

Author Gender in *American Documentation*, 1950-1969

American Documentation (1950-1969)에서 저자 성별 분석 연구

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ABSTRACT

The field of information science has been documented in several ways during its existence and in some ways has mirrored that of other scientific disciplines during the same period. This article examines variables related to author gender of information science articles in *American Documentation* (AD) during its entire run, 1950 through 1969. Published by the American Documentation Institute, AD was a primary information science journal of its time, changing its name in 1970 to the *Journal of the American Society for Information Science* (JASIS), corresponding with the change of the parent organization's name to the American Society for Information Science (1968). AD was preceded by an earlier "information science" publication, the *Journal of Documentary Reproduction* (JDR), 1938-1942, issued by the American Library Association. Studies indicate that females contributed about 8% for the entire run of articles in JDR (1938-1942) and about 22% for the first twenty-seven years of JASIS (1970-1996). The present study explores the nature of female contributions to AD for the middle period (1950-1969). It has been determined that for the entire run of the journal under the name AD, female authors comprised about 17% of the contributors, which places their publishing percentage for this period between the earlier and later periods, thus expectedly filling the gap.

초 록

본 연구는 1950년에서 1969년 동안 *American Documentation*에 실린 정보학 논문의 저자 성별과 관련된 변수를 검토한다. *American Documentation*은 American Documentation Institute에서 출판되었고, 당시 중요한 정보학 저널이었으며, 1968년 모기관의 명칭이 American Society for Information Science로 변경되면서 1970년 표제가 *Journal of the American Society for Information Science* (JASIS)로 변경되었다. AD 이전에는 ALA에서 출판한 *Journal of Documentary Reproduction* (JDR)이 정보학 저널로 있었다. 연구에 따르면 JDR (1938-1942)의 전체 논문 중 여성은 약 8%를 차지하였고, JASIS (1970-1996)의 초기 27년에는 22%를 차지하였다. 본 연구는 1950-1969동안 *American Documentation*에 여성의 논문을 분석하고 있다. AD라는 이름으로 발행된 저널 전체에서 여성 저자는 17%를 구성하였는데 이러한 비율은 초기와 이후 시기의 중간 정도에 해당하고 있다.

Keywords: American Documentation, American Documentation Institute, Authorship, Gender, History of Information Science
저자성, 성별, 정보학 역사

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1. Introduction

Since the founding of the American Documentation Institute (ADI) in 1935 by Watson Davis, the field of information science (formerly “documentation”), the scholarly study of information has mirrored the changes in the practices of information science and technology (IST). The topics considered by IST researchers have developed in remarkable ways from articles that reported advances in microphotography in the 1930s, document classification, digital storage in the earliest years of computer science, and issues of data retrieval to such current topics as information retrieval, information-seeking behavior, information ethics, indexing, and bibliometrics. There have been a substantial number of scientific journals covering IST in the middle portion of the twentieth century, but two journals represent the tradition of IST in the United States well, namely the *Journal of Documentary Reproduction* (JDR), published by the American Library Association (1938-1942) and the major journal of the ADI, *American Documentation* (AD), published from 1950 through 1969. This journal’s name was changed to the *Journal of the Society of Information Science* (JASIS) in 1970 to correspond to the name change in 1968 of the organization from ADI to the American Society for Information Science (ASIS). Subsequently (2000), the organization changed its name to the American Society for Information Science and Technology (ASIST), evolving one more time, in 2013, to its current name, the Association for Information Science and Technology. Expectedly, some characteristics of this discipline have resembled

those in other scientific fields, including the increased participation of female researchers from a time in which female participation as practitioners and researchers was relatively small to today, when the presence of females in the sciences is significantly improved. This study attempt to fill a gap in the coverage of female authorship in information science between studies that covered JDR (Walker 1997) and JASIS (Al-Ghamdi *et al.* 1998). These two studies indicate that females contributed about 8% for the entire run of articles in JDR (1938-1942) and about 22% for the first twenty-seven years of JASIS (1970-1996). The present study seeks to determine the nature of female contributions to AD for the middle period (1950-1969) not represented by other research.

2. Literature Review

Particularly after 1995, research about the history of IST as reflected in its primary journals has increased. It has included broad historical surveys, analyses of subject coverage, and studies of author characteristics, a few addressing gender issues. The overall increase in female authorship in IST journals has been covered by several studies. A study of JDR in its brief run from 1938-1942 (Walker 1997), found overall female author representation to be approximately 8% of all authors. Another (Al-Ghamdi *et al.* 1998) analyzed author characteristics in JASIS from 1970 through 1996, finding that women contributed a total of 22% of the articles, up significantly from the JDR study (Walker 1997). An analysis of an African publication

(Atinmo and Jimba 2002) found that a run of seven years of the *African Journal of Library, Archival and Information Science* included approximately 20% participation of female authors vs 80% by males. One survey study that briefly addressed gender comparisons in AD and JASIS (Lipetz 1999) concluding that female authorship decreased from 1955 to 1965 and increased to approximately 43% in 1995 and that male-female collaborations rose to about 19% in 1995. Looking at two e-journals, an analysis (Reece-Evans 2010) isolated gender and citation in *LIBRES* and *Information Research*, drawing conclusions about citation differences between the genders and evidence of gender bias. One general overview (Smith 1999) reviewed JASIS as the primary intellectual representation of the major IST organization, touched briefly on gender, and focused more on more general issues of changing content.

Two studies cover aspects of AD. One contributed a brief note about AD and JASIS (Elias 1987) and the other sampled a fifty-year period covered by AD and ASIS for several variables: funding, number of authors per article, growth in content, corporate authors, research partnership, and transnationality (Koehler, Anderson, Dowdy, and Fields 2000).

Additional studies of the JDR, AD, JASIS, JASIST spectrum explored content and author characteristics but not those related to gender. One clearly-designed study examined the first ten years of JASIST, 2001-2010 (Bar-Ilan 2012). Topical coverage was the focus of another (Bates 1999), which analyzed subjects covered in JASIS and placed them into 22 general categories - groups that could be useful for future

studies of IST journal articles from this period. One study used data from these publication to examine the extent to which IST has become increasingly interdisciplinary (Chua and Yang 2008). The foci of another study (Cronin and Shaw 1999) were variables of authorship in four IST journals. Six variables (not including gender) were analyzed in JASIS for 1972-1974, 1982-1984, and 1988-1990 (Harter and Hooten 1992). One very specific variable, namely that of foreign authorship in two IST journals was the goal of another study (He and Spink 2002). Focused on two major variables, an investigation of articles in JASIST (Liu 2003) looked at author productivity and co-authorship. In a broader study that included several variables related to authorship (Mukherjee 2009), a bibliometric analysis of JASIST between 2000 and 2007 covered patterns of author collaboration, geographic distribution of authors, nature of references, the distribution of papers under various headings, including authorship pattern and nature of collaboration, geographic distribution of authors, nature of cited and citing references, prolific authors and authors who were frequently cited. The role of the ADI and ASIS in professional education during the period covered by a relatively specialized study (Varlejs 1999). Lastly, a fascinating general review of ADI and its successors covered a period of 75 years, and, while not focusing specifically on gender, did provide a very useful context in which to place other studies of IST organizations and journals (Williams 2012).

3. Methodology

In order to determine the relative participation of female authors in AD, the complete run of all issues of twenty volumes (1950-1969) was analyzed. First, the components of the journal were described and among the various types of contributions (association reports, committee reports, editorials, news, and several other features were classified by code), articles were designated as the primary unit of attention for the purpose of this study. Articles, whether research results or reports about instances of current applications - the two most prominent types of major contributions to the journal - were considered to be the determining characteristic of the journal as a research organ during this period. Author information was gathered and gender was determined by name forms. For the majority of names, this was not problematic because the bulk of contributors with Western names had identifiable male or female given names. Given names expressed by mere initials, those that were ambiguous in terms of gender, or those from Non-Western traditions were, for the purpose of this preliminary study, considered to represent an "undetermined" gender. Multiple authorship was recorded in a way that preserved the order in which names were listed with the authors. For the purpose of this study, individuals were counted as units whether they contributed articles as individuals or contributors to multi-authored articles, no attempt being made to record proportional authorship for multi-authored articles. Descriptive statistics were compiled to reflect overall gender distribution and changes over the twenty-year run of the journal. Data were

also drawn to identify the most productive female authors in the pages of AD and their institutional affiliations were recorded. Lastly, the findings were placed in the context of other studies of IST in the twentieth century.

4. Limitations

Certain aspects of the analysis limit the thoroughness of the results and represent the contrast between scholarly acceptable methods/results and absolute accuracy at a prohibitive cost of time and effort without a concomitantly improved result. Enhancing the following aspects of the methodology would result in a more nuanced assessment of changes in gender during this period and could form the basis for continued research.

First, proportional representation of authors of multi-authored articles would provide a more complete understanding of the relative participation of genders, but would do so only as aspects of relative contributions within AD. Nevertheless, without proportional analysis, the unit of the individual contributor does serve as a useful indicator of the participation by gender of individual researchers.

Secondly, undetermined names could be determined through additional research of professional and personal information (association data, institutional data, personal biographies, obituaries, other publications, etc.) and would provide a more detailed analysis. Given the quantity of authors involved, the fact that all 20 years were analyzed (versus a periodic sampling of

the journal run), and that this is a preliminary analysis, additional biographical research was determined to be prohibitively time-consuming.

Third, additional analyses of other variables (subject coverage, institutional type, institutional affiliation, and likelihood of co-authorship, etc.) in connection with gender could produce significant results.

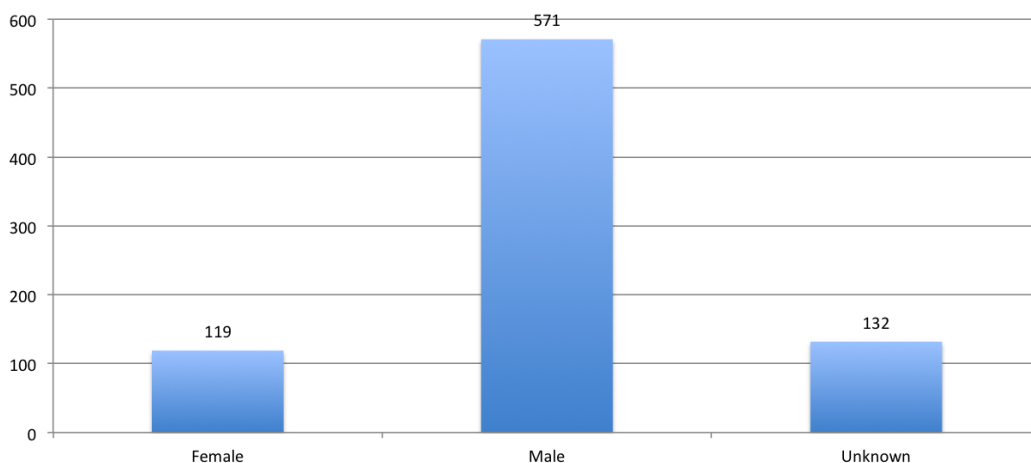
5. Findings

This preliminary study of gender differences among authors of AD from 1950 through 1969 took as its unit of measurement the individual authors and did not attempt to weight individual authorship for multi-authored articles. This means that any participation of individuals in an article is given the equivalent weight as solo-authored contributions. Results include general conclusions about the relative contributions by females and males to AD, an evaluation of the

relative contributions by gender by year, and an enumeration/description of the most productive female authors within the pages of AD.

The journal that preceded AD in spirit, if not as a product of the ADI itself, was the *Journal of Documentary Reproduction* (JDR), published by the American Library Association from 1938-1942. Women authors contributed 8% of the articles overall to that publication (Walker 1997). Women contributed approximately 22% of articles during the first 27 years of JASIS (Al-Ghamdi *et al.* 1998), 1970 through 1996. The present study finds that women contributed an overall 17% of articles to AD in its run from 1950 through 1969 (not counting individuals of unknown gender), filling the gap between the two other periods with 119 female and 571 male authors (132 were of unknown gender).

Solving the gender categorization for the “Unknown” group would present a more accurate assessment. One might speculate the some women



<Chart 1> Authors in AD, 1950-1969, by gender

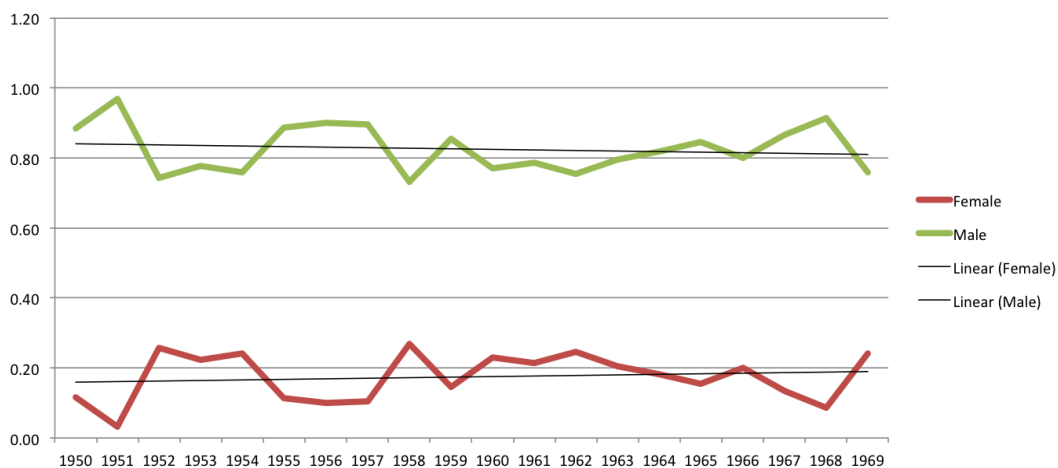
would submit articles to AD using initials instead of first names in order to avoid gender bias on the part of the journal’s editors, but identifying evidence for that would be difficult at this point. Also, of the “unknown” contributors, a relatively high number are from corporations or scientific institutes, which were sometimes known to have authors identified by first initials (vs. names) in scientific publications associated with those organizations. Neither of these reasons would suggest that the “unknown” category would be significantly different in gender distribution from that of the known gender distribution.

Data about author gender, among other variables, were gathered for all the issues of all the years of the publication run of AD. Some journal studies by necessity sample a few years to get representative data, but the desire here was to be complete and to avoid explaining anomalies potentially caused by missing years or blocks of years. It was hypothesized that the percentage of articles contributed by females

would rise over these twenty years. There was indeed a small rise, but overall the percentage remained somewhat flat:

Again, there is a chance that further research into the genders of the “unknown” authors could create a significant difference, but there is also the likelihood that the gender distribution within that group would parallel that of the main group of authors. At the very least, one can notice that the slight upward trend in percentage of female-authored articles harmonizes well in the pattern set in JDR (1938-1942) and continued in JASIS (1970-1996).

Lastly, and likely consistent with Lotka’s Law, there are many more female authors of single articles in a body of literature than of several articles and many fewer authors of multiple articles. This holds for male authors, of course, and the primary reason for including this observation here is to highlight the contributions of several prominent women in IST during the period in which IST was forming



<Chart 2> Annual percent contribution of authors by gender to AD, 1950-1969

〈Table 1〉 Frequency of Female Authorship in AD

Author	Primary Affiliation	Number of Articles
Claire Schultz	Remington Rand UNIVAC; Drexel University	7
Phyllis Richmond	University of Rochester Library	6
Susan Artandi	Rutgers University, Graduate School of Library Service	4
Elizabeth Beyerly	World Health Organization Library	4
Margaret Egan	University of Chicago, Graduate Library School	4
Helen L. Brownson	National Science Foundation	3
Marjorie R. Hyslop	American Society for Metals	3
Sonya G. Machelson	Library of Congress	3
Irma Wachtel	Documentation, Inc.	3
Shirly F. Harper	University of Chicago, Graduate Library School	2
Karen McConlogue	E.I. du Pont de Nemours & Co.	2
Phyllis A. Schwartz	Remington Rand UNIVAC	2
S. Jane Weinstein	Armour & Co.	2
72 authors	[various affiliations]	1

its intellectual base. The most prolific female contributor of research articles to AD was Claire Schultz, a leading information scientist of the period and the first female president of ADI, with 7 articles, followed by Phyllis Richmond of the University of Rochester Library (6) and several others seen on Table 1, below. Seventy-two female authors contributed one article each. Of the multi-article authors, 4 (Schultz, Artandi, Egan, Harper) were faculty members at prominent university research programs in library and information science, 8 (Schultz, Beyerly, Brownson, Hyslop, Wachtel, McConlogue, Schwartz, Weinstein) worked for scientific agencies, associations or companies, and 2 (Richmond, Machelson) were librarians.

6. Conclusions

The present study presents preliminary results to

fill a chronological gap about the role of women in IST literature between the JDR and JASIS. While the observed increase in research in the pages of AD was modest during that twenty-year period, it does correspond on both chronological ends to the state of women's contributions in the framing periods and the overall rate of about 17% for the period falls in the expected range for the period. As is the case with prolific male authors in LIS, the female counterparts were prominent university faculty, scientists and other researchers, and librarians.

7. Future Research

The limitations mentioned above could be addressed in future research. First, the precision of the results could be enhanced by carrying out research to identify the authors of unknown gender using pro-

fessional association data, institutional data, personal biographies, obituaries, patents, other publications, and other as yet unidentified sources. Secondly, the granularity of the results could be increased if the proportionality of authorship gender for multi-authored articles were taken into account. Additionally, analyses of other variables (subject coverage, institutional type, institutional affiliation, male-female collaboration, likelihood of co-authorship, etc.) in connection with gender could produce significant results. Lastly, a more detailed description of the roles of

early female researchers and their works could contribute to a better qualitative understanding of the research culture of that era.

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