as to make regulation of them appropriate means to the attainment of a legitimate end, the effective execution of the granted power to regulate interstate commerce. (. . .) The power of Congress over interstate commerce is plenary and complete in itself, may be exercised to its utmost extent, and acknowledges no limitations other than are prescribed in the Constitution. It follows that no form of state activity can constitutionally thwart the regulatory power granted by the commerce clause to Congress. Hence the reach of that power extends to those intrastate activities which in a substantial way interfere with or obstruct the exercise of the granted power.' *Wickard* at 124 (Citations omitted).

The Supreme Court initially used this expanded commerce power for the purposes of economic regulation through the 1950s. In the 1960s, the commerce clause was the power applied to pass the Civil Rights Act of 1964, Pub. L. 88-352, 78 Stat. 481, which did much to desegregate private facilities. The rationale was that those entities and activities touched by the Act were entwined with interstate commerce, and Congress was thus able to mandate the actions encompassed in the Act using the broad interpretation of the commerce clause. A series of cases before the Supreme Court in the 1960s, beginning with *Heart of Atlanta Motel, Inc. v. United States*, 379 U.S. 241 (1964), upheld the constitutionality of the Act as a legitimate use of the commerce power.

Thus, the legislative branch of the federal government in the current day has acquired significant and powerful tools to protect the rights of individuals from discrimination by both state actors and private parties. The Fourteenth Amendment and the expanded powers of the commerce clause have permitted the development of civil rights protections for vulnerable groups and both are recognized by the Supreme Court, within limits and bounds, as legitimate means of creating a more equitable society. Both the Fourteenth Amendment and the commerce clause were cited as the means by which the federal government could enact the Americans with Disabilities Act.

Determining if a Law is Discriminatory: The Tests for Scrutiny and the Rational Basis Test

Under the Fourteenth Amendment a law passed by a state or the federal government cannot be upheld if it violates the rights of individuals as citizens. Therefore, any law that makes a distinction be-

tween groups of people and attempts to assign a right or deny a right on the basis of group membership is likely to be suspect from a legal perspective. The Supreme Court has developed a test for the review of such laws, and only in the most unusual of circumstances would such laws be allowed to stand.

The origins of this judicial reasoning can be found in an otherwise obscure New Deal-era case, *United States v. Carolene Products*, 304 U.S. 148 (1938). The case itself was one of a number of cases involving the expanding commerce power, in this case an adulterated form of milk which had been banned from interstate shipment by a federal law. The holding of the case indicated that legislatures may pass laws for the public health or safety so long as they have a rational relation to a legitimate interest of the government. This was the first application of what has become known as the rational basis test of a law. The footnote expands upon this decision to describe circumstances that might cause the Supreme Court to apply stricter standards:

There may be narrower scope for operation of the presumption of constitutionality when legislation appears on its face to be within a specific prohibition of the Constitution, such as those of the first ten amendments, which are deemed equally specific when held to be embraced within the Fourteenth. (...) It is unnecessary to consider now whether legislation which restricts those political processes which can ordinarily be expected to bring about repeal of undesirable legislation is to be subjected to more exacting judicial scrutiny under the general prohibitions of the Fourteenth Amendment than are most other types of legislation. (...) Nor need we enquire whether similar considerations enter into the review of statutes directed at particular religious (...) or racial minorities (...) whether prejudice against discrete and insular minorities may be a special condition, which tends seriously to curtail the operation of those political processes ordinarily to be relied upon to protect minorities, and which may call for a correspondingly more searching judicial inquiry. *Carolene Products* at 152. (Citations omitted).

The footnote indicates that the Fourteenth Amendment would call for the Supreme Court to examine laws that make distinctions on membership in “discrete and insular” minority groups with heightened scrutiny. What has emerged from the Supreme Court is the concept of strict scrutiny review should a law be passed which makes distinctions based solely on membership in these groups. Strict scrutiny is applied when a law makes distinctions based on suspect classifications such as race, religion, national origin, or when fundamental rights are impinged by a law. Any such law must have a compelling basis for its passage, must be very narrowly tailored to achieve its objective, and must employ the least restrictive means of achieving its objective. The rule was first expounded in *Korematsu v. United States*, 323 U.S. 214 (1944), considering the internment of Japanese-Americans during World War II. Interestingly, this is the only occurrence when a law that facially makes distinctions based on race or national origin of citizens has been allowed to stand by the Supreme Court. Heightened scrutiny by the Supreme Court represents a final means through which laws that intrude upon fundamental rights or which place burdens on groups of people based upon indelible characteristics can be mooted. It is an extension of the Supreme Court’s interpretation of the provisions of the Fourteenth Amendment that prevent violations of due process or the rights of citizenship.

The Americans with Disabilities Act

The Americans with Disabilities Act of 1990, Pub. L. is codified at 42 U.S.C. § 12101 *et seq.* As with any other law, Congress indicated the authority under which it was able to pass the law, stating its intent “to invoke the sweep of congressional authority, including the power to enforce the fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced day-to-day by people with disabilities.” 42 U.S.C. 126 § 12101(b)(4). The codification of the Act begins with congressional findings, each clause of which recognizes either historical discrimination burdening persons with disabilities, the need for equal opportunity for persons with disabilities, or Congress’s intention to create a legal framework for addressing this discrimination. From a legal perspective, the ADA is unequivocally a civil rights law, which on its face recognizes persons with disabilities as a suspect class deserving of special protection and recourse as a result of class membership.

The ADA is also a law with a comprehensive scope. It provides protections for persons with disabilities in employment (Title I, codified at 42 U.S.C. 126 § 12111 *et seq.*), public services and public transportation provided by public entities, and public transportation by intercity and commuter rail (Title II, codified at 42 U.S.C. 126 § 12131 *et seq.*), public accommodations and services operated by private entities (Title III, 42 U.S.C. 126 § 12181 *et seq.*), and telecommunications (Title IV, codified by amending the Communications Act of 1934, Pub. L. 73-416, 38 Stat. 1064, 47 U.S.C. 151 *et. seq.*, with these amendments codified at 47 U.S.C. § 225). The following is a review of the Supreme Court cases concerning civil rights protections of the ADA, their holdings and impact on the power of the Act.

Supreme Court Decisions and Civil Rights Protections of the ADA

Title I, Sovereign Immunity, and the Fourteenth Amendment

Title I of the ADA attempts to curb discrimination against persons with disabilities in employment. Work is not a fundamental right protected by the Bill of Rights or any other constitutional provision; however, discrimination in employment based on indelible personal characteristics is unlawful under the provisions of various civil rights laws. Congress can reach private employers in this manner through the commerce power, and, in theory, attempted to bar discrimination against persons with disabilities through the powers of Section Five of the Fourteenth Amendment. The Supreme Court, however, has indicated that unlike other potentially suspect classes, persons with disabilities are not due the same protections from discrimination in employment by the states under the Fourteenth Amendment.

The case which prohibited congressional authority in Title I matters related to the states was *Board of Trustees of University of Alabama v. Garrett*, 531 U.S. 356 (2001). Two state employees filed ADA claims after having acquired disabilities during the course of their employment and experiencing negative consequences from their employers. As part of their suit they sought monetary damages from the state of Alabama. To do so would require the abrogation of the sovereign immunity of the state by Congress through the ADA using Section 5 of the Fourteenth Amendment, and for the courts to apply heightened scrutiny to the state's actions. While lower courts permitted the case to go forward, the Supreme Court reversed. The reasoning of the Court was based upon persons with disabilities not having suffered historical discrimination in employment. Also key to the decision was the holding in *City of Cleburne v. Cleburne Living Center*, 473 U.S. 432 (1985), which held that only rational basis review was necessary in matters concerning persons with disabilities. The holding in *Garrett* states in relevant part:

Thus, the result of *Cleburne* is that States are not required by the Fourteenth Amendment to make special accommodations for the disabled, so long as their actions toward such individuals are rational. They could quite hardheadedly—and perhaps hardheartedly—hold to job-qualification requirements which do not make allowance for the disabled. If special accommodations for the disabled are to be required, they have to come from positive law and not through the Equal Protection Clause. (...) Congress is the final authority as to desirable public policy, but in order to authorize private individuals to recover money damages against the States, there must be a pattern of discrimination by the States which violates the Fourteenth Amendment, and the remedy imposed by Congress must be congruent and proportional to the targeted violation. Those requirements are not met here, and to uphold the Act's application to the States would allow Congress to rewrite the Fourteenth Amendment(.) *Garrett* at 367-68; 374.

This decision eliminated one remedy for persons with disabilities, monetary damages, in employment by state government, but it should be noted that other relief, including injunctive relief requiring the state to provide accommodations or take other corrective action, might still be available. However, the breach of sovereign immunity of the states in regard to employment discrimination under the ADA was viewed as an overreach by Congress in applying its powers under the Fourteenth Amendment. In regard to other matters concerning civil rights of persons with disabilities and state actions, espe-

cially those that burden fundamental constitutional rights, the Supreme Court has been receptive of this congressional power.

Title II, Public Accommodations, and Fundamental Rights

While the Supreme Court's reception of congressional action regarding employment, especially when employment is considered in the context of a civil right, has not resulted in positive results for persons with disabilities, in regard to other forms of discrimination the Supreme Court, and by and large lower courts, have, in contrast, stalwartly defended the protections of the ADA. The explanation can be that working is not recognized as a fundamental right while the protections offered by Titles II, III, and IV of the ADA concern rights that are considered to be the privileges of citizenship. Laws or actions that burden such rights will be subjected to heightened scrutiny. Two cases of interest, *Tennessee v. Lane* and *Olmstead v. L. C.*, demonstrate this contrast in the opinions of the Supreme Court.

Tennessee v. Lane. *Tennessee v. Lane*, 541 U.S. 509 (2004) was a case concerning access to public facilities, specifically, the right to physical access to a court. Two plaintiffs who used wheelchairs were unable to access courtrooms in a courthouse that had no elevator. The first was called to answer a criminal charge. On his first appearance he crawled up two flights of stairs. On the second he refused to crawl or to be carried to the courtroom and was jailed for failure to appear. The other plaintiff was a court reporter who had encountered this matter at various courthouses in the state and had lost work as a result. The state attempted to assert sovereign immunity as a defense, citing *Garrett*. The trial court and the Sixth Circuit Court of Appeals refused to dismiss the complaint, indicating that their reading of *Garrett* would permit a defense of sovereign immunity in equal protection claims due to a lack of historically unconstitutional discrimination in employment on the basis of disability, but in regard to due process claims that include access to a court to be heard sovereign immunity could be abrogated by Congress through Section 5 of the Fourteenth Amendment.

The Supreme Court indeed held that this was the case. While Title I claims did not rise to the level that would permit congressional application of Fourteenth Amendment protections, the Supreme Court, pointing to its ruling in *Garrett*, noted that this was not the case in regard to other titles of the ADA. The Sixth Amendment confrontation clause ("in all criminal prosecutions, the accused shall enjoy the right...to be confronted with the witnesses against him") was bound to the states to the Fourteenth Amendment, as well as the right to public access to courts under the First Amendment. Using the rule developed in *City of Boerne v. Flores*, 521 U.S. 507 (1997) that congressional measures under the Fourteenth Amendment must be "congruent and proportional," the Supreme Court found that Title II of the ADA was an appropriate use of this power. Justice Stevens, writing for the majority, stated evidence of the extent of the denial of due process rights to persons with disabilities:

It is not difficult to perceive the harm that Title II is designed to address. Congress enacted Title II against a backdrop of pervasive unequal treatment in the administration of state services and programs, including systematic deprivations of fundamental rights. For example, "[a]s of 1979, most States . . . categorically disqualified 'idiots' from voting, without regard to individual capacity." The majority of these laws remain on the books, and have been the subject of legal challenge as recently as 2001. Similarly, a number of States have prohibited and continue to prohibit persons with disabilities from engaging in activities such as marrying and serving as jurors. The historical experience that Title II reflects is also documented in this Court's cases, which have identified unconstitutional treatment of disabled persons by state agencies in a variety of settings, including unjustified commitment, the abuse and neglect of persons committed to state mental health hospitals, and irrational discrimination in zoning decisions. The decisions of other courts, too, document a pattern of unequal treatment in the administration of a wide range of public services, programs, and activities, including the penal system, public education, and voting. Notably, these decisions also demonstrate a pattern of unconstitutional treatment in the administration of justice. (. . .)

With respect to the particular services at issue in this case, Congress learned that many individuals, in many States across the country, were being excluded from courthouses and court pro-

ceedings by reason of their disabilities. A report before Congress showed that some 76% of public services and programs housed in state-owned buildings were inaccessible to and unusable by persons with disabilities, even taking into account the possibility that the services and programs might be restructured or relocated to other parts of the buildings. Congress itself heard testimony from persons with disabilities who described the physical inaccessibility of local courthouses. And its appointed task force heard numerous examples of the exclusion of persons with disabilities from state judicial services and programs, including exclusion of persons with visual impairments and hearing impairments from jury service, failure of state and local governments to provide interpretive services for the hearing impaired, failure to permit the testimony of adults with developmental disabilities in abuse cases, and failure to make courtrooms accessible to witnesses with physical disabilities. *Lane* at 524-27. (Citations omitted).

The Supreme Court's decision points to the distinction it will draw between employment protections and other elements of the ADA. Congress clearly identified the history of inequitable treatment of persons with disabilities in public accommodations and thus was justified in its application of Fourteenth Amendment power to abrogate state sovereign immunity. The denial of fundamental rights, such as those found in the Bill of Rights, by state governments will not be allowed to stand by the Supreme Court.

Olmstead v. L. C. A final example of the Supreme Court's interpretation of the rights encompassed by the ADA was demonstrated in *Olmstead v. L.C. ex. rel. Zimring*, 527 U.S. 581 (1999). The plaintiffs were two women from the state of Georgia who had dual diagnoses of intellectual disability and mental illness. The professionals working with them had stated that they could be cared for in a community group home setting, but nonetheless continued to be institutionalized. The plaintiffs, through their guardian *ad litem*, brought suit under Title II of the ADA, seeking placement in a community-based setting. The state argued that their continued institutionalization was not a matter of intentional discrimination but rather a question of lack of available funds. The trial court rejected this defense. The Eleventh Circuit Court of Appeals affirmed the decision, yet remanded the case to the trial court pending an analysis of the state's cost-based defense. Such a defense could hold, reasoned the appeals court, if it burdened the state's health budget to such a degree that it would alter services provided by the state in a fundamental manner.

The Supreme Court, in its holding, disagreed with the state's argument that this was not a form of discrimination, pointing to language in the ADA itself that noted specified institutionalization as a form of discrimination. However, it recognized that the ADA was not a mandate to close institutions, as institutions were the proper treatment venue for many persons with disabilities, either temporarily or longer term. The Supreme Court recognized that the state may have a cost-based defense, but that the proper test would be to show that granting relief to the two plaintiffs would be inequitable given the diverse array of services it must provide to a large number of similarly situated persons with disabilities with differing needs. However, the Supreme Court concluded that states have the obligation under the ADA to provide community-based services when such services are desired by the person with a disability, are appropriate, and can be reasonably accommodated given the cost and array of services offered by the state.

Olmstead appears to recognize that the ADA, while not mandating universal deinstitutionalization, encourages community participation to the fullest extent possible for persons with disabilities. The benefits of citizenship include the capacity to participate in one's community to the fullest extent possible. Integration of persons with disabilities into the community through such measures does much to assure that these benefits are realized.

Conclusions

American history has seen the development of a system of government that has slowly yet steadily moved in the direction of equal justice under the law for all persons regardless of their personal characteristics. The gradual recognition and enshrinement of protections of the rights of citizenship has

moved toward greater inclusion and increased protection for those who have traditionally suffered discrimination and injustice from either state or federal actors or private parties. The tools at the disposal of Congress to address such concerns have increased and can be used to powerful effect, with the judicial branch of government providing proper bounds to permit this power from being misused.

The Supreme Court has not heard a significant Americans with Disabilities Act case in the last decade, yet the precedents of *Garrett*, *Lane*, and *Olmstead* continue to have force of law in the treatment of persons with disabilities. The broad outlines of the limits of ADA protections have been addressed by the Supreme Court. The Americans with Disabilities Act recognizes the rights of persons with disabilities to the benefits of full citizenship. The Supreme Court has not found agreement with Congress in providing certain protections for employment; however, state action that has the effect of burdening fundamental rights of persons with disabilities, has been quashed when it has come to the Court's attention. While the disability rights community would hope for greater protections from the Court, the Court's actions have attempted to balance the rights of the states with the potentially vast power of Congress to rewrite law under the Fourteenth Amendment.

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Wickard v. Filburn, 317 U.S. 111 (1942).

Use of ACS to Improve Occupation Earnings Estimates¹

David S. Gibson²

Abundant resources exist to measure the expected earnings of a given occupation down to the level of a local labor market. However, none of these resources consider the well-documented positive correlation between earnings and education or the continuing gap in earnings between males and females. This article utilizes the rich data offerings of the American Community Survey to generate cross-tabulations of occupational earnings delineated by gender and education.

The results reveal that earnings for the vast majority of occupations vary significantly depending upon the worker's education. Further, we³ show that earnings for males consistently exceed those for females even when controlled for education and occupation. We provide tabulations for the nation and the largest metropolitan areas.

Vocational experts, economists, career theorists, and everyday job seekers frequently seek information on the typical earnings of a given occupation. With the advent of the internet, a never-ending list of potential sources exists, all claiming to satisfy this need. However, the number of tools offering reliable research and statistically sound projections remains rather stable. Perhaps the most widely used survey offering a reliable foundation is the Occupational Employment Statistics (OES) program from the U.S. Bureau of Labor Statistics (2017). This site offers earnings information on over 800 occupations in metropolitan and nonmetropolitan areas across the United States—all updated annually using consistent, established survey methodology.

However, neither the OES nor its competitors offer earnings within an occupation delineated by education. For example, consider the occupational category of “Accountants and Auditors.” Depending upon the requirements of the employer, persons holding this position may have a wide range of educational attainment. Since research shows that earnings typically increase with education, one might expect that accountants and auditors with different levels of education would have different earnings on average. If so, is an earnings estimate for the occupation as a whole relevant?

Further, noting the attention given to differences in earnings by gender (the “Gender Gap”), one might wonder if and how occupation-specific earnings reflect these differences. Knowledge of any variance may be of importance in how the data are used.

This paper offers an alternative data source of earnings to measure the expected annual earnings of a person in a given occupation. This alternative is the American Community Survey (ACS) from the U.S. Census Bureau (2016). The ACS provides the benefit of a large annual sample size and the ability to combine multiple years' data to generate cross-tabulations of occupational earnings differentiated by gender and education. From the resulting data, we demonstrate continua in occupational earnings confirming significant education-driven differences. These continua exist as well in traditionally low-education (e.g., construction laborer) and high-education (e.g., mechanical engineer) occupations. Further, we demonstrate pervasively lower earnings for females than males, even when controlling for education and occupation. We provide tabulations of occupational earnings at the detail level nationally. We further offer data for the top 30 major metropolitan areas⁴ to allow local application.

OES v. ACS

Both the Occupational Employment Statistics (OES) survey and the American Community Survey (ACS) offer distinct advantages as annual surveys funded by the U.S. government using scientific sampling techniques to produce reliable results. For their respective purposes, both are recognized for their quality and integrity. However, because their purposes are not the same, the users of the resulting data need to be familiar with their relative advantages and disadvantages.

Occupational Employment Statistics

According to the survey's website (Technical Notes, 2018), the OES "... is a semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States." Funded and directed by the Bureau of Labor Statistics (BLS), the survey is a cooperative effort between the BLS and State Workforce Agencies (SWAs), who perform the data gathering activities.⁵ The targets of the survey are more than 200,000 establishments (i.e., employers, not employees) spanning all states and the District of Columbia and encompassing more than 600 geographic areas (metropolitan and nonmetropolitan).

Other OES documentation (Survey Methods, 2018, p. 1) provides further detail, noting use of the 2010 Standard Occupational Classification (SOC) system to define 803 standard occupations. Employers use industry-specific survey forms (Survey Forms, 2018) which list all occupations typical for the industry and provide descriptions of the typical duties. Employers indicate how many of their employees fill each occupation, categorized by their *typical* earnings.

We fully accept that these typical earnings provide reliable measures in accordance with the survey's design. However, we suggest improvement in the estimates for use to measure a person's expected annual earnings given the following limitations:

- Although OES presents annual earnings for most of the occupations, these are merely the average hourly rate multiplied by 2,080 hours (52 weeks x 40 hours) (Survey Methods, 2018, p. 19). Earners may make significantly more (see below) or be part-time workers.
- By surveying only nonfarm employers, the OES excludes farm occupations and all self-employed individuals.⁶
- The earnings reported exclude bonuses, overtime, and premium pay (holidays, weekends, and shift differentials), which may be a normal part of earnings for a given position. (Frequently Asked Questions, 2018).

American Community Survey

According to Census publication (What Researchers Need to Know, 2009, p. iv), the ACS "... is a nationwide survey designed to provide communities with reliable and timely demographic, social, economic, and housing data every year." Thus, information on occupations and earnings represents only a fraction of all the areas addressed in the annual survey. While the OES samples businesses, the ACS samples households statistically stratified to derive a representative sample of the population as a whole and within communities. Therefore, it captures persons in all occupations, including those associated with farming and self-employment.

Census releases the results of the ACS through multiple forms, including Public Use Microdata Sample (PUMS) files (ACS PUMS, 2016) containing more than 3 million observations each year. These files allow researchers to extract and cross-tabulate data across the broad array of topics addressed in the survey. Thus, a researcher can narrow the diverse topics addressed in the ACS questionnaire (U.S. Census Bureau, 2016) to the specific areas of interest—such as occupation and earnings. Further, Census encourages researchers to combine PUMS files from multiple years to improve sample size for smaller subpopulations.

Occupations. The reader should recall that the OES samples businesses, asking them to match their workers to standard occupational definitions. Because the ACS samples the general population, it does not assume familiarity with these definitions or present a list of potential jobs. Rather, in questions 45 and 46 of the survey (ACS Questionnaire, 2016, p. 11), the respondent provides open-ended responses on the type of work and duties performed. Through automated coding, with Census staff intervention where necessary (2016 Subject Definitions, 2016, pp. 102-5), Census identifies the appropriate occupation using the same 2010 SOC coding structure employed by the OES.

In its recent content review, Census documented dozens of applications of the ACS occupation data by federal agencies alone (American Community Survey Handbook of Questions and Current Federal Uses, 2014, pp. 139–143). These include use by the Department of Labor to analyze the educational attainment of workers by occupation (similar to the application in this paper) and by the EEOC to identify potential under-representation in job categories under the Civil Rights Act of 1964.

Earnings. The definition of earnings under the ACS also differs from that used by OES. Question 47 of the ACS questionnaire (U.S. Census Bureau, 2016, p. 11) asks about earnings in the past twelve months, including the subcategories of earning from employment and from self-employment.⁷ Thus, the earnings captured by the ACS include farming, self-employment, overtime, bonuses, and shift premiums—all of which are excluded in the OES. Further, as we discuss in ACS Extraction Methodology, we limit the earnings examined to persons who answer other questions that indicate full-time employment.

Comparison

Figure 1 presents a comparison of some key attributes of both surveys. Most either need no explanation or were already explained. However, the entries for “Detail occupations” and “Geographic areas” bear some discussion.

Although OES and ACS share the same SOC coding foundation, ACS’s application is more limited.

Figure 1. Comparison of OES and ACS

	OES	ACS
Source	BLS	Census
Detail occupations	803	474
Geographic areas	655	Limited
Farm workers	No	Yes
Self-employed	No	Yes
Full-time	Limited	Yes
Education levels	No	Yes

The 2014 OES provides earnings data for 803 detailed occupations. The ACS PUMS files provide only 474, excluding military codes.⁸ The differences arise from one major source—Census’s duty to protect the confidentiality of the ACS respondents. Census avoids publishing enough information on the individual respondents in the PUMS files that would allow identification of a specific respondent. Thus, for occupations with limited likely respondents, Census will merge the occupation with other similar occupation(s) to protect the respondent’s identity.

Included with this article are spreadsheets (see Earnings Tabulations) that list the 474 ACS occupations tabulated for this paper, grouped by 32 summary levels. The difference between the ACS and OES categories requires merging of some SOC codes into single ACS codes. As an example, OES contains codes for Floral Designers, Designers, Fashion Designers, and Graphic Designers. ACS merges

all of these (plus a couple of others) into a single occupation of Designer (2016 Code List, 2016, pp. 80-94). The merger involving the most SOC codes is for the ACS title of Postsecondary Teachers, which combines 50 separate SOC postsecondary teaching categories (by discipline).

When providing employment areas for localities, OES generates tabulations for all states, all officially defined metropolitan areas, and several nonmetropolitan areas (Survey Methods, 2018, p. 1). This results in 655 sets of data within the fifty states in the 2017 survey (including the nation as a whole).⁹ Through the extraction process described in Appendix B, ACS data can be tabulated into all of these areas and more. However, given the purpose of this paper to subdivide occupation samples by education and gender, the results for smaller areas would be extremely limited. Therefore, our discussion will focus only on the nation as a whole and the largest metropolitan areas, as discussed in more detail in Local Occupation Earnings.

ACS National Occupation Earnings

For the study of earnings by occupation, the goal of this paper is to consider how the trends depicted in Figure 2 impact a given occupation. As shown, earnings in the United States have a strong positive correlation with the level of educational attainment.¹⁰ Further, this chart also depicts significant differences by gender at all levels of education. Since most occupations include persons of either gender and multiple levels of education, the analyses that follow attempt to quantify to what degree these relationships exist within a specific occupation.

ACS Extraction Methodology

We extract the data for our tabulations from the 2011–2016 PUMS files (ACS PUMS, 2016) using the criteria identified in Appendix A. This methodology is consistent with a paper we presented to the ACS Data Users Conference (Gibson, Use of ACS to Estimate Lifetime Loss of Earning Capacity as a Result of Disability, 2015). We note some important considerations encompassed in these criteria:

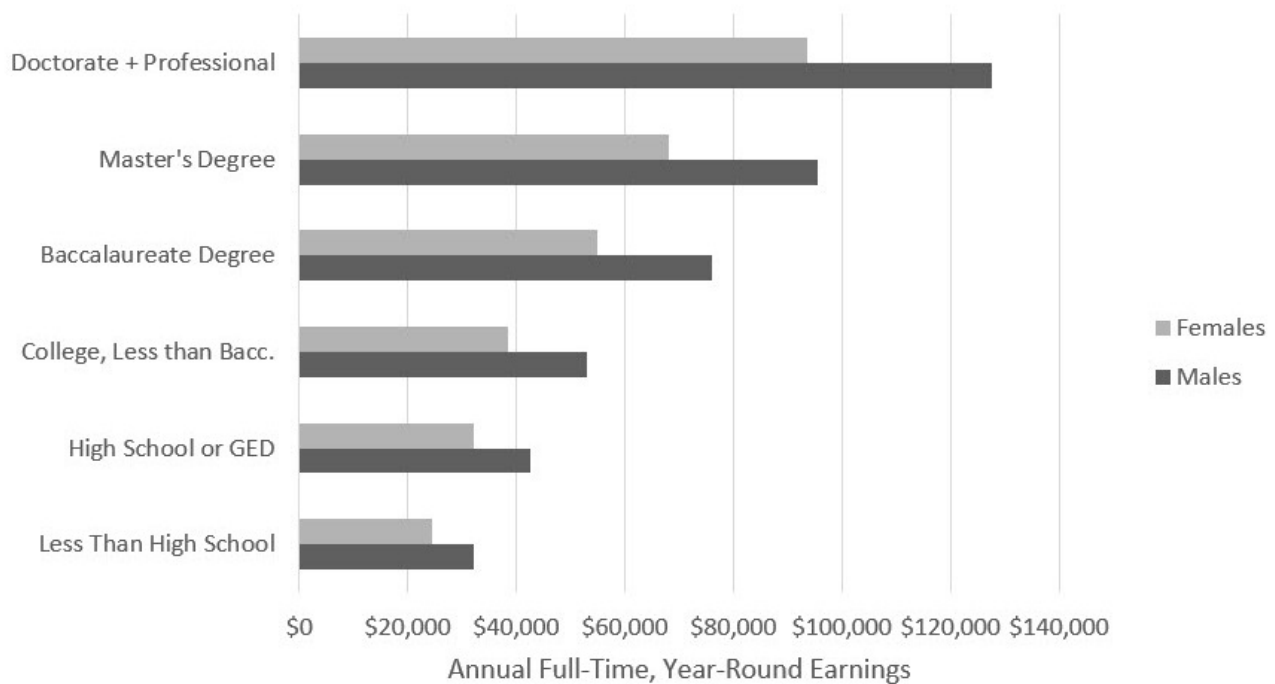


Figure 2. Median Full-Time Earnings by Gender & Education ²²

- We limit the sample to those working full-time (at least 35 hours per week), year-round (at least 50 weeks per year), or *FTYR* for short.
- We also limit the sample to persons in the prime working years of 25 through 64 to avoid distortion by those in the early exploration or later decline periods.
- For brevity of the paper and simplicity of the figures we present, we limit the education levels to the six presented in Figure 2.¹¹
- We state earnings as medians.¹²

We believe these considerations, along with those noted earlier for self-employment, earnings premiums, and farm workers, improve the results. However, they also reduce the ability to compare the results directly to values from the OES. That said, we note that our earlier working paper (Gibson, 2015) demonstrates any variance is within expectations.

Figure 3 presents the resulting sample size and estimated population.

Results by Education

Figure 3. Extracted Sample Size

Education Level	Sample Size (n)	Estimated Population (000)
Less Than High School	357,730	7,097
High School or GED	1,234,637	21,946
College, Less than Bacc.	1,607,073	28,123
Baccalaureate Degree	1,233,385	21,516
Master's Degree	541,432	8,981
Doctorate + Professional	236,369	3,799

The accompanying spreadsheets (see Earnings Tabulations) contain our results detailed by gender, education, occupation, and summary occupation groupings. Figure 4 extracts the results for the five major occupations groups as identified in ACS documentation (2016 Code List, 2016, p. 58). This figure includes prevalence percentages in each cell, indicating what fraction of the jobs in the respective occupation group persons at each level of education hold.

Note that the progression of earnings by level of education depicted earlier in Figure 2 holds true with each occupation group. Also note that only the “Management, Business, Science, and Arts” group is held in the majority by persons with a baccalaureate and above. It thus has the highest level of earnings. However, even those with lower levels of education earn more in this group than they do in any other.

Of course, job seekers obtain employment in a specific occupation, not by major grouping. The detail for all 474 occupations provided in the companion spreadsheets (see Earnings Tabulations) can be a bit daunting to review and make general observations. However, Figure 5 presents an extract of eleven of the most common occupations,¹³ sorted in decreasing order of prevalence. From Figure 5, we offer the following observations:

- The trend of increasing earnings by level of education generally holds true within specific occupations. Use of earnings for the occupation as a whole (All Levels) for any occupation is rarely an accurate predictor compared to education-specific earnings. Thus, education, presumably through the addition of skills and training, makes a significant impact on earnings within a common occupation.

Figure 4. Median Earnings by Occupation Group and Education²³

	< High School	HS or GED	College. < Bacc.	Bacc.	Master's	Ph. D. / /Profess.	All Levels
All Occupations	29,500 (8%)	38,000 (24%)	44,500 (31%)	63,500 (23%)	79,500 (10%)	106,000 (4%)	51,000
Management, Business, Science, and Arts	44,000 (1%)	49,000 (9%)	56,000 (24%)	72,000 (37%)	81,000 (20%)	112,000 (9%)	69,000
Nat. Resources, Constr., & Maintenance	32,000 (19%)	46,000 (41%)	53,000 (32%)	56,000 (6%)	61,000 (1%)	-	46,000
Production, Transport., and Material Moving	31,000 (19%)	40,000 (41%)	45,000 (32%)	53,000 (6%)	62,000 (1%)	-	40,000
Sales and Office	30,000 (4%)	37,000 (28%)	41,000 (40%) (40%)	55,000 (23%)	70,000 (4%)	76,000 (1%)	42,000
Service	23,000 (16%)	28,000 (34%)	34,000 (36%)	44,000 (12%)	53,000 (2%)	54,000 (1%)	31,000

Figure 5. Median Earnings by Occupation and Education—Sample Occupations²⁴

	< High School	HS or GED	College. < Bacc.	Bacc.	Master's	Ph. D. / /Profess.	All Levels
Misc mgrs, incl postmasters.	50,000 (2%)	57,000 (14%)	69,000 (26%)	94,000 (36%)	115,000 (18%)	133,000 (3%)	84,000
First-line supervisors retail sales workers	34,000 (5%)	40,000 (30%)	44,000 (39%)	55,000 (22%)	62,000 (4%)	85,000 (1%)	44,000
Driver/sales workers and truck drivers	41,000 (17%)	46,000 (50%)	48,000 (28%)	47,000 (4%)	48,000 (1%)		46,000
Secretaries and admin. assistants	33,000 (2%)	38,000 (28%)	40,000 (49%)	44,000 (18%)	46,000 (3%)		40,000
Elementary & middle s school teacher			30,000 (4%)	49,000 (43%)	61,000 (49%)	65,000 (4%)	55,000
Registered nurses		55,000 (1%)	64,000 (40%)	72,000 (48%)	86,000 (9%)	79,000 (2%)	70,000
Accountants and auditors		45,000 (4%)	49,000 (16%)	71,000 (56%)	85,000 (21%)	97,000 (2%)	69,000
Retail salespersons	27,000 (6%)	33,000 (30%)	39,000 (37%)	53,000 (23%)	57,000 (3%)	50,000 (1%)	39,000
Customer service representatives	28,000 (3%)	34,000 (26%)	36,000 (44%)	47,000 (22%)	55,000 (4%)		38,000
Janitors and building cleaners	25,000 (24%)	31,000 (46%)	34,000 (25%)	34,000 (4%)	34,000 (1%)		30,000
Construction laborers	29,000 (32%)	37,000 (41%)	43,000 (21%)	46,000 (5%)	54,000 (1%)		35,000

- Workers with less education than might typically be assumed necessary for an occupation (e.g., elementary and middle school teachers with less than a baccalaureate) are noted in multiple positions. However, their earnings are typically far below those with higher levels of education. Identification of education thus allows isolation of the outliers.
- Conversely, workers with a higher level of education than might typically be expected (e.g., construction laborers with baccalaureate or master's degrees) are also frequently noted. However, even in these positions, persons with higher levels of education command significantly higher earnings than the occupation median. It is unlikely that employers for these positions are offering higher rates of pay merely because the employee has higher education. Rather, it is more likely that education is a signal of increased human capital that makes these employees more valuable for their respective positions.

From the “Estimated Population” column of Figure 3, we note that the distribution of FTYR employees falls (approximately) evenly into three groups: high school diploma or less, college less than baccalaureate, and baccalaureate and above. Let us refer to the first group as “Lower Education” and the last group as “Higher Education.” We further classify occupations held by at least two-thirds of one of these two groups as either “Lower Education Occupations” or “Higher Education Occupations,” and offer the graphs shown in Figure 6 and Figure 7.

These graphs share the following components.

- The columns depict the median earnings by level of education. To read the value of these earnings, reference the vertical axis on the left side of the graph.
- The two lines depict the median earnings as a percentage of a given standard. To read the value of these lines, reference the vertical axis on the right side of the graph.
- The solid lines show the earnings as a percentage of the median of all higher or lower education occupations, respectively.

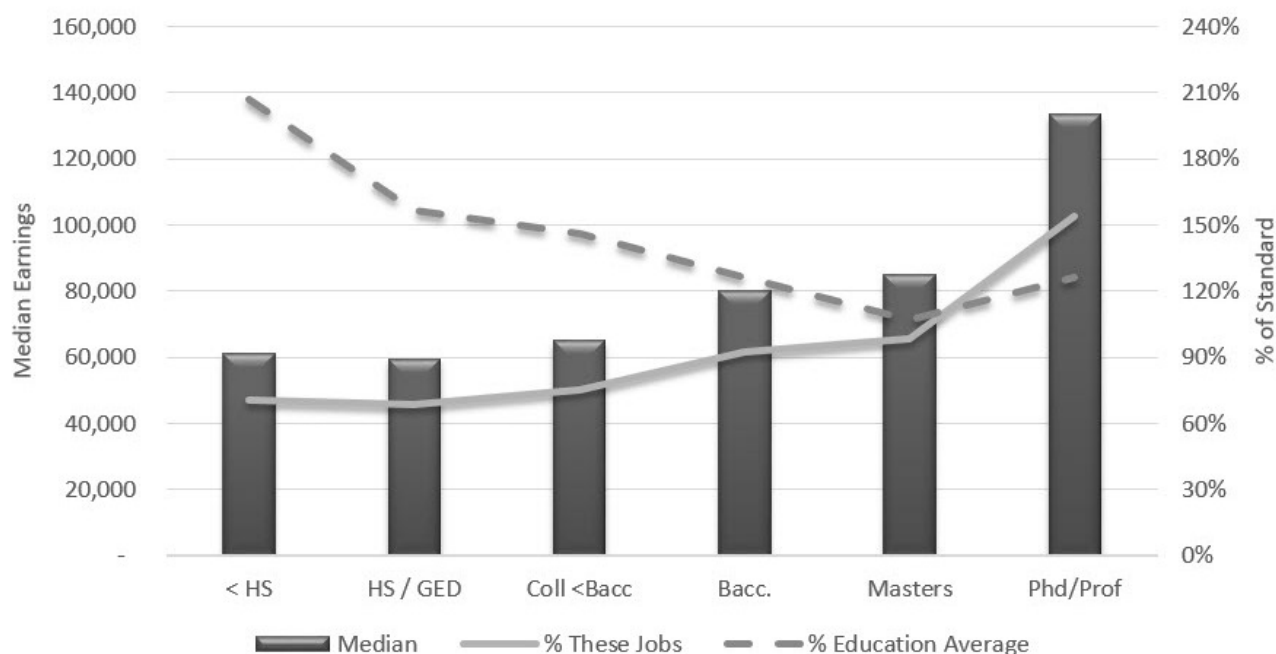


Figure 6. Earnings in Higher Education Occupations

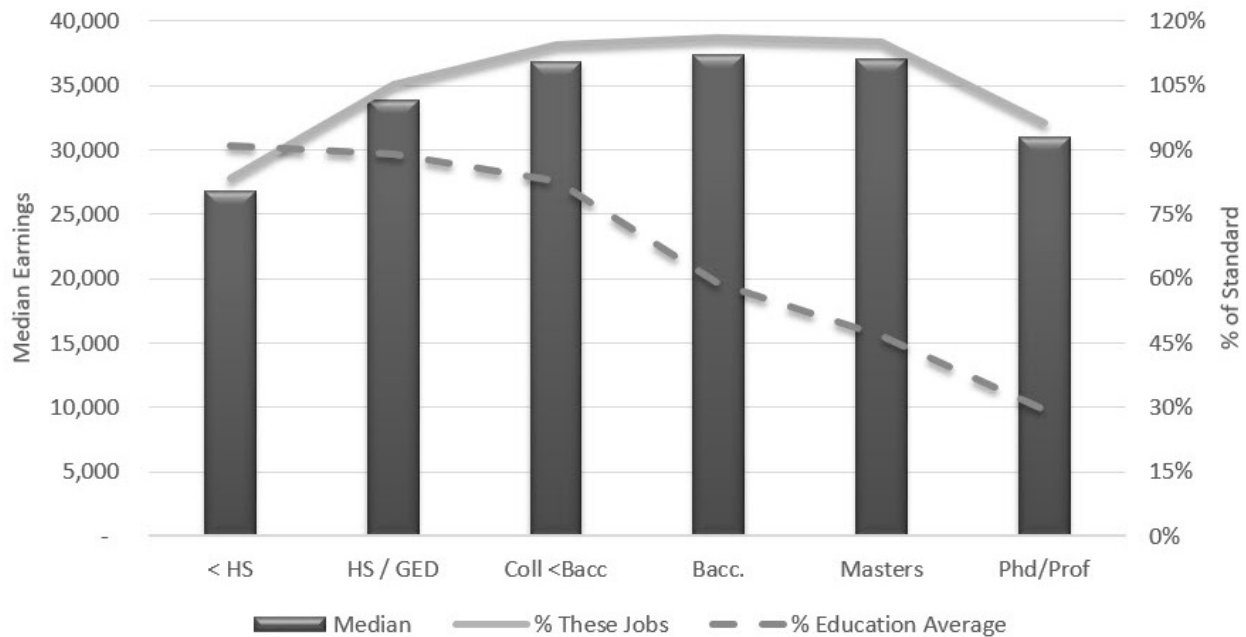


Figure 7. Earnings in Lower Education Occupations

- The dashed lines show the earnings as a percentage of earnings at each level of education for all occupations combined, as shown in Figure 4.

Let us focus first on the higher education occupations depicted in Figure 6.

- First, note that consistent with our review of the results for individual occupations, this shows increasing earnings with increasing education.
- Despite the fact that this graph summarizes occupations dominated (at least two-thirds) by persons with at least a baccalaureate, employees with lower levels of education occupy a significant number of positions. Noting that the dashed line indicates these employees earn 150% to 200% of what other workers with similar levels of education earn, one may presume their presence in these occupations is indicative of human capital they possess beyond their formal education.
- The dashed line remains above 100% for all education levels. This indicates that earnings at all levels of education are generally maximized when working in more highly skilled occupations.

Next, consider the lower education occupations in Figure 7. Recall that this summarizes all occupations held predominantly by persons with a high school diploma or lower.

- Although the columns depicting the median earnings do not demonstrate a pronounced step-like progression, the solid line demonstrates that persons with higher levels of education usually earn more than the median for these occupations. (i.e., The line is above 100%.) Thus, the human capital of these workers, who are likely overqualified in formal education, leads to greater value to their employers.
- Despite the above observation, the dashed line indicates that earnings in these positions are significantly below what workers with their respective levels of education typically earn.

Thus, the overall results of segregating occupation earnings by highest level of educational attainment shows great promise. Consistent with overall findings that higher levels of education result in

higher earnings, our extraction shows that occupation earnings estimates are greatly improved by considering the significant impact of diversifying these estimates by level of education.

Results by Gender

The “Gender Gap,” or observed differences in overall earnings between men and women, has been a hot topic of analysis, discussion, and debate for several decades now. Many researchers have offered valuable insight into the causes and composition of the gap. More articles exist than we can possibly detail on this topic. However, we note work by Blau and Kahn (1999), Olivetti and Petrongolo (2014) and the American Association of University Women (2018) as a start. These and other articles note there may be explainable drivers of the differences that are nondiscriminatory, including the following:

- Do the wage earners have the same education levels? This paper controls for this variable. In fact, the graph in Figure 2 shows significant variation across all levels of education.
- Are the wage earners performing similar work? This paper controls for comparability of job titles.
- Are the results from the same quantity of work? We control for this by considering only earnings from full-time, year-round (FTYR) employment.
- Do the wage earners have similar training (outside of formal education) and experience? Exploration of these variables is beyond the scope of the ACS, and therefore they are not controlled in our analyses. The user must consider this limitation when contemplating the discussion below.

Using the gender-specific values for the five major non-military occupation categories, we offer the summary in Figure 8. Here, the “% Female” column presents the percentage of FTYR jobs held by females. The remaining values show the gap as the decrease in male to female FTYR earnings as a percentage of male earnings.¹⁴

- Note that the gap for the All Occupations row is relatively constant over the six education categories at 23%-29%. However, for the “All Levels” category, the value is significantly less: 18%. This decrease from the education-specific gaps results from the fact that the female FTYR population as a whole is more highly educated,¹⁵ resulting in higher earnings. Thus, the overall gap of 18% masks the difference in distribution, and we must use caution measuring the gap for any occupation without controlling for education.

Figure 8. Gender Earnings Gap by Occupation Group

	% Female	< High School	HS or GED	College. < Bacc.	Bacc.	Master's	Ph. D. / /Profess.	All Levels
All Occupations	43%	23%	25%	27%	28%	29%	27%	18%
Management, Business, Science, and Arts	49%	24%	28%	24%	28%	30%	27%	28%
Nat. Resources, Constr., & Maintenance	4%	33%	26%	19%	11%	-2%		24%
Production, Transport., and Material Moving	20%	29%	30%	29%	22%	20%		32%
Sales and Office	59%	21%	19%	22%	32%	39%	39%	27%
Service	50%	16%	22%	33%	35%	33%	37%	27%

- Only the Natural Resources, Construction, & Maintenance group shows gaps approaching 0%.¹⁶ However, this group has only 4% of the sample as female.

Of course, measurement at the major occupation group level is insufficient to form conclusions on the gender gap since the distribution can differ significantly among the more skilled occupations within a group. However, perusal of the results in the accompanying spreadsheets should reveal pervasive differences throughout the occupations at each level of education. In fact, Figure 9 presents a tabulation of the education-specific (excluding the “All Levels” category) cells from the spreadsheet (see Earnings Tabulations).

- The first row shows that in occupations where males and females each represent at least 10% of the weighted sample, 95% of all cells have male earnings more than those of females. The disparity exceeds 10% in 75% of the cells, and exceeds 20% in 36% of the cells.
- The next two rows focus on whether the occupations are dominated (at least 67%) by one of the genders.
- Examples of male-dominated occupations include computer programmers, butchers, couriers, and barbers. The observed rates where male earnings exceed those of females are somewhat higher than for the general population.
- Examples of female-dominated occupations include social workers, registered nurses, flight attendants, court clerks, and hairdressers. Even controlling for these occupations does little to improve the percentage of cells where male earnings significantly exceed those for females.

Thus, we can conclude that the gender gap is pervasive across occupations and education. Further, we know that it has persisted for decades despite scrutiny by the press and government agencies. The question remains on how to use the results when using the earnings to predict the future potential for any given individual:

- Should we ignore the gender-specific results and focus only on the “Both Genders” values?
- Should we assume that the gap will eventually close and ignore it?
- Should we assume the gap is permanent or representative of what is likely in the long term, and use only gender-specific values?
- Should we consider the gender-specific values in the evaluatee’s specific context and make a case-by-case decision on the appropriate value to use?

We do not prescribe any standard approach for all professionals to apply. We merely offer the results in the accompanying spreadsheet combined with the above analysis for consideration.

Local Occupation Earnings

Although earnings at the national level may be informative and appropriate for use in many cases, users generally seek data specific to a given geographic area. As we noted earlier, the ACS is designed to collect and tabulate data at the community level—down to communities significantly smaller than the 655 areas (Figure 1) reported by the OES. However, the sample size is strained by delineating community-level data by 474 ACS occupations, 2 genders, and 6 education levels. Thus, we must restrict our study to larger metropolitan areas.

Using the methodology detailed in Appendix B, we were able to extract sufficiently delineated results for metropolitan areas of at least 400,000 in population. This encompasses 308 combined (CSA) or stand-alone (CBSA) metropolitan areas.¹⁷ The accompanying spreadsheets for this article include the results for the top 30 areas in population according to the 2010 census. A review of these spreadsheets will reveal that the trends by gender and education noted at the national level hold true within each metropolitan area.¹⁸

Figure 9. Analysis of Education-Specific Cells with Gender Earnings Differences

	# of Cells	> 0%	> 10%	> 20%
All occupations (at least 10% female and 10% male)	1,340	95%	75%	36%
Male-dominated (at least 10% female and 67% male)	417	97%	78%	41%
Female-dominated (at least 67% female and 10% male)	272	94%	63%	20%

Earnings Tabulations

For practical application of this research, one would naturally need the detailed earning information discussed throughout this article. However, given the enormity of the tabulations, they cannot be printed as part of the article itself. Rather, the detail is provided in two spreadsheets stored on the author's website.

- **Median Occupation Earnings**—this spreadsheet contains the median earnings by occupation, gender, and education for the United States, as well as for the top 30 metropolitan areas. Readers may access the data at:
http://davegibson.net/articles/rehabpro26_1/MedianOccupationEarnings.xlsx
- **Detail Occupation Earnings**—for all of the same cells in the Median Occupation Earnings spreadsheet, this spreadsheet provides sample sizes, estimated populations, standard errors, and earnings at multiple percentile levels. Readers may access the data at:
http://davegibson.net/articles/rehabpro26_1/DetailOccupationEarnings.xlsx

Summary

This article provides earnings at the detail occupation level nationally and for the thirty largest metropolitan areas. These tabulations provide a rich source of information on the relationship of earnings by gender and education within these categories.

Our discussion and analyses focused on three key areas of occupational earnings estimates: survey composition differences between the OES and ACS, the impact of specific education identification, and the impact of gender. We believe that in each of these areas, the ACS offers distinct advantages that can lead the user to more informed projections of earnings for a given individual in a target occupation.

Although the OES is a well-administered and controlled source offering some distinct advantages over the ACS, we believe the composition of wage and self-employed earnings merged with the ability to isolate an occupation more specifically makes the ACS a superior tool. In some cases, where the OES provides a more specific occupation level or geography than the ACS, use of both surveys through imputation may be appropriate.

Variation of earnings by education level, as demonstrated in the accompanying spreadsheets consistently confirms that even within a specific occupation, the expected earnings tend to increase with education. Given these results, it is difficult to support use of an occupation-wide measure of central tendency as a one-size-fits-all measure.

Finally, the gender gap is a political hot potato for which this paper provides analyses and data to support the reader's decision on appropriate measures of occupation earning. The results overwhelmingly demonstrate pervasive earnings for males above those for females controlled for education, full-time employment, and occupation. Although we fall short in providing a definitive method in how these results should be applied when projecting the earnings for a given candidate in a specific occupation, we believe the paper provides a foundation that must be considered for the application.

Appendix A

Earnings Extraction Criteria

Figure 10 identifies the variables from the 2011–2016 PUMS files and the related values used to extract the earnings summarized in this paper. Earnings are stated as medians in terms of 2018 dollars (see below) and rounded to the nearest thousand to simplify the summarization process. This is consistent with the methodology in our presentation to the ACS Users Committee (Gibson, 2015).

Earnings Restatement to Current Dollars

To state the earnings from the six years of extracted PUMS data in common-year terms, we applied the methodology identified in “Restating Earnings in Common-Year Terms When Combining Multiple ACS PUMS Files” (Gibson, 2017). This approach weights the observed change in FTYR earnings by education using the most current education distribution. As a result, the earnings from the 2011-2016 PUMS files were increased by 14.7%, 13.7%, 11.1%, 9.6%, 8.1%, and 5.3% respectively to reflect their values in 2018 dollars.

Appendix B

Metropolitan Area Extraction Process

The PUMS files released by Census provide geographic identification at the lowest level of Public Use Microdata Areas (PUMA).¹⁹ PUMAs are logically segregated areas within a state that contain a population of at least 100,000 persons. Although Census certainly has the information to identify specifically where the respondent lives, it restricts the data released to the public via PUMS files to these geographic areas to protect the respondent’s identity. Thus, to tabulate our occupation data at the

Figure 10. Earnings Extraction Criteria

Variable	Description	Use
AGEP	Age	Select all respondents in the primary working ages of 25 through 64
SCHL	Educational attainment	See Figure 11 in the on-line appendix
ESR	Employment status	Civilians: use 1, 2, 3, or 6
SEX	Gender	1 for males, 2 for females
PWGTP	Weight	Use weight to determine median
WKHP	Usual hours worked per week in past 12 months	>= 35 for full-time
WKW	Weeks worked in past 12 months	>= 50 for year-round
ADJINC	Seasonal adjustment factor	Multiplied by PERNP
OCCP	Occupation recode	Provides a Census occupation code that translates to SOC occupations
PERNP	Total earnings (wage & self-employment)	Use as earnings value, multiplied by ADJINC and adjusted to current year as discussed on page 22.
TYPE	Household variable to indicate type of house	1 to exclude group quarters

Figure 11. Education Level Classification²⁵

SCHL Values	Education Level
0 – 15	Less than high school
15 – 16	GED or High school graduate
17 – 20	College, less than baccalaureate ^{xxvi}
21	Baccalaureate degree
22	Master's degree
23 – 24	Professional or doctorate degree

metropolitan area level, we must add two variables—state and PUMA—to the criteria identified in Appendix A.

Given the PUMA target size of 100,000 or more and the fact that our extraction focuses only on metropolitan areas of at least 400,000, we must combine multiple PUMAs to measure each area. To do this, we rely upon a valuable service from the Missouri Census Data Center (MABLE, 2014) which provides cross-references of PUMAs²⁰ to multiple types of metropolitan areas. We focus our collection at two different levels, either of which may cross state boundaries.²¹

- Core-Based Statistical Areas (CBSA) – also referred to as Micropolitan Statistical Area. This is the most common form of identifying a metropolitan area.
- Combined Statistical Areas (CSA) – Contiguous CBSAs may be combined into CSAs. Most of the major metropolitan areas in the United States have related CSAs. As an example, the Chicago CSA combines the CBSAs of Chicago, Kankakee, Michigan City-La Porte, and Ottawa-Peru.

Using this translation and extracting data for all states and metropolitan areas (of either of the above types) with a population of at least 400,000 in the 2010 Decennial Census, we computed values for almost 650,000 occupation /education combinations. Reporting the results for all of these is beyond the scope of this paper. However, the accompanying spreadsheets provide the results for the top 30 metropolitan areas.

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Endnotes

- ¹ This paper is an expansion and update of a presentation given to the 2014 American Community Survey Data Users Conference (Gibson, 2014) and a working paper presented to the 2015 IARP Annual Conference (Gibson, Use of ACS to Improve Occupation Earnings Estimates, 2015).
- ² David S. Gibson, MBA, MRC, is a Senior Analyst for Vocational Economics, Inc. in Chicago, Illinois.
- ³ This paper adopts an editorial “we” to refer to the author, who is solely responsible for the content.
- ⁴ Further detail is tabulated and available from the author.
- ⁵ Many of the SWAs publish similar data to the OES on their respective state websites. These data usually emanate from the OES survey process.

⁶According to the 2016 ACS, more than 500,000 people work in farm occupations on a full-time, year-round basis; and more than 7 million full-time earners had earnings from self-employment. (ACS PUMS, 2016).

⁷ omits others that deal with passive income or earnings unassociated with an occupation.

⁸This quantity is accurate for the 2012–2016 PUMS. The data for 2011 included 540 categories, with the difference of 66 categories merged with others in the most recent PUMS. Therefore, we recoded these earlier PUMS to the 2012 definitions to enable combination with the later years.

⁹Given sample size limitations in some of the smaller markets, earnings data may not exist for several occupations.

¹⁰The education levels shown here and used throughout this paper are a collapsed subset of all of those available through the ACS. We limit them to the six levels in Figure 2 to keep the analyses and charts that follow to a minimum size.

¹¹ The spreadsheets accompanying the article have some more detail. Further detail is available from the author.

¹² The medians are rounded to the nearest thousand to simplify the extraction process.

¹³This includes the top ten by national prevalence, plus construction laborers to assure all five of the major occupation groups are represented.

¹⁴ Computed as $1 - (F/M)$, where F is FTYR female earnings, and M is FTYR male earnings.

¹⁵ Per our extracted sample (ACS PUMS, 2016), only 28% of FTYR females have a high school diploma or less, versus 36% of males. Conversely 39% of females have a baccalaureate or higher, versus 35% of males.

¹⁶ In fact, female earnings are slightly higher at the Master's degree level, although the difference is not statistically significant.

¹⁷As discussed in Appendix B, metropolitan areas are defined at multiple levels, of which we use two: CBSAs, and CSAs. As a result, there is some duplication in the areas included. For example, the Chicago CBSA qualifies as over 400,000 individually, and the Chicago CSA that combines the Chicago CBSA with smaller neighboring CBSAs also qualifies.

¹⁸ We have not yet attempted to study the degree to which education or gender is more or less important for each metropolitan area, but leave this as a topic for future research.

¹⁹These acronyms provide a source of confusion for many persons new to the ACS data. PUMS (Public Use Microdata Sample) should not be confused with PUMA, which is a geographic designation.

²⁰ Note that the PUMA definition changed in the 2012 ACS. When using the MABLE cross-references, we relied upon the "PUMA 2012" values for the 2012 and 2013 ACS files, and the "PUMA 2000" values for the 2011 ACS files.

²¹ The hierarchy of codes is confusing. We refer the reader to the web page "Geography" (Missouri Census Data Center, 2016) for more detail.

²² Extracted from the 2016 ACS (ACS PUMS, 2016) and restated to 2018 dollars as documented in Appendix A.

²³ Values are suppressed where a cell represents less than 0.5% of the weighted population size of a given occupation.

²⁴ Values are suppressed where a cell represents less than 0.5% of the weighted population size of a given occupation.

²⁵The education levels encompass all the SCHL values tracked by the ACS. We collapse them to these six categories only for the brevity of our analyses and exhibits.

²⁶ This includes those with associate degrees.

Use of ACS to Improve Occupation Earnings Estimates: An Initial Reaction

Kent A. Jayne

Worklife Resources

A well reasoned and researched article entitled “Use of ACS to Improve Occupation Earnings Estimates,” by David S. Gibson, MBA, MRC, is published in this edition of the *Rehabilitation Professional*. Mr. Gibson is a Senior Analyst for Vocational Economics, Inc.

The paper is divided into seven major headings. It addresses the need for information often used by vocational experts, economists and others, to more clearly delineate occupational earnings by gender and educational attainment. It describes the differences in data collection and extraction between the Bureau of Labor Statistics *Occupational Employment Survey* (OES) and the *American Community Survey* (ACS) from the U.S. Census Bureau. The article addresses the most current data and methodology.

The article discusses the varying granularity of occupational descriptions of both surveys, the OES describing 803 occupational groupings, and the ACS describing 474. The smaller grouping of the ACS necessarily requires occupational categories which are necessarily wider in scope with regard to description and therefore may not be as specific as those of the OES. This of course may increase the analyst’s acceptable level of error when applying an occupation to description of the marketable skills of an individual job seeker, with educational attainment or specific human capital which may or may not be central to the occupation.

Another significant difference between the OES and ACS surveys is the sample size. The OES, working with the state workforce agencies who gather the data, targets approximately 200,000 establishments, meaning “employers”, not “employees”, encompassing more than 600 metropolitan and non-metropolitan areas. It thus depends upon the expertise of state workforce agencies and the businesses within its jurisdiction to provide accurate descriptions, earnings, and categorizations. Annual earnings in the OES are then based on reported hourly wage rates multiplied by 2080 hours per year. Some earners, of course, may be misclassified, or may not be working in full time year round jobs. The OES data further excludes many farm occupations. All self-employed workers, regular bonuses, overtime and premium pay, which may be a normal part of earnings, are also excluded in the OES, thus introducing further variance.

The ACS samples households and individuals. It includes more than 3 million observations each year, allowing more accuracy and cross-tabulations of data, assuming of course that the individuals in households completing the survey understand and accurately answer the Survey questions. This kind of non-sampling error can significantly impact the results and conclusions of the survey. Non-sampling error includes intentional and non intentional bias in reporting earnings. ACS does include earnings from farming, overtime, bonuses and self employment. Thus, the methodology of sampling businesses (OES) versus the sampling of the population (ACS) can confound comparisons.

The major purpose of the Gibson article is to tabulate the differences between OES and ACS with regard to educational attainment and gender, and how to improve estimates for use in applications for a number of professionals, including vocational experts and economists. In this reader’s opinion the article is a significant contribution to our literature. The article provides nine tables (Figures 1-9), which reveal a wealth of information regarding earnings by educational attainment as well as the earnings gender gap in these occupational groups, even when controlled for education and occupation. The results clearly show the continuing gender gap in pay by occupation at virtually every level of educational attainment and within each occupational group. Across *all occupations* from “<High School” to “PhD/Professionals”, the gender gap is relatively constant over all six educational categories.

ries, rising from a gap of 23% at less than high school to 29% at the Master's level, and 27% at the PhD/Professional level.

The paper notes that the distribution of data in the ACS sample size, across 474 occupations, 2 genders, and 6 educational levels, necessarily restricts the study to larger metropolitan areas. This may limit some use in less populated metro areas and smaller cities. Caution is therefore advised in its application.

Overall, despite the data limitations we would agree with the author that “. . . we believe the composition of wage and self employed earnings merged with the ability to isolate an occupation more specifically makes the ACS a superior tool. In some cases, where the OES provides a more specific occupation level or geography than the ACS, use of both surveys through imputation may be appropriate.” (Gibson, page 51)

We agree, and further compliment the author, David S. Gibson, MBA, MRC, for bringing to publication a fine piece of research which is very pertinent to forensic vocational analysis.

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IARP Headquarters:

1000 Westgate Drive, #252
St. Paul, MN 55114
888-IARPQaA (888-427-7722)
webpage: <http://www.rehabpro.org>

Executive Director:

Kim Bailey, kimb@rehabpro.org

Director of Member and Chapter Services:

Dale Regnier, daler@rehabpro.org

Director of Meetings:

Lisa Konsti, lisak@rehabpro.org

Communications Manager:

Sue Yoemans, suey@rehabpro.org

Professional Development:

Julie Renner, juliar@rehabpro.org

Sales Manager:

Sarah Ewald, sarahe@rehabpro.org

Editor:

Timothy Field, timfield@elliottfitzpatrick.com

Managing Editor:

Currently Vacant

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Manuscript Submission Deadlines: Deadlines for submissions are February 5, May 5, August 5 and November 5 with publication goal dates of February, May, August and November. There is no guaranteed publication date for an accepted article.

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Publication Guidelines

The Rehabilitation Professional (RehabPro) is the quarterly publication of the International Association of Rehabilitation Professionals (IARP). The articles are written with the rehabilitation professional in mind. Articles are suggested for, but not limited to, the following tracks: case management, disability management, forensic/life care planning, and business development. The articles are reviewed by the Managing Editor and may be reviewed by members of the *RehabPro* Committee.

Author(s) should follow the most recent edition of the Publication Manual of the American Psychological Association. The names and mailing addresses of the authors should be included so that a complimentary copy of the Rehab Pro can be sent in appreciation.

Articles should be in Microsoft Word format, using Times Roman font, and be double-spaced. Tables need not be camera ready since they are reset to match the style of the journal. Tables should be located at the end of the document. Graphs and figures should be included as separate files and be in a graphic format, e.g., JPG, TIF. Contact the Managing Editor for instructions for sending photographs. Articles should be sent to the Managing Editor as an email attachment.

Abstracts of no more than 120 words each should be included. The abstract should include a brief summary of the content of the article. Author notes should conform to current APA 6th edition format.

Authors should use acceptable language, which respects individuals. Non-sexist and gender neutral language should be used. Also, language that equates the individual with his or her disability should be avoided. For example, "a person with a learning disability" should be used instead of "the learning disabled."

Upon review, an article is either accepted or rejected. Accepted articles often require editing for spelling and grammar. These are done without contacting the authors. Authors will be contacted, however, if there are questions about the meaning of the content or if significant changes are needed to syntax. Articles are usually published in the order received.

General Instructions:

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Example: **<Insert Table 1 approximately here>**
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