

CREATING A RESEARCH DATABASE ON HOLLAND'S THEORY AND PRACTICAL
TOOLS: TECHNICAL REPORT NO. 47¹

By

Elizabeth A. Ruff, M.S./Ed.S.
Robert C. Reardon, Ph.D.
Sara Cummings Bertoch, M.S./Ed.S.

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The Center for the Study of Technology in Counseling and Career Development

University Center, Suite A4148
The Florida State University
Tallahassee, FL 32306-2490

850-644-6431 (voice) 850-644-3273 (FAX)
<http://www.career.fsu.edu/techcenter/>

¹ Elizabeth Ruff, M.S./Ed.S. is pursuing her Ph.D. in Counseling Psychology and School Psychology, is a career advisor and teacher at Florida State University, Tallahassee, Florida. Robert C. Reardon, Ph.D., is Professor and Director for Instruction, Research, and Evaluation in the Career Center at Florida State University. Sara Cummings Bertoch, M.S./Ed.S. is pursuing her Ph.D. in Counseling Psychology and School Psychology, is a career advisor, and teacher at FSU. The authors thank Dr. John Holland, Gloria Colvin, Dr. Janet Lenz, Jill Lumsden, and Melissa Lewis for their assistance throughout the development of this project.

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Abstract

This paper describes the creation of a comprehensive bibliography of 1,609 reference citations related to John Holland's theory and applications. This list of references may be used by researchers, students, practitioners, and teachers to develop or enhance their understanding of Holland's work over the past 55 years. Analysis of this bibliography may be used to consider the state of Holland's work from 1953 to early 2007. We examined the rate of publication over time; topics being researched including the application, theory/validity, and alternate forms of his work; as well as how Holland's work is being used with diverse and specific populations. Data indicate that Holland's work has been consistently present in references published since 1953 and contrary to speculation by some, references related to his work are not declining. Further analysis indicates a continued interest in the use of Holland's work with both diverse and specific populations including gender, race, ability, and occupation. We examined the type of references such as journals, book chapters, dissertations, and presentations as well as the quality of journal publications. Journals appear to have the largest number of references although a significant number of references were identified in the other sources. The rate of publication in six prestigious professional journals was examined in comparison to 191 other journals. Finally, we documented strategies and materials used in the creation of this bibliography in order to encourage the development of comprehensive bibliographies on other theorists and applications.

Preface

The catalyst for this project occurred in 2003 when Dr. Robert Reardon and Dr. Janet Lenz presented at a conference in Iceland on the use of the Self-Directed Search (SDS) with diverse populations. Elizabeth Ruff created a bibliography of 15 references relating the use of the SDS with such groups, and after the successful application of this bibliography we decided to continue research of references related to Holland's theory and applications. We have found that some professionals question the validity of Holland's instruments with diverse populations. Since the SDS was published over 35 years ago, some have questioned whether interest in this assessment is waning. As a result, we created a second bibliography encompassing a large number of Holland-related references.

We identified a bibliography published by PAR (1994) with Holland-related references categorized by *Application* (how the SDS was being used), *Alternate Forms* (other PAR published assessments based on Holland's theory), *Theory/Typology/Validity* (research on the validity and reliability of the theory and assessment), and *Diverse Populations* (how the SDS was being used with divergent ethnic groups). We added gender to the *Diverse Population* category. While collecting references, we also noted other groups specified in research did not necessarily fall within the *Diverse Populations* category, e.g. major, occupation/field, area of interest, level of education, and age. Therefore, a fifth category of *Specific Population* was added to this comprehensive bibliography, which was presented at the National Career Development Association (NCDA) Conference in Orlando in 2005.

Feedback from the NCDA conference was positive and further interest in developing this bibliography was generated. We consulted with a reference librarian to identify the most comprehensive database searches available, and we used these searches to add over 1,000

relevant references. This most recent bibliography was developed over three years and contains information on thousands of Holland-related references. We next explored how to disseminate this information to the public.

A review of the career literature indicates this type of report has not been published previously. Hoping to set a strong precedent, we chose to include information that could be useful to those unfamiliar with Holland's work, professionals interested in the state of the science, and researchers seeking information on this topic.

Following this preface we provide a short biography of John Holland's theory and work, which may be a useful introduction for some readers. The process of creating a comprehensive bibliography of Holland's theory and applications are provided in a research format. Given the lack of similar bibliographies available to the public, we hope that future researchers will be able to replicate this methodology with other important works.

This document provides the most current bibliography of Holland's work until March 1, 2007. A link to this bibliography in a Word Excel format is provided. The authors intend for this Excel format to be used by a variety of readers such as students interested in career development, teachers and professors developing course materials, researchers locating references related to this topic, and professionals curious about the state of science and practice in this area. The bibliography may be manipulated per the users need by key word search, sorting by author, date of publication, key word, type of publication, and topic area.

Elizabeth A. Ruff, M.S./Ed.S.
Robert C. Reardon, Ph.D.
Sara Cummings Bertoch, M.S./Ed.S.

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Biography of John L. Holland

Born in Omaha, Nebraska on October 21, 1919, John Lewis Holland found himself in a lower class family of English-Irish decent. Holland took piano lessons from age 12-22 and considered becoming a musician. At the Municipal University of Omaha, Holland discovered psychology based on his interest in the course topics. He graduated in 1942 and joined the Army for three and a half years serving as a classification interviewer, test proctor, paralegal clerk, laborer, squadron clerk, psychological assistant, and Wechsler administrator.

Early indications of his potential for assessment development began when he created a sensitive 15-minute interview. Perhaps the first inkling of what was to become his typology theory, Holland's interview protocol suggested that people exemplify a single common psychological type. While studying counseling psychology at the University of Minnesota, Holland's interest in assessment of personality grew as indicated by his thesis topic on researching the relationship of art and personality, marrying his experiences in both.

The field of psychology began moving toward more evidence-based theories and methods in the 1940s, a trend still evident today. Working as a career counselor at Western Reserve in Minnesota, Holland was experiencing difficulties first hand with delayed assessment scoring options and incomplete occupational information. In 1953, he began developing the Vocational Preference Inventory (VPI; Holland, 1973). Almost simultaneously, Holland began interpreting Strong Vocational Interest Blank keys as measures of personality in a common-sense classification. These were the primitive beginnings of his six-category typology. The occupational lists for his VPI became the first form of occupational classification using his typology. Since 1959, he has been clarifying and elaborating a theory of careers.

Holland's later work for the National Merit Scholarship Corporation (1957-1963), American College Testing Program (1963-1969), and Johns Hopkins University (1969-1980) afforded him the opportunity and resources to amplify his research activities. During 1970, Holland created the first version of the Self-Directed Search (SDS) (revisions: 1977, 1985, 1994; Holland, 2000). During this time, Holland revised his typology twice and created stronger empirical support.

The influence of Holland's work continues to spread. With the help of Gary Gottfredson, Holland has improved the "efficiency and explanatory power of person-environment congruence using the Career Attitudes and Strategies Inventory" (CASI; Holland & Gottfredson, 1994). His occupational classification system has been applied to the *Dictionary of Occupational Titles* (DOT; U.S. Department of Labor, Employment and Training, 1992) and O*Net (Farr & Shatkin, 2004). With the Gary Gottfredson he created the *Dictionary of Holland Occupational Titles* (DHOC; Gottfredson & Holland, 1997). He added a vocational identity component to the theory by creating the My Vocational Situation (MVS; Holland & Daiger, 1980) assessment to be used with the SDS for combining the importance of cognitive awareness on career decision making.

Holland's typology is currently being used in many assessments and career tools including the Strong Interest Inventory (CPP Inc., 2004) and computer-assisted career guidance systems (CACGs) such as eDiscover (DISCOVER, 2005). There are numerous Holland-based assessments and materials currently in print. In addition to *You and Your Career* booklet (Holland, 1994), the most recent Psychological Assessment Resources (PAR) Catalog of Professional Testing Resource (PAR, 2007), identifies numerous Holland-based publications including SDS: Form E (Holland, 2000) for those with limited reading skills; My Vocational Situation (Holland & Daiger, 1980); and the *You and Your Career* (Holland, 1986) booklet used

with the SDS: Form R for explaining the typology and inventory. The SDS has been translated into more than 25 languages including Icelandic, Chinese, Greek, and Indonesian.

John Holland's work has undoubtedly influenced the entire field of career counseling. The theory and applications that have been developing over the past 50 plus years have generated a large amount of research and professional commentary. In order to understand where this theory has been and it's the current status, we identified the body of resources and gleaned information from trends in reference citations. This research attempts to assess the state of Holland's theory and applications by examining the trends in reference citations of his work since 1953, the topics being researched, the stature of the publications, and the dissemination of the theory into other fields of endeavor.

Introduction

Holland's theory, as described in *Making Vocational Choices* (Holland, 1997), is currently one of the most widespread in career counseling. However, as time passes will this theory and applications be considered outdated? Psychological Assessment Resources, Inc. (PAR, 1994) released a bibliography intended as a sample of research that had been published about Holland's work since 1987. A collection of all references related to Holland's theory and applications has not been compiled until now. Since this theory is widely used in the field of career counseling, it is pertinent that research be done highlighting the current contributions and future implications for counseling practice and research.

Over a period of three years, we created three bibliographies using references pertaining to Holland's RIASEC theory, the Self-Directed Search (SDS), and related applications. The first bibliography was created to represent a sample of applicable uses of the SDS in diverse populations and was presented at a conference in Iceland in 2005. The second bibliography encompassed five different topic areas pertaining to the RIASEC theory and the SDS including *Application, Specific Populations, Diverse Populations, Alternate Forms, and Theory/Typology/Validity*. Each bibliography's purpose or use, method of development, and subsequent findings are described although the focus will be on the third and final bibliography.

Purpose Statement

The purpose of creating this comprehensive bibliography was to compile an inclusive list of reference citations in the professional literature produced over the past 50 years related to Holland's RIASEC theory, the Self-Directed Search (SDS), and other Holland-based interventions in order to more fully comprehend the stature of the work. The bibliography was

categorized in terms of year published and topic area in order to analyze what specific features of the topic have been most frequently studied.

Statement of the Problem

Holland's theory and theory-based applications are widely used in counseling psychology. It would be beneficial for practitioners, researchers, and educational institutions to have access to a resource that contains a comprehensive database of all publications relevant to this topic. However, no such database exists, and very few exist for other major theories in the field. We focused on several areas: (1) whether the rate of research on these topics has increased, decreased, or remained constant; (2) the frequency of contributions across several areas of theory and practice; and (3) how widely works on this theory have been disseminated. The corresponding research questions were:

1. *How has the number of references related to Holland's work changed from 1953 to 2007?*
2. *How does the number of references related to Holland's work vary across five categories, e.g. application, alternative forms of assessment, theory/typology/validity, diverse populations, and specific populations?*
3. *How has the number of references related to Holland's work in relation to the categories changed over time?*
4. *What is the relationship between the numbers of references in each of these categories?*
5. *What is the relationship between the number of references falling in diverse populations, specific populations, and both populations?*
6. *How many of the journal references were published in six of the most prominent counseling journals as compared to all other journals?*
7. *What types of references are most often cited relating to Holland's work?*

Creating such a comprehensive database could assist counseling psychologists in locating, using, and analyzing relevant information on Holland's theory and theory-based

applications. In addition, the researchers wanted to document the method for creating such a comprehensive bibliography so that it could be replicated by others hoping to create similar databases on theories and instruments relevant to vocational and counseling psychology.

Methods

Materials

A bibliography on the use of RIASEC with diverse populations was needed for an international vocational conference in Iceland, 2004. Several resources were used to find references on Holland's theory and the SDS. Among these were books, chapters, articles, presentations, technical reports, and supplemental products such as dissertations. Information was compiled in an Excel spreadsheet by year of publication, author, title, and journal. A total of 22 references were included pertaining to the use of RIASEC with diverse populations.

While creating this bibliography, researchers noticed the large number of references to Holland's RIASEC theory in multiple journals. Additional research was conducted to include more references to Holland's theory, their currency, and the type of research being done. Florida State University's Library Website provided a majority of the references used at this point in the development of the bibliography. Cambridge Scientific Abstracts (CSA) is a database provider used by FSU to provide staff, students, faculty, and walk-in patrons with free access to multiple databases for search and retrieval purposes (Cambridge Scientific Abstracts, 2007d). This company licenses the databases that FSU uses housing 34 different search engines. CSA provides many commonly used databases such as ASSI, ERIC and PsychInfo. In accordance with the site licensure agreement, these databases may be used for research and educational purposes by means of displaying references, digital and/or print copying, analysis, and scholarly sharing.

PsychInfo and ERIC provided the largest number of the references. The PsychInfo search engine is the online version of Psychological Abstracts, 1887 to present, and includes journal

articles, book chapters, books, technical reports, and dissertations in psychology and related disciplines (Cambridge Scientific Abstracts, 2007c).

The ERIC database, sponsored by the U.S. Department of Education, was examined using several different search questions as noted in the procedures section. ERIC is designed to provide extensive access to educational-related literature and is connected to two printed journals: *Resources in Education (RIE)* and *Current Index to Journals in Education (CIJE)* covering from 1966 to the present. As the bibliography grew, other online databases were utilized in addition to CSA. These include ISI Web of Science, JSTOR, and Eureka.

Descriptions of each of these resources were provided by the FSU library Webpage (Blackburn, 2005). The ISI Web of Science includes multiple indices. Those most closely related to the present research includes the Science Citation Index, Social Science Citation Index, and Arts and Humanities Citation Index. This database provides links to some full text documents. ISI was formerly named Web of Science and is now part of the Web of Knowledge. JSTOR is a database of the back issues of core journals in the humanities, social sciences and sciences. Publications become available on JSTOR within two to five years of publication.

ISI and JSTOR are both closely related to disciplines in the social sciences. We were interested in creating a comprehensive database including information from all disciplines. Eureka, another online database, provides access to databases of all disciplines. It is a part of the Research Libraries Group's (RLG) Citadel Citation database services, which reflect the collections of major research libraries; academic, public, corporate and national libraries; archives and museums; historical societies; and international book vendors. Resources range from books to films, sound recordings, photographs, manuscripts, serials and so forth.

In addition to online databases, multiple print resources were used to identify possible citations for this comprehensive bibliography. A majority of the references in the online databases came from journals. In order to incorporate a wider variety of resource types in this bibliography, we obtained information from previous research on Holland's RIASEC theory including book chapters, assessments, articles, presentations, workshops/instructions, and book reviews related to Holland's RIASEC theory from the 1970s to present.

This project required a system to manage the vast number of electronic and print references. The reference librarian and information-systems specialist at FSU consulting on this research recommended RefWorks, which is an organizational electronic tool that could be used in conjunction with the online references found in various online resources as well as with other hard-copy resources. Reference citations were electronically uploaded or manually input into this online system where they could be stored, sorted, and altered for later use. The following description of RefWorks was provided during an interview with our library consultant (Colvin, 2006):

RefWorks is a Web-based citation management system that enables construction of databases to store and organize bibliographic citations and creation of bibliographies based on standard styles. Citations may be exported directly from databases, imported using specially designed import filters, or added manually. Formats for bibliographies include all standard formats (i.e., APA, MLA, Chicago) and many specialized formats used by different disciplines and individual journals.

RefWorks is proprietary software that is provided free of charge to Florida State University faculty, students, and staff through the University Libraries. Because it is a Web-based product, no download of software is required and access is easily available through any computer with an Internet connection.

Procedures

The procedures for creating this large-scale comprehensive bibliography are provided by describing the sequence of steps in project completion.

Step 1 - Create a purpose statement. Creating a purpose statement on which to base the structure is the first and most important step because it will set the parameters for the bibliography. Our purpose was to determine if Holland's theory was still being used in research, if the use related applications had changed over time, and in what areas his theory is being studied. This purpose was based on the collaboration of several professionals with extensive experience using this particular theory.

Step 2 - Determine the parameters for including references based on the purpose statement. Publication year limitations were not set so as to include all references related to RIASEC theory. Topic categories were retained from an earlier bibliography created by Psychological Assessment Resources, Inc. (PAR, 1994). These headings included *Application*, *SDS Alternate Forms*, and *Theory/Typology/Validity*. PAR did not provide the inclusion criteria for these categories and only included references pertaining to RIASEC theory. We created inclusion criteria for each category. The *Application Bibliography* included all references that described Holland's theory or instruments in relation to the way they have been used in practice. The *Alternate Forms Bibliography* included references that described alternative copyrighted forms of Holland theory-related instruments published by PAR and others. The *Theory/Typology/Validity Bibliography* included all references pertaining to relevant theoretical constructs and empirical evidence for the reliability and validity of Holland's theory and related instruments.

While creating this comprehensive bibliography, it became clear that *Diverse Populations* did not adequately describe the type of research cited. For example, a study of Australian users of the SDS is broader than a study of the leisure activities of female firefighters in the US. Therefore, two categories, *Diverse Populations* and *Specific Populations* were created. The *Specific Populations Bibliography* was developed with respect to citations describing populations such as specified major field of study, occupation/field, area of interest, level of education, and age. The *Diverse Populations Bibliography* included references that described populations specified by gender, race, ethnicity, nationality, special abilities, disabilities, socio-economic status, and sexual identification.

Step 3 - Select methods for locating resources on the topic. A reference librarian with specific knowledge on information management consulted with us in identifying a large number of search engines. We selected nine that covered the widest variety of reference types. Then, multiple search criteria were tested to determine which ones resulted in the largest number of reference hits. Only the most productive search criteria were used for each of the nine search engines.

Once the search engines and criteria were determined, the lead researcher and two research assistants ran the engines and selected the references that related to Holland's theory and applications. The following descriptions ([Table 1](#) and [Table 2](#)) provide the name of the database owner and examples of databases and/or journals used. Search parameters used for this bibliography are provided in the tables. These parameters were developed with the assistance of a professional reference librarian to obtain the most possible hits related to the topic. Each description includes the number of references identified through the search parameters. Some databases also provide a list of other descriptors that would have resulted in the same references

identified by the descriptors used in the original search parameters. Finally, the number of various publication types is identified when available.

Table 1. Cambridge Scientific Abstract (CSA)

Databases	Social Sciences: PsychInfo, National Criminal Justice Reference Service Abstracts, ASSIA: Applied Social Sciences Index and Abstracts, and Risk Abstracts
Search Parameters	Keyword: occupation* or career* or personality* -AND- Holland
Number of Hits	2,357
Examples of Descriptors	occupational choice, occupational interests (measures), person environment fit, self congruence, self-efficacy, career development, occupational guidance, social cognition, coping behavior, decision making, personality traits, occupational aspirations/attitudes, job performance, job satisfaction, working conditions, concept formation, self-confidence, career change, persistence, theories, questionnaires, test validity, psychometrics, conformity, profiles, childhood development, values, counseling, coping behavior, professional identity, classification, sex roles, learning, social groups, ability, vocational counselors, occupational success, job search, models, cognitive style, thinking, achievement, MBTI, five-factor personality model, individual differences, job characteristics, agreeableness, employee attitudes, 16 PF, skills training, occupational preference, outcomes and employment skills
Publication Types	Journals (1510), Peer-Reviewed Journals (1244), Dissertations (331), Other (225), Reports (166), Conferences (124), Chapters/Essays (50), Books (39), Catalogs (4), Book Reviews (1)

Table 2. Institute of Scientific Information (ISI) Web of Science – Web of Knowledge

Databases	Social Sciences Citation Index: Career Development Quarterly, Journal of Career Assessment Research in Higher Education, Journal of Vocational Behavior, Journal of Employment Counseling, Measurement and Evaluation in Counseling and Development, Journal of Personality, International Journal of Selection and Assessment, Psychological Reports, Journal of Occupational and Organizational Psychology, Personality and Individual Differences, Australian Journal of Psychology, Journal of Applied Psychology, Personnel Psychology, International Journal of Aging and Human Development, European Journal of Psychological Assessment, International Journal of Human Resource Management, American Psychologist, and Journal of College Student Development.
Search Parameters	Social Sciences Citation Index (SSCI) - - 1956-present 1. TS = personality* -OR- TS = career* -OR- TS = occupation* 2. TS = Holland 3. #1 AND #2
Number of Hits	357
Examples of Descriptors	Not available
Publication Types	Article (317), Book Review (18), Review (9), Editorial Material (7), Meeting Abstract (3), and Note (3)

Step 4 – Manage data. Managing a large number of references can be challenging. Given the scale of this particular bibliography, it was important to use a data-management system that could store and organize large amounts of information. Researchers also needed a system that was compatible with the types of resources we would be using (FSU’s Library Website as well as printed material) and could be accessed easily by the individuals participating in this project. Our information-management consultant recommended using the Refworks system as it met each of these criteria.

As expected, the CSA search engine with 34 databases provided the largest number of references. The lead researcher and the first research assistant with the most experience using Holland’s theory each separately analyzed the first 200 references in the CSA search results in order to obtain a level of inter-rater reliability. Researchers compared their results, and strong agreement suggested that they were very likely to select the same references to be included in the bibliography. Therefore, they shared in the task of identifying references from the nine search engines to be included in the bibliography.

The online references were easy to manage as they could be saved on the FSU Library Website, emailed, and uploaded into Refworks. Many of the search engines used the same databases resulting in a large number of duplicate references. Some references were repeated several times in various forms, e.g., a reference was cited as a poster presentation, dissertation, and article. The second research assistant used the “Find Duplicates” function in Refworks to locate and remove all duplicate references, and she simultaneously screened the database for erroneous references.

We used a cross-check system to ensure that the search criteria had picked up the most references possible ([Figure 1](#)). The second research assistant was responsible for conducting

these cross-checks. We randomly identified and brought relevant references to her, at which point she would check the Refworks database to see if those references had already been identified. The second research assistant also ran random searches of well-known career journals to check for missed references.

Figure 1. Directions for Cross-Checking References

- Go to: www.Refworks.com
- Click on: User Login
- User name: #####
- Password: #####
- Go to: View – Folder – All
- Scroll to far right and Sort By: Authors, Primary
- Check references in Refworks against the print resource
- Is the reference in Refworks?
 - Yes – continue checking additional print resources

Once all search results had been uploaded into Refworks and duplicates deleted, the next step was to assign each reference to the most appropriate bibliography categories. The criteria for including references in are shown in [Table 3](#). Some references were included in several categories. For example, a poster presentation on the use of the Spanish version of the SDS with Hispanic nurses would be copied into *Alternate Forms*, *Diverse Populations*, and *Specific Populations* because it identified an alternative form of the SDS, an ethnic sample, and an occupation-based sample. In this capacity, Refworks was very useful as references could be copied into several folders while remaining in the main folder as well.

Table 3. Bibliography Category Descriptions

Bibliography Category	Description of Category Content
<i>Application Bibliography</i>	The following <i>Application Bibliography</i> was developed with respect to Holland’s theory and applications in relation to references describing the way they have been used in practice, e.g. for specific groups, use with special populations, to develop specific programs, etc.
<i>Alternate Forms Bibliography</i>	The following <i>Alternate Forms Bibliography</i> was developed to include the application of Holland’s theory and applications in relation to references describing alternative copy righted forms published by PAR.
<i>Theory/Typology/Validity Bibliography</i>	The following <i>Theory/Typology/Validity Bibliography</i> was developed with respect to all reference citations relevant to the theoretical constructs and empirical evidence for the reliability and validity of Holland’s theory and applications
<i>Diverse Populations Bibliography</i>	The following <i>Diverse Populations Bibliography</i> was developed with respect to Holland’s theory and applications in relation to references describing populations specified by gender, race, nationality, special abilities, disabilities, socio-economic status, and sexual identification.
<i>Specific Populations Bibliography</i>	The following <i>Specific Populations Bibliography</i> was developed with respect to Holland’s theory and applications in relation to citations describing populations specified by major, occupation/field, area of interest, level of education, age, etc.

References were included in the bibliography not identified in the FSU library database.

The second research assistant was responsible for gleaning print references from several sources.

These sources included popular journals in the field selected by the researchers, sources in the

FSU Career Center Library, and additional references we identified by team members during the

project. The second researcher would manually insert these references into the Refworks

database ([Figure 2](#)).

Figure 2. Directions for Inputting Bibliography References

1. Go to *Refworks.com*
2. Click on: *User Login*
 - *Log-in Name: ex: My Bibliography*
 - *Password: ex: Bibliography*
3. Click on: *References*
4. Click on: *Add New Reference*
5. *View required fields for: APA- American Psychological Association*
6. *In Folder(s): Specify Folder (if any)*
ex: Diverse Populations
7. *Ref Type: choose what applies (usually journal)*
8. Complete any option with an “*” as appropriate (do not have to fill ones that do not apply)
 - *Tips:*
 - *Periodical, Full (Journal Title)*
 - *Start page (first page) – Other pages (end page)*
9. Go back to top and *Save Reference*
10. To input next reference, go back to *Add Reference*

Step 5 - Analyze data. We met continuously for almost three years to discuss the progress and direction of this project, and we revisited the original problem statements and research questions to determine how to analyze the data appropriately. We held several teleconferences with John Holland to discuss the project, and he described questions that he had concerning the current state of research on his theory and applications as well as questions he had received from others in the field.

From these observations, we were able to identify appropriate and useful ways to analyze the data. For example, one perception of John Holland’s instruments, particularly the SDS, is that it is gender and racially biased. We created a pie-chart based on the percentage of references in the *Diverse* and *Specific Populations* categories ([Figure 11](#)) to explain this issue. By analyzing data in this way we could see the percentage of references given specifically to research on *Diverse* and *Specific Populations* as compared to other categories and we could see increased in research in these two areas.

Another observation we examined pertains to the notion that Holland's instruments such as the SDS and MVS are obsolete. By creating a figure showing the number of references over time, we were able to show the trends in research over the years ([Figure 3](#)). We addressed this issue by sorting references by type of publication and field of publication. We compared the rate and timeline of publications in a variety of types, e.g., journal, book, dissertation ([Figure 10](#)). We examined journals by comparing number of publications in six of the most prestigious career journals to journals in varying fields ([Table 4](#), [Figures 3, 4, 5, 6, 7, 8, & 9](#)).

Researchers

Elizabeth Ruff (lead researcher). Ruff completed an MS/Ed.S. in Counseling and Human Systems with a specialization in career counseling in 2006, and is currently seeking her Ph.D. in Counseling Psychology and School Psychology. She has been a career advisor for over three years where she implements Holland theory and related instruments. She was involved in conceptualizing and coordinating at each step of this project. As the lead researcher, she was responsible for creating the inclusion criteria for each category, selecting references from a majority of the databases, categorizing references in collaboration with the first research assistant and creating descriptions of the process.

Dr. Reardon (career field professional consultant). Reardon completed his Ph.D. in Counselor Education in 1968, holding full-time counseling and teaching positions for over 40 years. He has co-authored several books in areas related to Holland's work including *Career Counseling and Services: A Cognitive Information Processing Approach* (Reardon, Sampson, Peterson, & Lenz, 2004); *Career Development and Planning: A Comprehensive Approach* (Reardon, Lenz, Sampson, & Peterson, 2000); and *The Self Directed Search and Related Holland Career Materials: A Practitioner's Guide* (Lenz, 1998). He is a co-author of the Career

Thoughts Inventory (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996), and the author of the computer- and Internet-based Interpretive and Professional Reports for the Self-Directed Search interest inventory (Reardon, 1987). Reardon was intricately involved in every step of the creation of the bibliography. He served as a consultant during the conceptualization and implementation of each bibliography, as well as an active participant in searching for references and weekly meetings.

Sara Cummings Bertoch (first research assistant). Bertoch completed an MS/Ed.S. in Counseling and Human Systems with a specialization in career counseling in 2007, and is presently pursuing a PhD in School Psychology and Counseling Psychology at FSU. She has been a career advisor for over two years where she implements Holland theory and related instruments. As the first researcher, she participated in weekly meetings on team progress, and collaborated with the lead researcher in selecting and categorizing references.

Melissa Lewis (second research assistant). Lewis is completing a B.S. in psychology at FSU. She was responsible for filtering all duplicate references in the RefWorks system, garnering any print references which she located or received from other team members, manipulating data using Refworks and Excel to address the research questions, and attending weekly individual meetings with the lead researcher and with the entire team.

During this phase it was critical to continuously double check the data. Complexity increases with the number of analyses. For this project, researchers were analyzing six different journals (i.e., *Journal of Applied Psychology*), five categories of references, (i.e., *Diverse Populations*) and four categories of reference types (i.e., books). It was necessary to continuously check totals against each other in order to get accurate analyses.

Gloria Colvin (information-management consultant). Colvin received her B.A., and an M.S. in Teaching and in Library Science. She is currently the Faculty and Graduate Research Services Librarian at FSU. She met frequently with various members of the research team to assist in trouble-shooting throughout the project. She made suggestions for search engines and determined the best search criteria to use. She coached the lead researcher on how to conduct each of these searches and provided Refworks tutorials for the lead researcher and first research assistant.

Research Questions

1. *How has the number of references related to Holland's work changed from 1953 to 2007?*
2. *How does the number of references related to Holland's work vary across five categories, e.g. application, alternative forms of assessment, theory/typology/validity, diverse populations, and specific populations compare to each other?*
3. *How has the number of references related to Holland's work in relation to the categories changed over time?*
4. *What is the relationship between the numbers of references in each of these categories?*
5. *What is the relationship between the number of references falling in diverse populations, specific populations, and both populations?*
6. *How many of the journal references were published in six of the most prominent counseling journals as compared to all other journals?*
7. *What types of references are most often cited relating to Holland's work?*

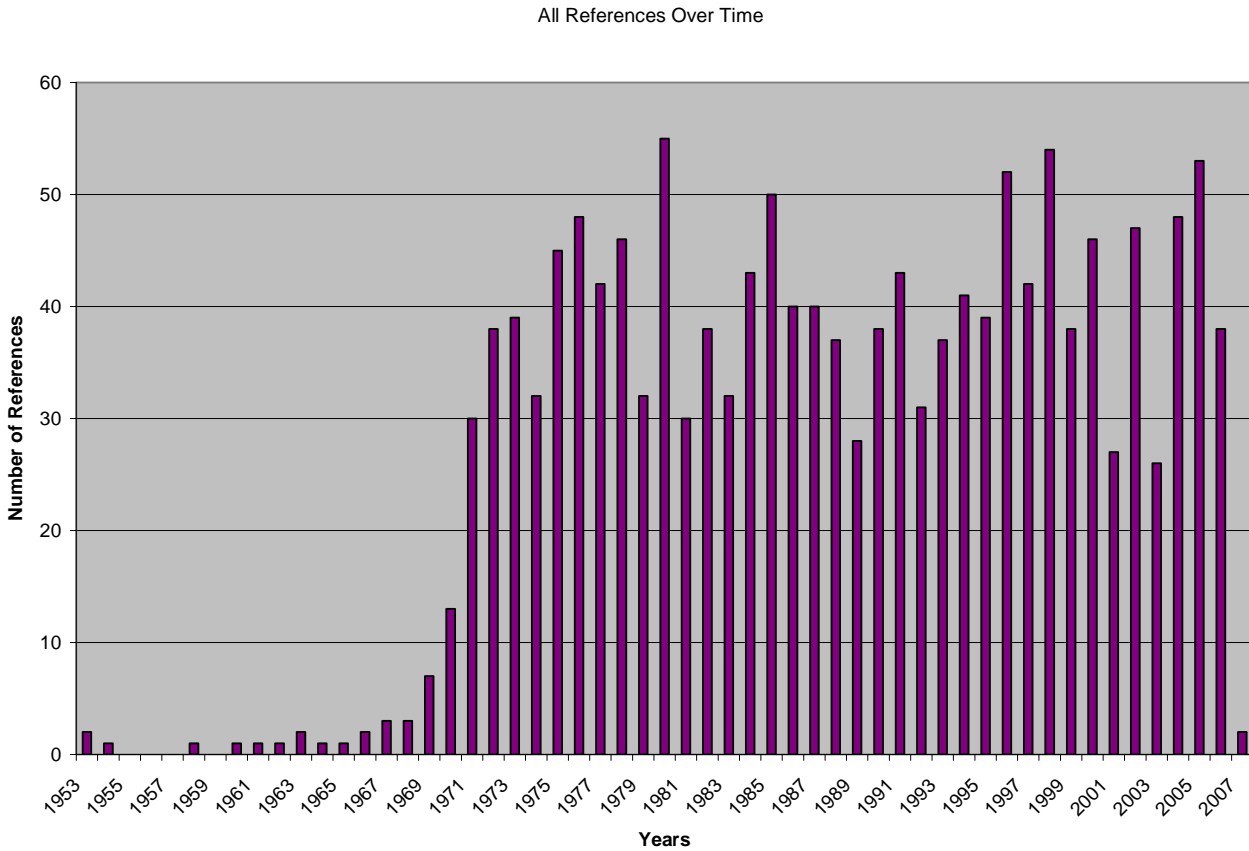
Results

1. How has the number of references related to Holland's work changed from 1953 to 2007?

We found 1,609 references relating to Holland's theory and applications in this study. By analyzing these references using Refworks, researchers were able to address the seven research questions. The first question pertained to criticism that Holland's theory is out dated. We examined how has the number of references related to Holland's work has changed from 1953 to 2007, paying particular attention to rate and trends in publication.

[Figure 3](#) indicates that references relating to Holland's theory and applications have not decreased over the years. Results point to a sharp increase in references after 1971, about the time the SDS was first published. Peaks in related work can be seen during 1980, 1985, 1986, 1988 and 2005 with references reaching 50 and higher. Between 1972-2006, there were drops in references, reaching below 30 during 1990, 2002, and 2004. During the first two months of 2007, results indicate fewer than 10 references. It is unlikely that this is an actual representation of published works for 2007, because there is a delay in database systems uploading references to the website and not all references have been posted for January and February.

Figure 3. All References Over Time

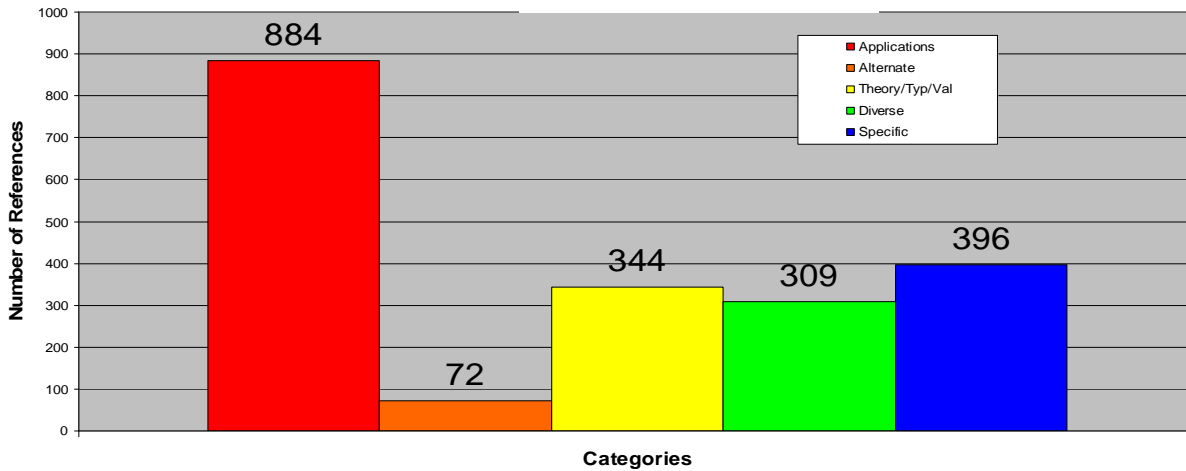


2. How does the number of publications related to Holland’s work vary in relation to Application, Alternative Forms of Assessment, Theory/Typology/Validity, Diverse Populations, and Specific Populations?

The second research question related to five subcategories we created. These include Application, Alternate Forms of Assessment, Theory/Typology/Validity, Diverse Populations, and Specific Populations (Descriptions in [Table 3](#)). All five categories were compared in terms of number of publications ([Figure 4](#)). It is important to note that data represents the number of times a publication was marked as appropriate for the category, and it was common to find references that fit into multiple categories. Therefore, the total number of references in this data set, 2,005,

is more than the total number of references, 1,609. The *Applications* category exceeded the other four, accounting for over 44% of the total. The smallest category, *Alternate Forms* accounted for less than 4%. The other three categories, *Theory/Typology/Validity*, *Diverse Populations*, and *Specific Populations* accounted for about 17%, 16% and 20%, respectively.

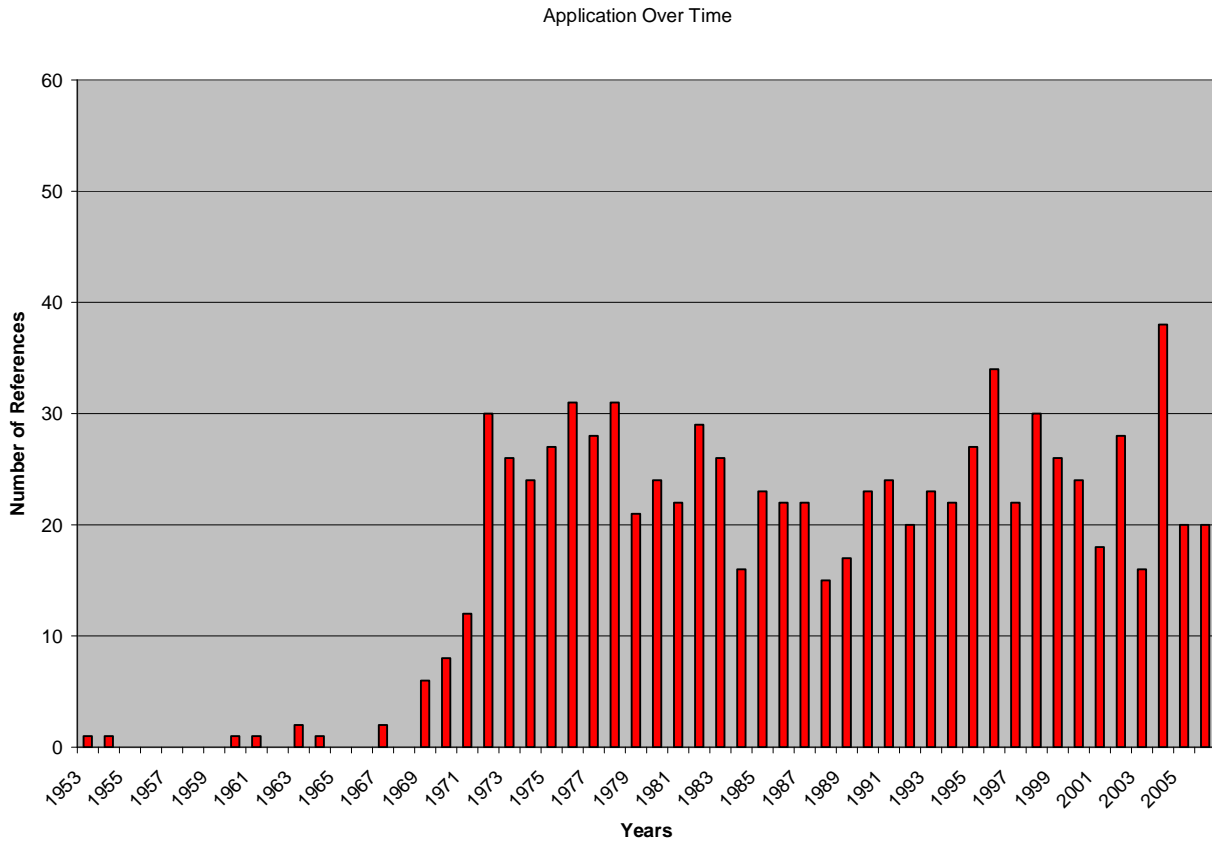
Figure 4. References Categorized Into Five Types



3. How has the number of references related to Holland’s work in relation to the categories changed over time?

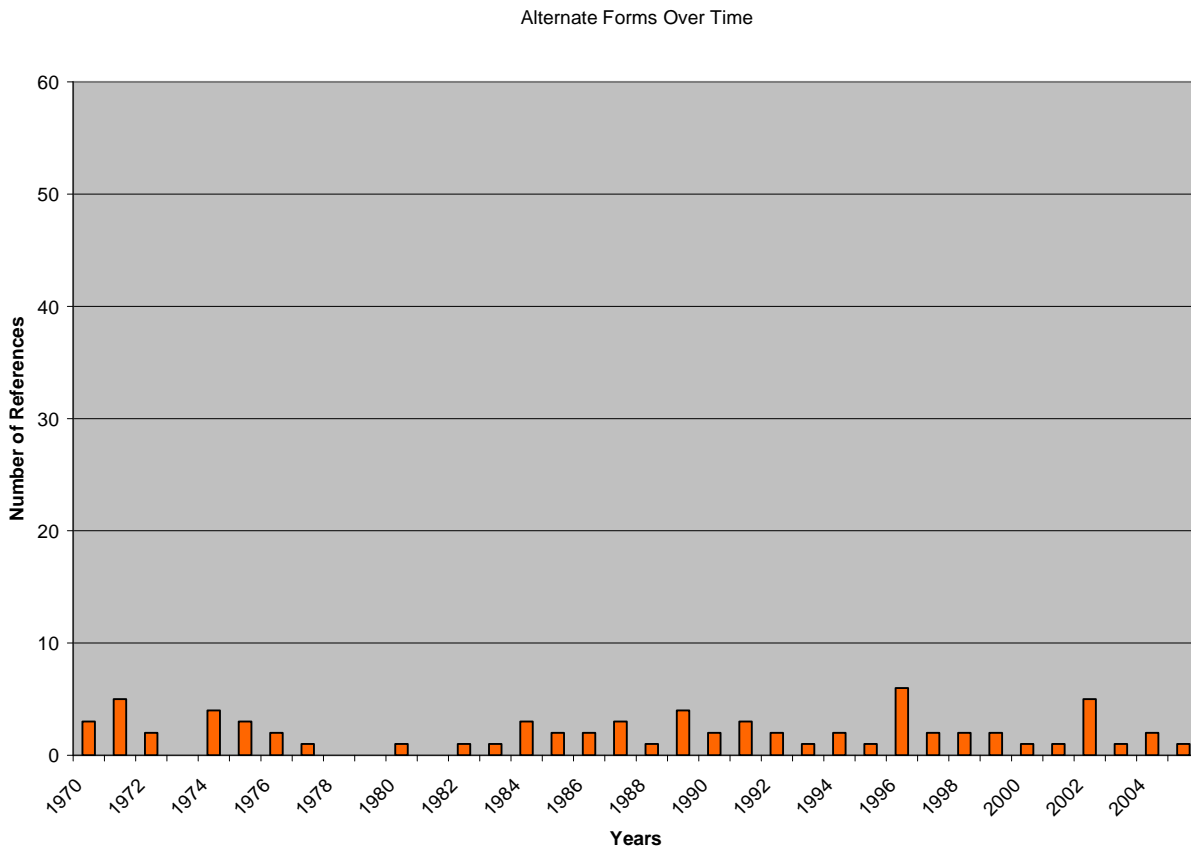
Applications. References relating to the way in which Holland’s theory and applications are being applied in practice were analyzed (Figure 5). Results indicate the same pattern in the amount of work being done in this area as in the total number of references (Figure 1). There appears to be a steady increase in references beginning from 1969 and topping out a little over 30 references in the late 1970’s. References began to decrease, reaching a low point at about 15 in 1989, and then rising again to a peak of near 35 in 1996. Since 1995 there appears to be a decrease in application-related references with a burst of nearly 40 in 2004, which is the largest number of references ever on this topic.

Figure 5. Applications Over Time



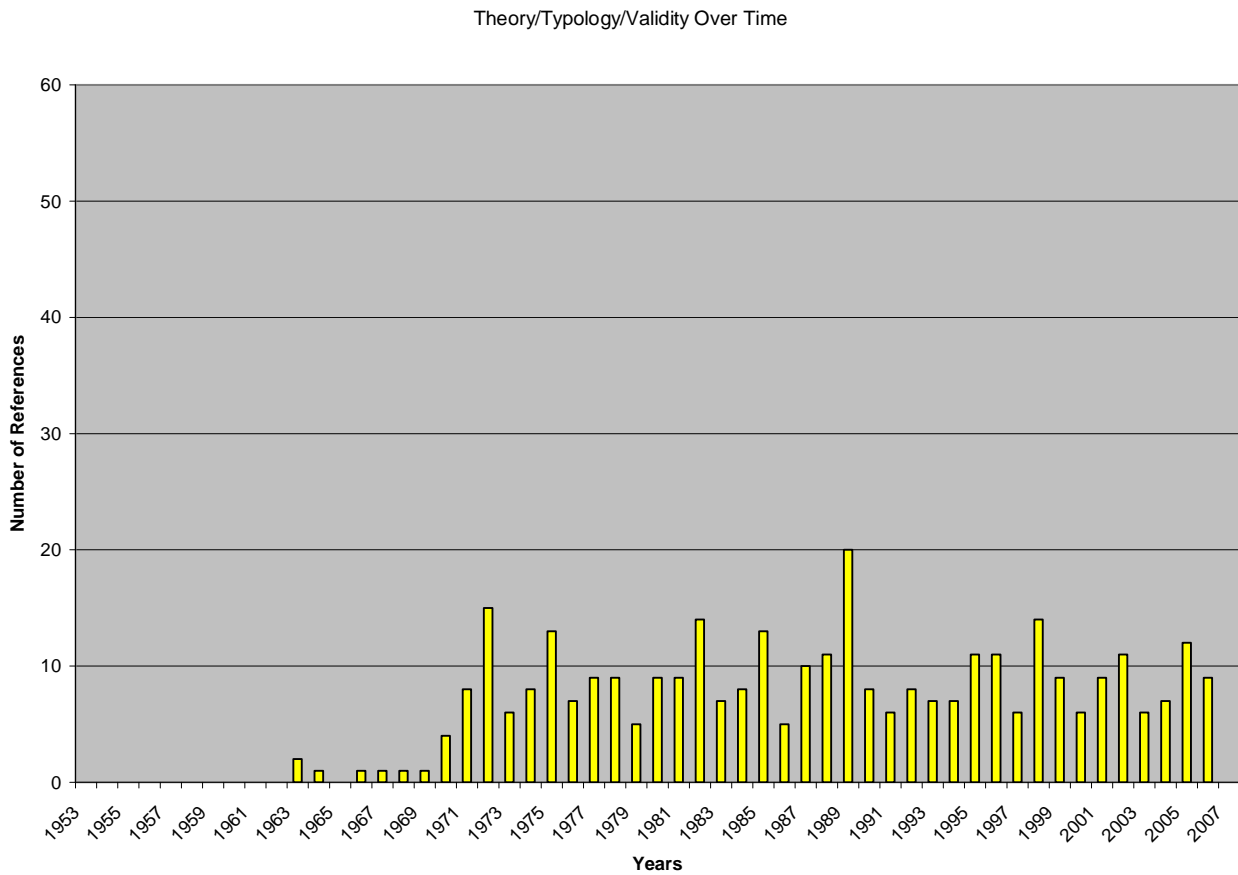
Alternate Forms of Assessment. The original SDS Form R is most commonly associated with Holland assessment instruments. However, many assessments have been created based on Holland’s RIASEC theory. References relating to other Holland theory-based assessments such as My Vocational Situation, SDS: Form E for limited reading skills, and translated versions were analyzed and are shown in [Figure 6](#). Fewer references were found relating to this topic. Data relating to alternate forms seems to be most prevalent during the late 1980s to early 1990s. Two peaks can be seen in 1997 and 2003 although these spikes should be analyzed with caution given the low number of overall references.

Figure 6. Alternate Forms Over Time



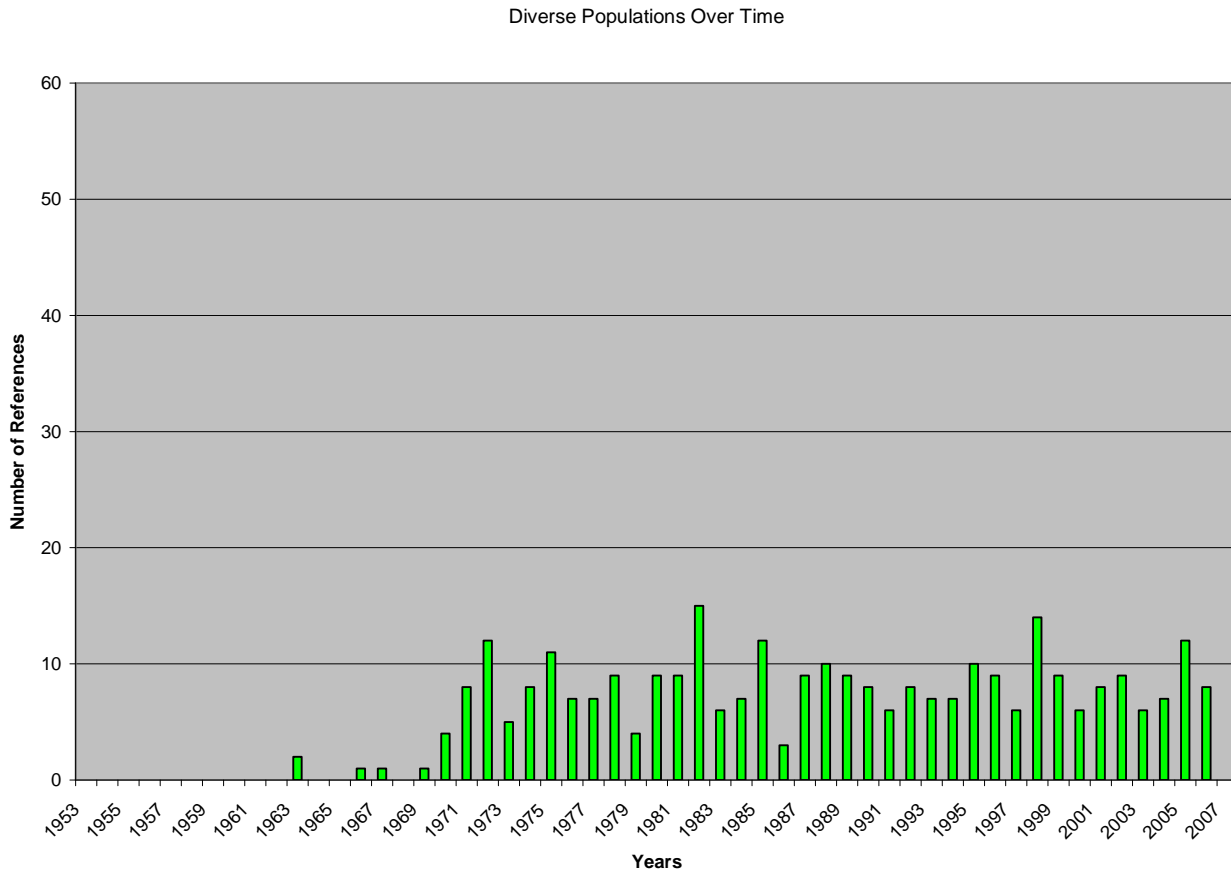
Theory/Typology/Validity. References relating to the construction, validity, reliability, and empirical analysis of Holland’s theory and theory-based assessments were analyzed and appear in [Figure 7](#). It does not appear that references related to this area have decreased throughout the years. There appears to be a consistent pattern of peaks and valleys from 1971 to 2007, with a large peak of 20 references in 1990. It does not appear that interest of the theory, typology, or validity has waned since the 1970s in terms of research and publications.

Figure 7. Theory/Typology/Validity Over Time



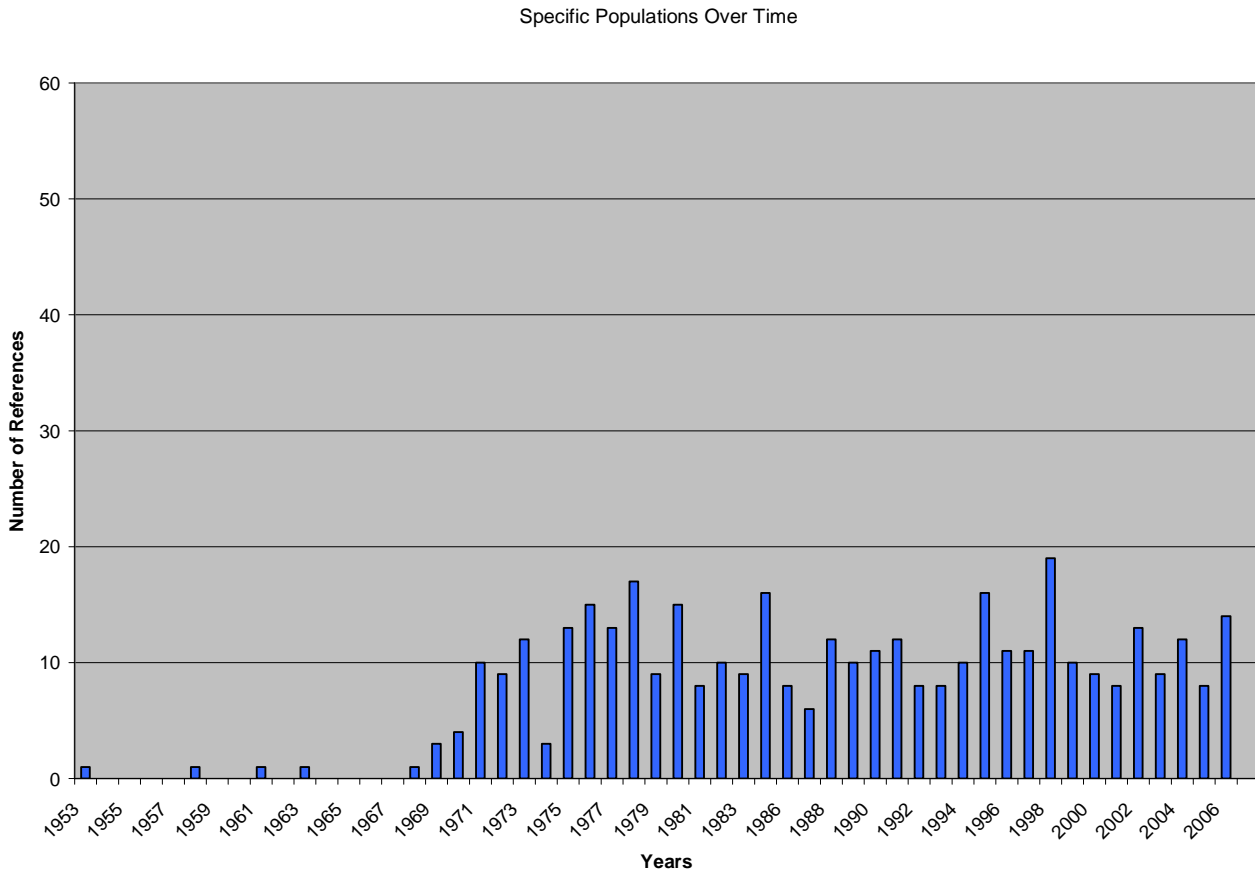
Diverse Populations. References related to the way in which Holland’s theory and theory-based assessments relating to diverse populations were analyzed and appear in [Figure 8](#). It appears as though interest in this topic has remained consistent from the 1970’s to 2007 averaging nearly 10 references per year. There were peaks in 1983 and 1999, with around 15 publications, but during 1980 and 1987, references dropped below five. Overall patterns point to this topic remaining equally strong from the introduction of Holland’s theory and related applications to the present.

Figure 8. Diverse Populations Over Time



Specific Populations. Data was collected on resources relating Holland’s theory and theory-based assessments to specific populations, and the results are shown in [Figure 9](#). Results indicate that references increased steadily from 1968 to 1979, with the exception of a drop in 1975. Since around 1971, references have remained between five to 19 references per year. Results point to continued interest in how RIASEC theory is being used with specific populations such as level of education, occupation and age.

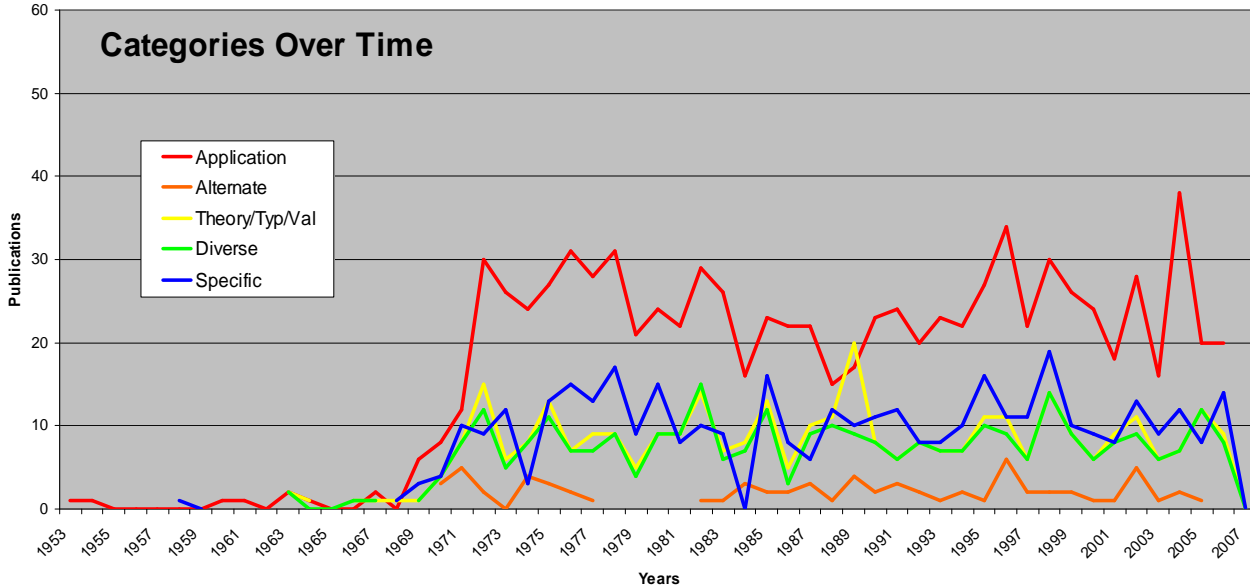
Figure 9. Specific Populations Over Time



4. What are the relationships among the number of references in each of these categories?

Data were analyzed comparing each of the reference categories against one another over time, and the results are shown in [Figure 10](#). Trends in the results for *Application* and *Specific Population* are similar in peaks during the mid 1970s to early 1980s and 1995 to 2000. Each of the categories shows a drop in research in 1974, 1980, 1985 and 1998. Each category appeared to increase dramatically in publications after 1969, most starting in 1972. *Theory/Typology/Validity* and *Diverse Populations* categories appear to peak and wane during the same years, rising to a peak in 1990 in *Theory/Typology/Validity*. The *Alternate Forms* category does not appear to mimic any of the other categories, although it shares some similar peaks with *Theory/Typology/Validity* during 1971, 1976, 1996, and 2003.

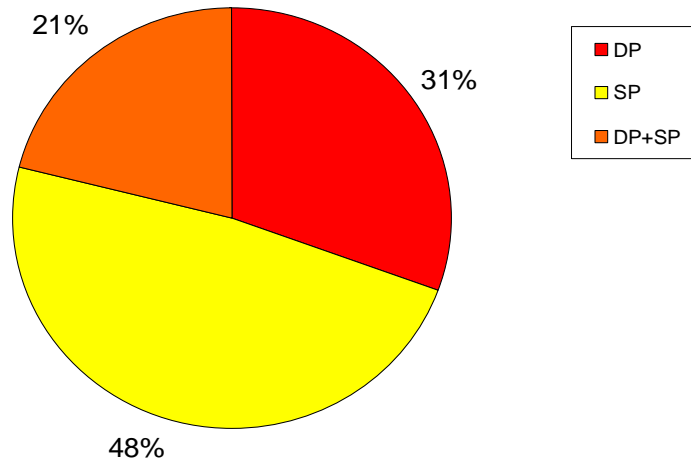
Figure 10. References by Categories Over Time



5. What is the relationship between the number of references falling in Diverse Populations, Specific Populations, and both categories combined?

As previously mentioned, data sets for each category indicate the number of times a reference was tagged for being relevant to that topic. Many references fell within multiple categories. For example, a study on RIASEC codes for Asian college seniors in a nursing program would be marked as both *Diverse* and *Specific Populations*. We analyzed data sets for these two categories in order to determine the amount of overlap (Figure 11). There was a 21% overlap between these categories. This means that of all the data marked in either *Diverse* or *Specific* categories, 21% were marked in both. As seen in previous data comparing all of the categories, more references were related to *Specific Populations* than *Diverse Populations*.

Figure 11. References in Diverse, Specific and Combined Categories



6. How many of the journal references were published in six of the most prestigious journals as compared to all other journals?

Our research revealed reference citations to Holland’s theory and applications in a total of 197 journals from around the world and in varied fields since 1953 (see Appendix A). Inspection of these journal names reveals a diverse array of disciplines and geographic settings impacted by his ideas and materials, far exceeding our expectations. Holland’s work goes beyond vocational psychology and career guidance as practiced in the United States.

Related to this, the SDS: Form R has been translated into 16 languages (Arabic, Chinese, Croatian, Estonian, Galician, Greek, Hungarian, Icelandic, Indonesian, Korean, Lithuanian, Norwegian, Portuguese, Romanian, Turkish, and Vietnamese), which are sold by PAR (2007). In addition, the SDS has been published in 11 languages and sold by foreign publishers (Dutch, Korean, Czech, Brazilian Portuguese, Australian, Swedish, Spanish, Italian, Danish, Hebrew, and Slovene) (P. Drexler, PAR, Inc., personal communication, September 28, 2007). Altogether,

these adaptations of the SDS for diverse ethnic groups further illustrate the range and impact of Holland's work.

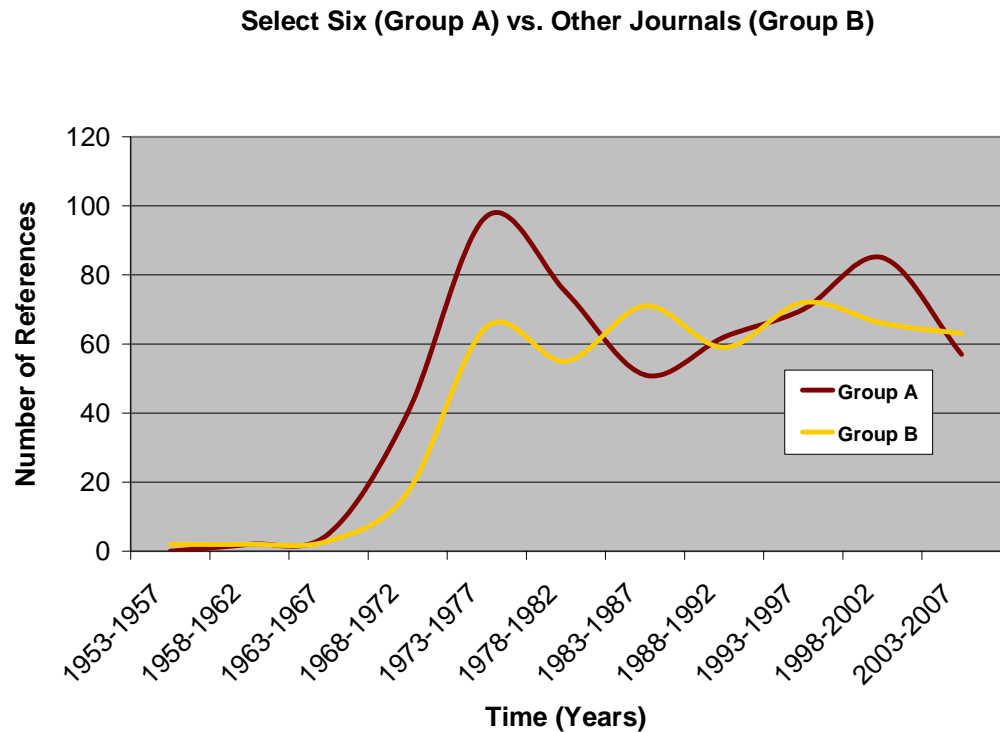
We selected six journals generally considered significant in the field of career development and counseling, including the *Career Development Quarterly*, *Journal of Career Assessment*, *Journal of Counseling and Development*, *Journal of Counseling Psychology*, *Journal of Vocational Behavior*, and *Measurement and Evaluation in Counseling and Development*. We compared the total number of references identified in these select six (Group A) journals to the total number of references in all other journals (Group B) and the results are shown in [Table 4](#) and [Figure 12](#).

The number of references in other journals (Group B) appears to grow steadily in number from the late 1960s to 2006. A drop-off in 2007 for both groups is seen similar to that in the category analysis. Two peaks in references during the early to mid 1970s and the late 1990s and early 21st century were evident for the selected six journals (Group A). During the mid 1980s to the 1990s, references in Group A dropped close to 50 publications per year, but quickly surpassed the other journals during the late 1990s by up to 19 publications. Publications in Group B cycle from 55 to 72 publications every 5 years from 1978 to 1998. There was an average difference of 11 publications.

Table 4. References Citations in Select Six vs. Other Journals

Figure 12. Select Six vs. Other Journals (Line)

Year	A	B
1953	0	2
1958	2	2
1963	5	3
1968	40	17
1973	97	65
1978	75	55
1983	51	71
1988	62	59
1993	70	72
1998	85	66
2003	57	63
Total	544	475
Grand Total for	1,019	



each of the Group A journals were examined in relation to the total number of references in this category, and the results are shown in [Table 5](#). The *Journal of Vocational Behavior* accounted for a majority of the references, around 50%. The rest of the journals in descending order include: *Journal of Counseling Psychology* (19%), *Journal of Career Assessment* (15%), *Career Development Quarterly* (1%), *Measurement and Evaluation in Counseling and Development* (.03%), and *Journal of Applied Psychology* (.03%). These percentages represent only the portion of the 544 select six journal references, and not the 1,019 total journal references.

We further analyzed data by assessing the number of publications in each of the select six journals over time (Figure 14, 15, 16, 17, 18, & 19). The *Journal of Applied Psychology* did not account for a large portion of Group A references (.03%). There did appear to be a slight increase in references related to Holland's theory and theory-based applications during the 1970s to the 1980s (Figure 14). The *Career Development Quarterly* accounted for 1% of Group A references, with peaks in the early to mid 1980s, late 1990s, and early 21st century (Figure 15). Publications appear to have dropped off significantly after 1995 and remain low to early 2007.

The *Journal of Career Assessment* did not begin publishing until 1993 (Figure 16). However, this journal accounted for 15% of Group A publications. A particularly large increase in publications related to Holland's work can be seen from the mid 1990s to early 2000s in this journal. The *Journal of Counseling Psychology* accounted for 19% of all Group A journal articles. Publications appear to peak in the mid 1970s, taper downward to the early 1990s, with a smaller increase again in the mid 1990s (Figure 17). The largest number of references appeared in the *Journal of Vocational Behavior* (50%).

Although no publications were identified prior to the late 1960s, they increased up to 67 publications in the mid 1970s (Figure 18). Publications seem to cycle every five years with peaks between 39 and 48 and lows between 13 and 27. The average difference was 21 publications beginning in 1973 to 2007. Tied for the last of select six journals in Group A is *Measurement and Evaluation in Counseling and Development*, accounting for the .03% of references. No references were identified before the early 1970s (Figure 19), and publications consistently remained between two to four from 1983 to 2007.

Figure 13. Select Six vs. Other Journals (Bar)

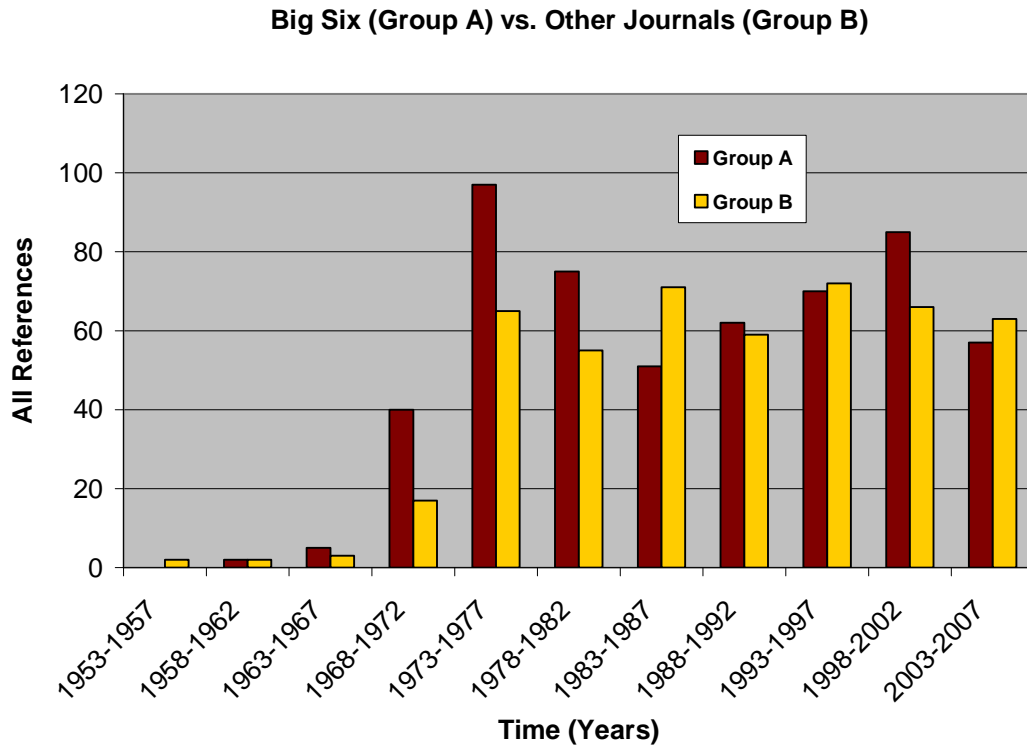


Table 5. Number and Percentage of References in Select Six vs. All Other Journals

Select Six - Group A	Number	Percentage
<i>Journal of Applied Psychology</i>	19	.03
<i>Career Development Quarterly</i>	55	1
<i>Journal of Career Assessment</i>	80	15
<i>Journal of Counseling Psychology</i>	101	19
<i>Journal of Vocational Behavior</i>	271	50
<i>MECD</i>	18	.03
Total Number of References in Select Six	544	53
Total Number of All Journal References	1,019	100

Figure 14. References in Journal of Applied Psychology

Year	# Ref
1953	0
1958	2
1963	0
1968	3
1973	4
1978	3
1983	2
1988	1
1993	2
1998	0
2003	2

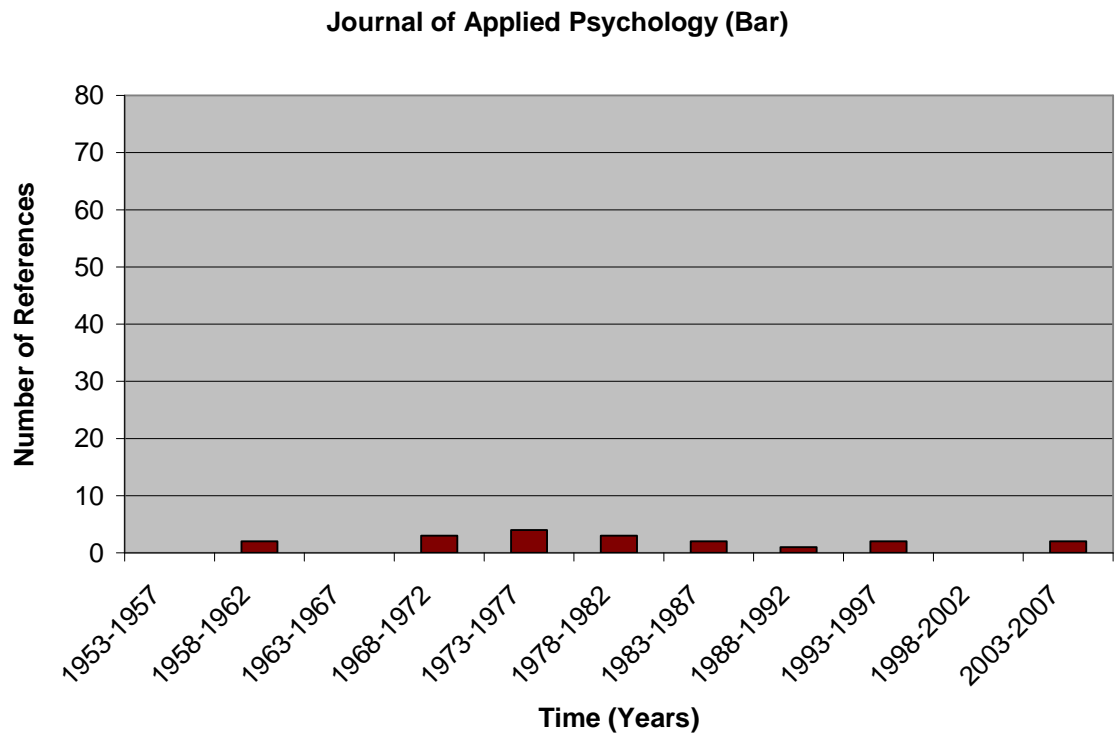
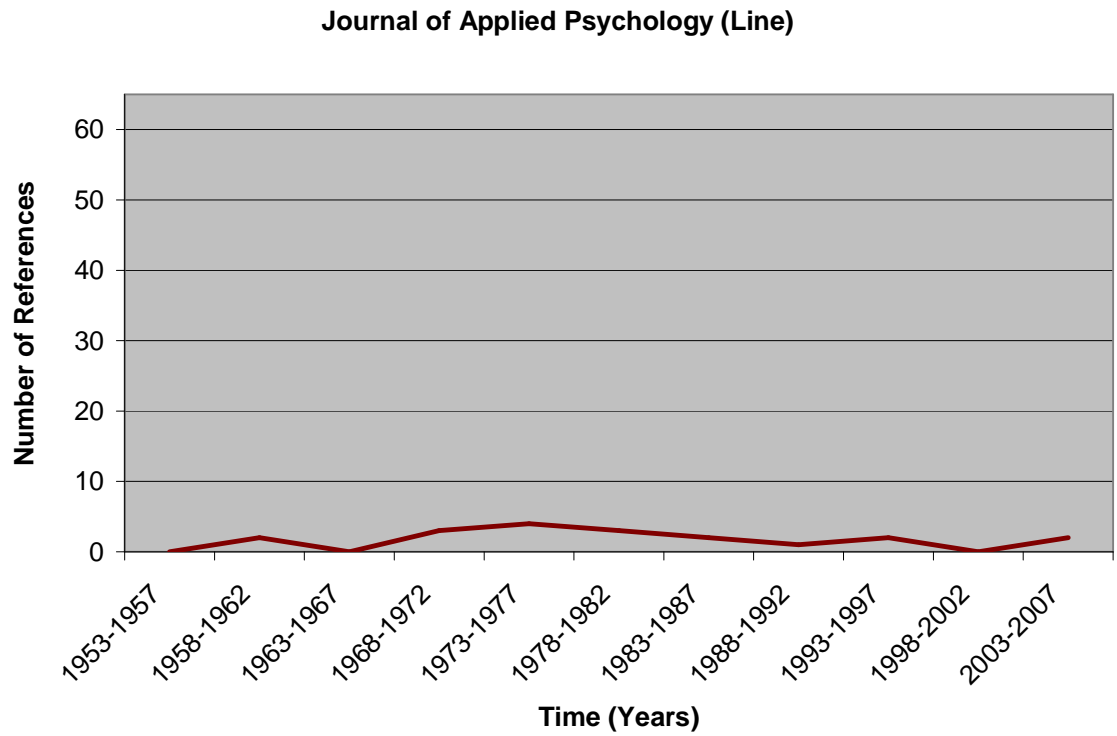


Figure 15. References in Career Development Quarterly

Year	# Ref
1953	0
1958	0
1963	1
1968	0
1973	4
1978	11
1983	10
1988	5
1993	8
1998	10
2003	6

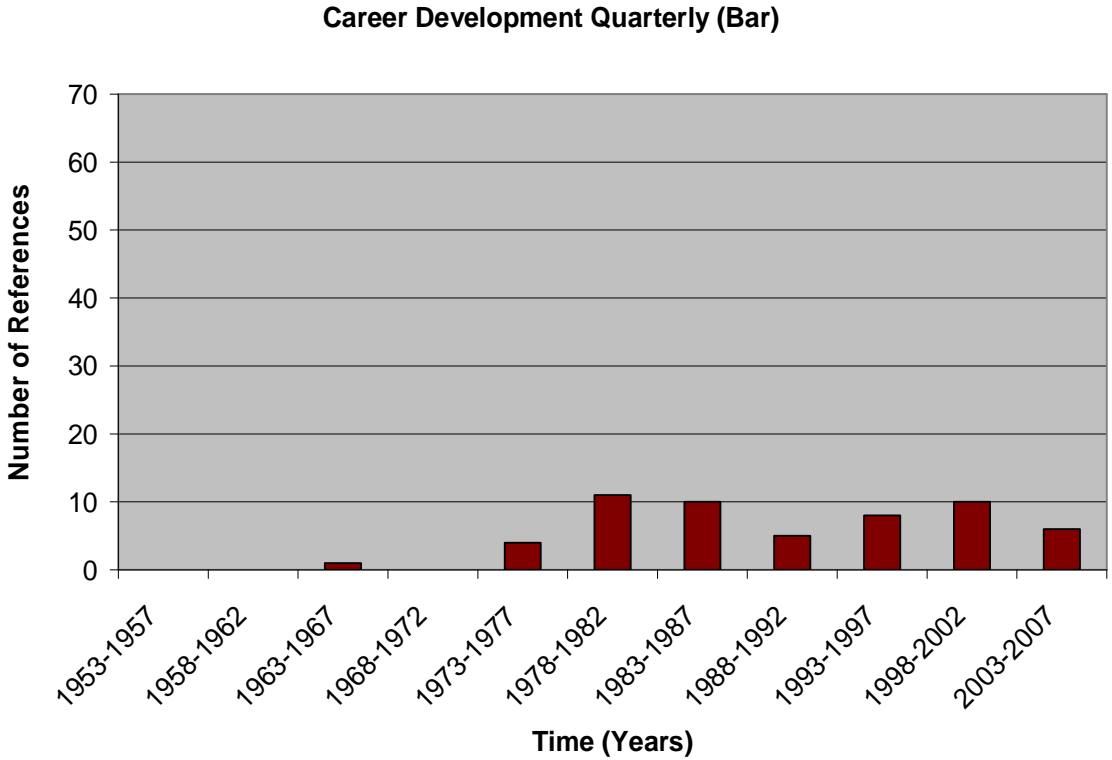


Figure 16. References in Journal of Career Assessment

Year	# Ref
1953	0
1958	0
1963	0
1968	0
1973	0
1978	0
1983	0
1988	0
1993	26
1998	26
2003	28

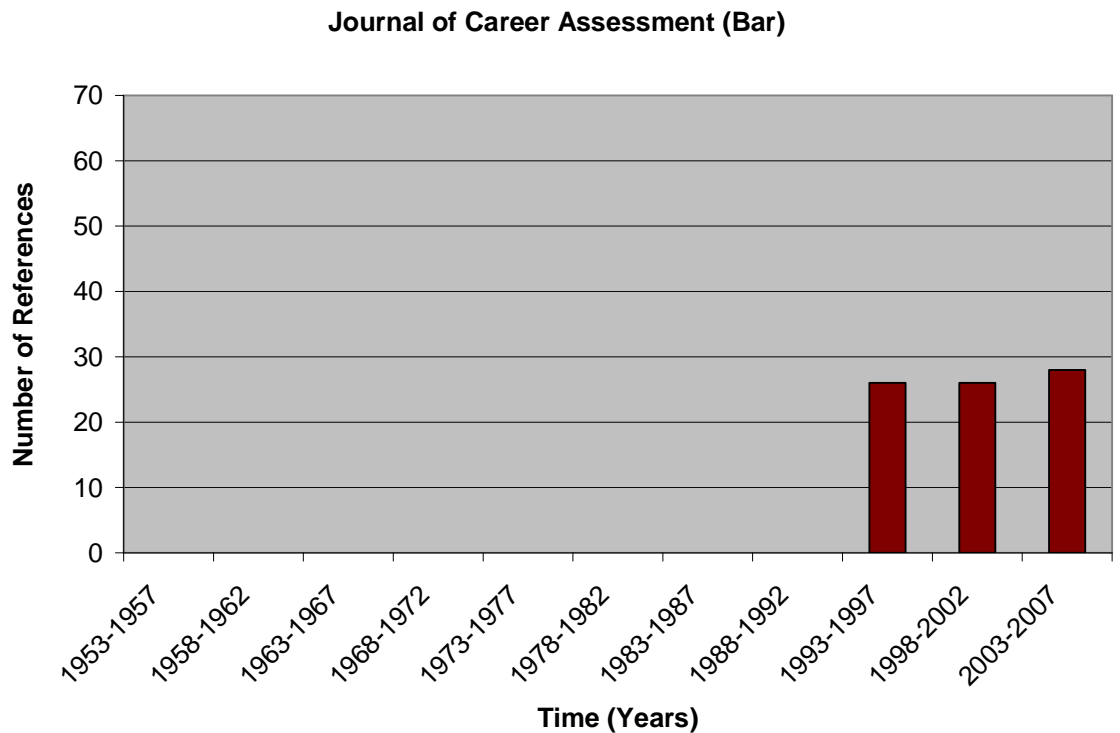
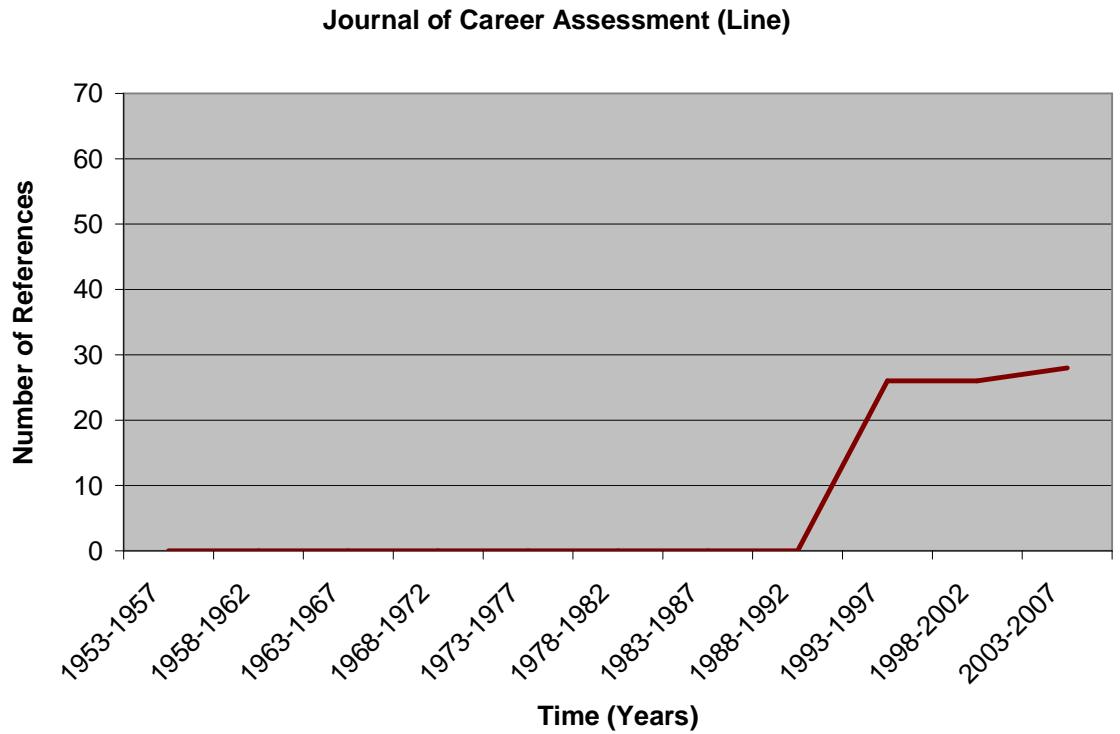


Figure 17. References in Journal of Counseling Psychology

Year	# Ref
1960	0
1965	0
1970	4
1975	21
1980	20
1985	13
1990	8
1995	9
2000	12
2005	8
2007	6

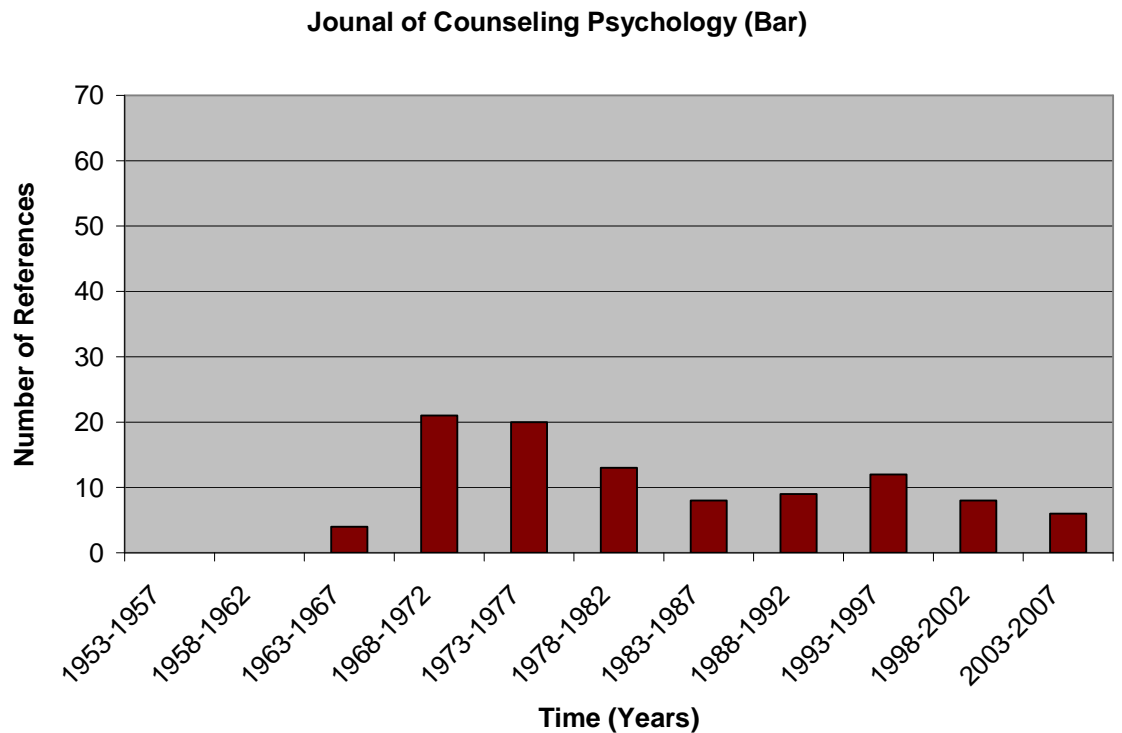
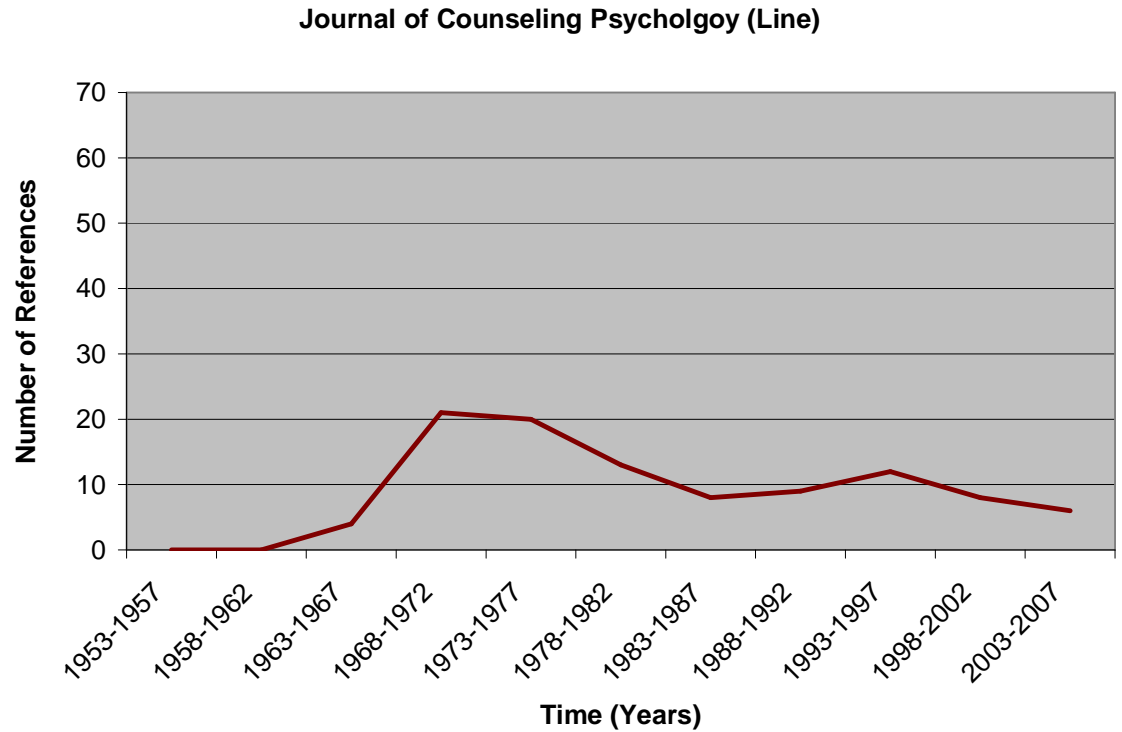


Figure 18. References in Journal of Vocational Behavior

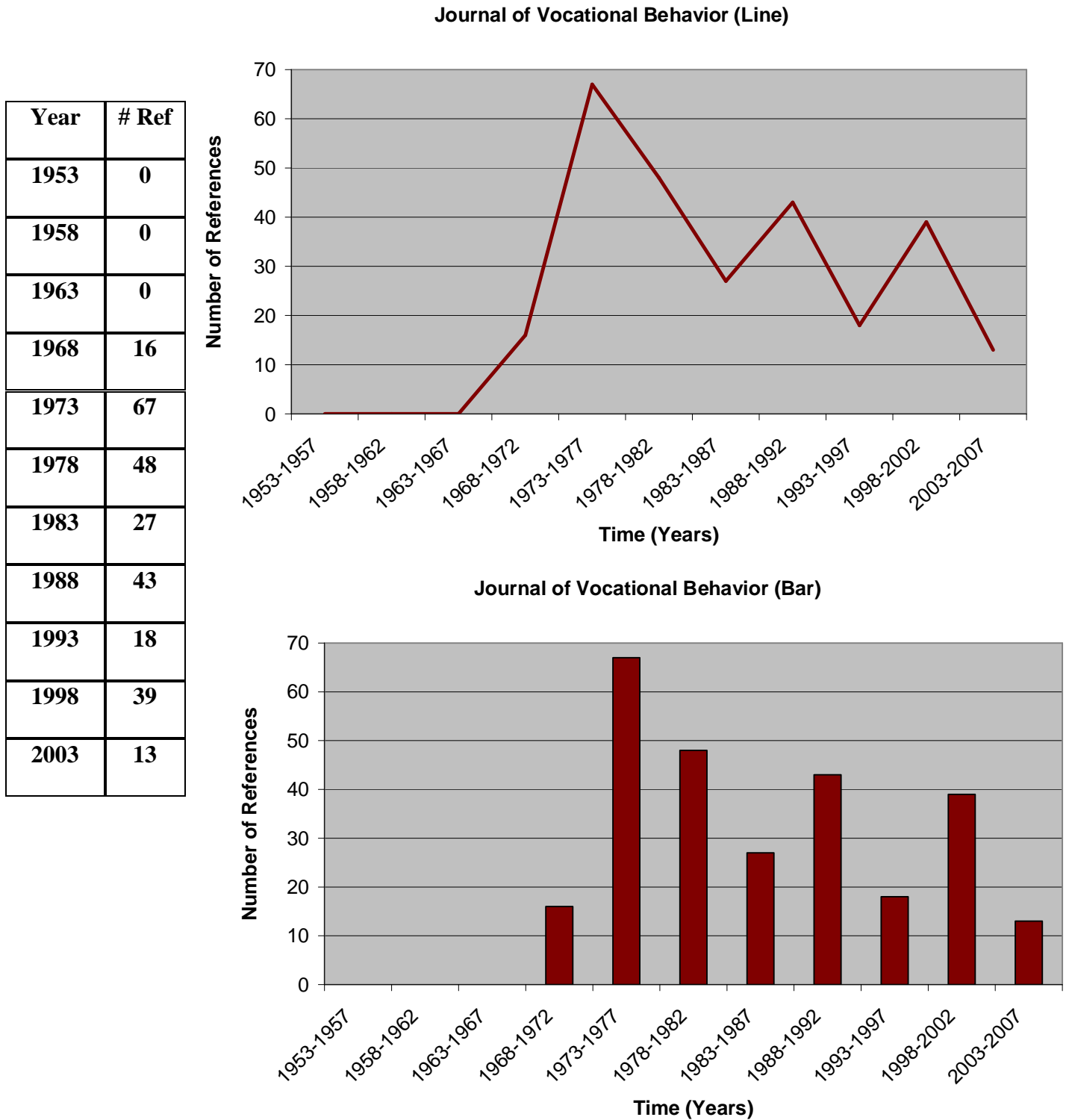
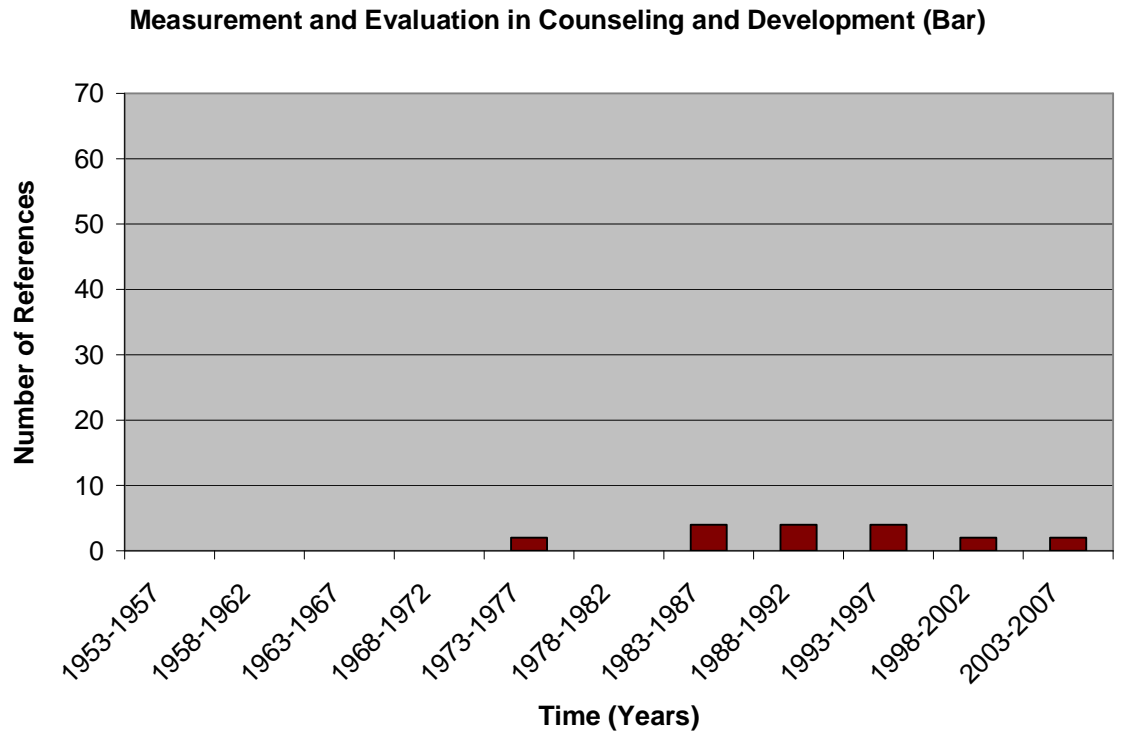
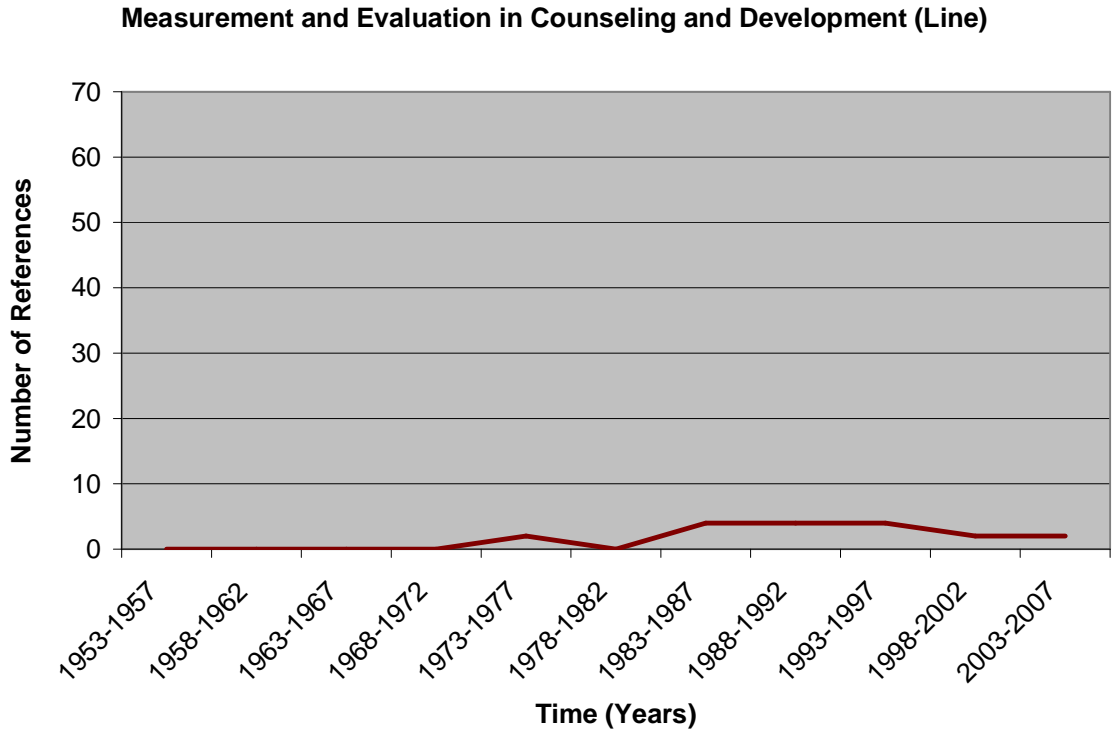


Figure 19. References in Measurement & Evaluation in Counseling & Development (MECD)

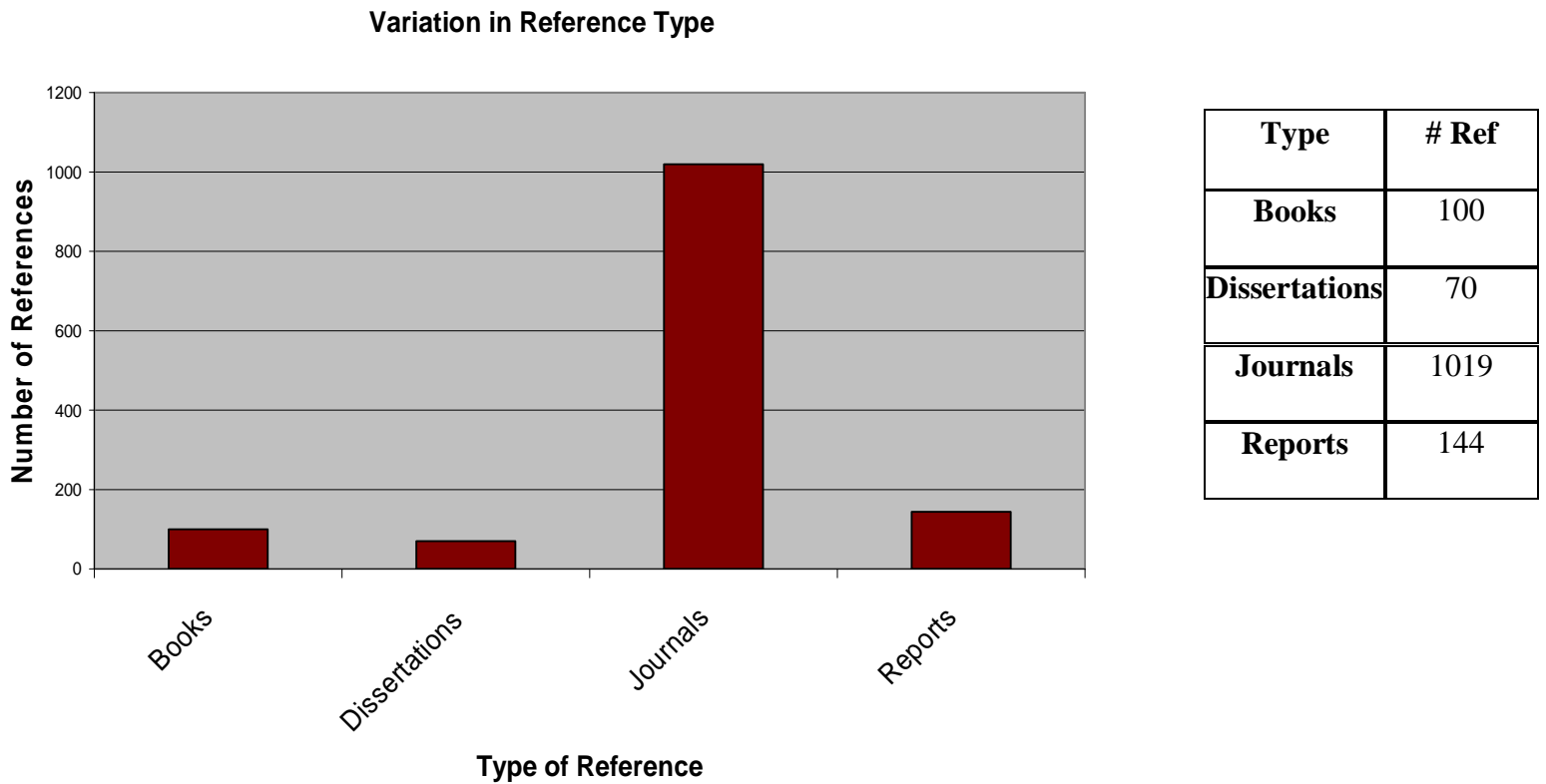
Year	# Ref
1953	0
1958	0
1963	0
1968	0
1973	2
1978	0
1983	4
1988	4
1993	4
1998	2
2003	2



7. What types of references are most often cited relating to Holland’s work?

We were interested in the type of references being cited in addition to journal publications. The four most common types of publications were examined including journals, dissertations, reports and books. Journals accounted for a majority of publications (1,019), and surpassed all other types combined. Reports followed, accounting for 144 publications. Dissertations and books accounted for 70 and 100 publications, respectively (Figure 20).

Figure 20 -- Variation in Types of Reference Citations



Summary and Implications

We used a sophisticated database and scores of search engines through a large research library to find 1,609 reference citations from 1953 to early 2007 on Holland's theory, and we categorized references used in an earlier bibliography by PAR. These categories included *Application*, *Alternate Forms*, *Theory/Typology/Validity*, *Diverse Populations*, and *Specific Populations*. References were transferred into one comprehensive bibliography and five sub bibliographies for each of the categories. An online system called Refworks was used to manage the citations. Methods and procedures were described in detail so that this project could be replicated by other scholars seeking to do similar work.

Analysis of the reference citations indicated a number of important findings. One criticism of Holland's theory is that it is no longer being used in the field. The first references were reported in 1953, and references built rapidly from 30 in 1970 to over 50 in 1980, 1985, 1986, 1988, and 2005 ranging from the mid 20s to mid 50s. There is no evidence of decline in references related to Holland's theory and applications. These findings imply that though this model has existed for over 50 years, it is still currently viable in the field of career development. Therefore, we conclude that future research should examine the use of this model and build on the significant inventory of prior research.

Another criticism of Holland's theory and assessments is that they are only applicable to a limited population. We placed each of the 1,603 references into one or more of the five categories based on the reference topic. Some references could be categorized in one or more areas. The largest category was *Applications* (48%), followed by *Specific Populations* (20%). *Diverse Populations* accounted for 16% of the references. The *Specific Population* category included references pertaining to the use of Holland's theory and applications with groups

specified by criteria such as population's specific to major, occupation, and level of education. The *Diverse Populations* category included references describing populations by identifying factors such as gender, race, nationality, disabilities and socio-economic status. References provide evidence that Holland's work is useful to practitioners working with both diverse and specific populations.

Moreover, our research revealed that Holland's work has appeared in 197 different journals since 1953. These journals are published in countries around the world and are in varied professional fields and disciplines. In addition, the Self-Directed Search has been translated into 16 languages and published in 11 different languages. Together, these data reveal the extensive infusion of the theory and practical applications into the fields of educational and vocational guidance.

Holland was contacted during the development of this study. He theorized that research on his theory and instruments may be perceived as waning, but instead we found it is being published in a wider variety of fields such as education and business. We found that six of the most prestigious journals in our field, the *Journal of Applied Psychology*, *Career Development Quarterly*, *Journal of Career Assessment*, *Journal of Counseling Psychology*, *Journal of Vocational Behavior*, and *Measurement and Evaluation in Counseling and Development*, had 53% of the 1,019 journal references, leaving 47% in other journals. It appears that interest in Holland's theory and assessments are stretching to fields outside of career counseling. A list of the 197 journals with references to Holland's work is provided in [Appendix A](#).

Review of the *Theory/Typology/Validity* category shows patterns similar to the *Alternative Form* category. Future researchers may assess whether publication of new materials relating to Holland's work correspond to these peaks in publications related to alternate forms

and validity. We also found that the least frequent reference citations related to the *Alternate Forms* category. The original SDS Form R, published in 1972, has since been translated into more than 25 languages and a wide variety of alternate and complimentary assessments exist such as My Vocational Situation, SDS: Form E for limited reading skills, and the *You and Your Career* booklet. Future research should utilize the wide scope of alternate forms available.

Review of the types of references in the bibliography indicates that journal publications far out weigh all other sources. In the future, researchers may consider using journals to quickly create similar bibliographies for other theories or assessments. However, important information was identified in other sources and it is recommended that in order to create the most comprehensive bibliography, future researchers use a variety of sources. While this is a more cumbersome task it decreases the chances of missing relevant references.

We have begun to use this research in professional settings to add to the field of career counseling. As mentioned previously, a condensed version of the sub-topics *Specific* and *Diverse Populations* was presented at a conference to encourage the development of Holland's theory and SDS in other countries. Presentation of an earlier version of this bibliography was presented at the National Career Development Association conference in Orlando, Florida, June 22, 2005. The most recent bibliography and analysis of data were presented at the Society for Vocational Psychology in Akron, Ohio, May 31, 2007. However, the purpose of this bibliography will extend beyond presentation of the completed works.

An electronic version of this bibliography is available on the Florida State University Library's Digitool archive database website so that practitioners and clients can have access to the literature backing the assessments and interventions. This online bibliography is stored in Microsoft Office Excel to increase the usability by future researchers, faculty and students. This

Technical Report will be available on FSU's Career Tech Center website (www.career.fsu.edu/techcenter) so that researchers may use it to continue to create bibliographies on other important theories and instruments in the field.

In order to maintain the electronic bibliography so that can be accessed by the general public, more work will be needed. As the volume of the bibliography grows, it is our hope that future researchers continue to collect and categorize relevant literature as well as input information into the available online Excel format. Additional technological support will be needed in uploading this information into an easily located and usable document.

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Appendix A

All Journals Cited as Reference Sources

1. Accident Analysis & Prevention
2. ACT Research Reports
3. Acta Psiquiátrica y Psicológica de America Latina
4. Adolescence
5. Age and Ageing
6. American Educational Research Journal
7. American Mental Health Counselors Association Journal
8. American Psychologist
9. Annales Academiae Scientiarum Fennicae: Dissertationes Humanum Litterarum
10. Annual Review of Psychology
11. Applied Psychology: An International Review
12. Australian Journal of Career Development
13. Australian Journal of Education
14. Australian Journal of Psychology
15. Australian Psychologist
16. British Journal of Guidance & Counselling
17. Bulletin of Educational Psychology
18. Cahiers Pédagogique
19. Canadian Counsellor
20. Canadian Journal of Counselling
21. Canadian Journal of Native Education
22. Career Development for Exceptional Individuals
23. Career Development Quarterly
24. Career Planning and Adult Development Journal
25. Child Care Quarterly
26. Chinese Journal of Clinical Psychology
27. Chinese University Education Journal
28. College Student Journal
29. Community College Frontiers
30. Community/Junior College Quarterly of Research and Practice
31. Computers in Human Behavior
32. Counseling Psychologist
33. Counselling Psychology Quarterly
34. Counselor Education and Supervision
35. Creativity Research Journal
36. Current Psychology: Developmental, Learning, Personality, Social
37. Dissertation Abstracts International Section A: Humanities & Social Sciences
38. Dissertation Abstracts International: Section B: The Sciences & Engineering
39. Educational & Psychological Measurement
40. Educational Psychology
41. Educational Research and Evaluation (An International Journal on Theory and Practice)
42. Educational Research Quarterly
43. Elementary School Guidance & Counseling
44. European Journal of Personality.Special Issue: Personality, Learning, and Education

45. European Journal of Psychological Assessment
46. European Journal of Psychology of Education.Special Issue: Values, Interests and Attitudes within Vocational Behaviour
47. Exceptional Children
48. Genetic Psychology Monographs
49. GIPO Giornale Italiano Di Psicologia Dell'Orientamento
50. Group Processes & Intergroup Relations
51. Guidance & Counselling
52. High School Journal
53. Hiroshima Forum for Psychology
54. Indian Journal of Clinical Psychology
55. Individual Psychology: Journal of Adlerian Theory, Research & Practice
56. International Journal for Educational & Vocational Guidance
57. International Journal for the Advancement of Counselling
58. International Journal of Aging & Human Development
59. International Journal of Human Resource Management
60. International Journal of Psychology
61. International Journal of Selection and Assessment
62. Japanese Journal of Educational Psychology
63. Journal for a Just and Caring Education
64. Journal for the Education of the Gifted
65. Journal for Vocational Special Needs Education
66. Journal of Addictions & Offender Counseling
67. Journal of Allied Health
68. Journal of Applied Psychology
69. Journal of Applied Rehabilitation Counseling
70. Journal of Business and Psychology
71. Journal of Career Assessment
72. Journal of Career Development
73. Journal of Career Planning and Employment
74. Journal of Clinical Psychology
75. Journal of College Placement
76. Journal of College Student Development
77. Journal of College Student Personnel
78. Journal of Computers in Mathematics and Science Teaching
79. Journal of Counseling & Development
80. Journal of Counseling Psychology
81. Journal of Creative Behavior
82. Journal of Cross Cultural Psychology
83. Journal of Educational Measurement
84. Journal of Educational Psychology
85. Journal of Educational Studies
86. Journal of Employment Counseling
87. Journal of Experimental Education
88. Journal of Higher Education
89. Journal of Human Behavior & Learning
90. Journal of Individual Psychology
91. Journal of Industrial Teacher Education
92. Journal of Marriage and the Family
93. Journal of Multicultural Counseling and Development

94. Journal of Music Therapy
95. Journal of Negro Education
96. Journal of Non-White Concerns in Personnel & Guidance
97. Journal of Occupational & Organizational Psychology
98. Journal of Occupational Psychology
99. Journal of Offender Counseling
100. Journal of Organizational Behavior
101. Journal of Pastoral Counseling
102. Journal of Personality and Social Psychology
103. Journal of Personality Assessment
104. Journal of Psychological Researches
105. Journal of Psychological Type
106. Journal of Psychology: Interdisciplinary & Applied
107. Journal of Research & Development in Education
108. Journal of Research in Personality
109. Journal of Research in Science Teaching
110. Journal of Social Affairs
111. Journal of Social Behavior and Personality
112. Journal of Social Psychology
113. Journal of the National Association of Women Deans, Administrators, and Counselors
114. Journal of Visual Impairment & Blindness
115. Journal of Vocational Behavior. Special Issue: Vocational Issues of Lesbian Women and Gay Men
116. Journal Supplement Abstract Services Catalog of Selected Documents in Psychology
117. Korean Journal of Counseling & Psychotherapy
118. Korean Journal of Industrial & Organizational Psychology
119. Kyoiku-shakaigaku Kenkyu/The Journal of Educational Sociology
120. Le prime scale italiane. Bollettino di Psicologia Applicata
121. Library and Information Science Research
122. Loisir and Societe/Society and Leisure
123. Man and Work
124. Measurement & Evaluation in Counseling & Development
125. Measurement & Evaluation in Guidance
126. Medical Education
127. Merrill-Palmer Quarterly
128. Multivariate Experimental Clinical Research
129. NASPA Journal
130. Negro Educational Review
131. New Zealand Journal of Educational Studies
132. Newsletter of the International Test Commission
133. Nursing Research
134. NWSA Journal
135. Occupational Outlook Quarterly
136. Orientation Scolaire et Professionnelle
137. Perceptual and Motor Skills
138. Personality & Individual Differences
139. Person-Centered Review
140. Personnel & Guidance Journal
141. Personnel Psychology
142. Philippine Journal of Psychology

143. Population and Environment
144. Professional Psychology: Research and Practice
145. Przegląd Psychologiczny
146. Psicothema
147. Psiholoka Obzorja/Horizons of Psychology
148. PsycCRITIQUES
149. Psychol Rep
150. Psychological Bulletin
151. Psychological Monographs
152. Psychological Reports
153. Psychological Science
154. Psychological Studies
155. Psychologie - Schweizerische Zeitschrift für Psychologie und ihre Anwendungen
156. Psychologie in Erziehung und Unterricht
157. Psychologie und Praxis
158. Psychology & Education: An Interdisciplinary Journal
159. Psychology in the Schools
160. Psychology of Music
161. Psychology: A Journal of Human Behavior
162. Psychometrika
163. Psychotherapy: Theory, Research, Practice, Training
164. Quality and Quantity
165. RE:view
166. Rehabilitation Counseling Bulletin
167. Research in Higher Education
168. Research in Rural Education
169. Research in the Schools
170. Revista de Psicología General y Aplicada
171. Revista Interamericana de Psicología
172. Revue de Psychologie Appliquée
173. School Counselor
174. Schweizerische Zeitschrift für Psychologie
175. Science et Comportement
176. Simulation and Games
177. Social Behavior and Personality
178. Social Science International
179. Social Science Quarterly
180. Sociologische Gids
181. Suid-Afrikaanse Tydskrif vir Sosiologie/The South African Journal of Sociology
182. Suvremena Psihologija
183. T Apuntes de Psicología
184. Teaching of Psychology
185. The Career Development Quarterly
186. The Counseling Psychologist
187. The Netherlands Journal of Sociology/Sociologia Neerlandica
188. Tidsskrift for Norsk Psykologforening
189. Transactional Analysis Journal
190. Travail Humain
191. Urban Education
192. Vocational Guidance Quarterly

- 193. Work and Occupations
- 194. Zeitschrift für Arbeits- und Organisationspsychologie
- 195. Zeitschrift für Differentielle und Diagnostische Psychologie
- 196. Zeitschrift für Pädagogische Psychologie/ German Journal of Educational Psychology
- 197. Zeitschrift für Personalpsychologie

Creating a Research Database on Holland's Theory and Practical Tools: Technical Report No. 47. Elizabeth A. Ruff, Robert C. Reardon, Sara C. Bertoch. 2007. View 1 excerpt. Cites methods. The effects of transition intervention on students with mild disabilities. Yvonne Anton Kelley Niemann. Theory and applications of marker-based augmented reality. Sanni Siltanen. VTT SCIENCE 3. Theory and applications of marker-based augmented reality. Sanni Siltanen. We report our practical experiences in AR development in Chapter 7. We discuss user interfaces and other application issues in augmented reality. 14. 1. Introduction In Chapter 7, we discuss technology adoption and acceptance in the development of AR. Researchers and developers have created a great number of augmented reality tools (software libraries, toolkits, SDKs, etc.) that are used for AR application development. They usually contain the methods for core augmented reality functionalities: tracking, graphic adaptation and interaction. 35. 2. Augmented reality. The Holland Codes or the Holland Occupational Themes (RIASEC) refers to a theory of careers and vocational choice (based upon personality types) that was initially developed by American psychologist John L. Holland. The US Department of Labor ETA has been using an updated and expanded version of the RIASEC model in the "Interests" section of its free online database O*NET (Occupational Information Network) since its inception during the late 1990s.