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Controlling the Narrative: A Comparative Examination of Gendered Publishing Trends in the SCA and Beyond

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Abstract  This article explores the relationship between gender and authorship in conference presentations and publications as a lens to examine current disciplinary sociopolitics and the relative contributions of men and women in California archaeology. I contextualize this analysis within a broader comparison to other regions, including Southeastern archaeology as well as the North American archaeology community at large. I also examine how occupational affiliation in different sectors of archaeology (including academic, agency, museums, private sector/CRM, and others) bears on publishing trends. An evaluation of publishing trends serves as a means to investigate academic merit and visibility, along with the production and validation of knowledge in California archaeology and beyond. Despite growing parity in the numbers of women represented in professional organizations and presenting research at regional and national conferences, disparities remain with respect to publication in peer-reviewed journals, including in Journal of California and Great Basin Anthropology, California Archaeology, Southeastern Archaeology, and American Antiquity. I explore possible reasons for these disparities, including links to occupational affiliation, and conclude with some recommendations for change.

Resumen  Este artículo explora la relación entre género y autoría en ponencias de conferencias y revistas científicas para examinar la sociopolítica disciplinaria actual y las contribuciones relativas de hombres y mujeres en la arqueología de California. Contextualizo este análisis en una comparación con otras regiones, incluida la arqueología del Sudeste, así como la comunidad arqueológica norteamericana en general. También examino cómo la afiliación ocupacional en diferentes sectores de la arqueología (incluidos académicos, agencias federales, museos, sector privado, y otras afiliaciones) afecta las tendencias en publicación. La evaluación de los datos de publicación sirve para investigar la valoración y
notoriedad académica, junto con la producción y validación del conocimiento en
ta arqueología de California y más allá. Aunque se representan las mujeres con
una paridad creciente en organizaciones profesionales y se presentan sus
investigaciones en conferencias regionales y nacionales, las disparidades siguen
con respecto a la publicación en revistas revisadas por pares, incluyendo *Journal
of California and Great Basin Anthropology, California Archaeology, Southeastern
Archaeology, y American Antiquity.* Exploro razones posibles para estas dispari-
dades, incluidos los enlaces a la afiliación profesional. Concluyo con algunas
recomendaciones para el cambio.

Archaeologists are increasingly questioning the social construction of
archaeological knowledge and the real-world consequences of contemporary
archaeological practice, from its impact on descendant communities to the roles
of researchers themselves (e.g., Conkey 2005; Watkins 2003; Wylie 1997). In
recent years, there has been a resurgence of interest in how gender bias and a
lack of diversity has affected the work that archaeologists produce (e.g., Bardolph
2014; Bardolph and VanDerwarker 2016; Baxter 2005; Burkholder 2006; Gold-
stein et al. 2018; Hutson 1998, 2002; Levy 2014; Sullivan 2014; Tushingham
et al. 2017; Wright 2002), interest that dovetails with current concerns about
equity and safety issues (e.g., Meyers et al. 2018; Radde, 2018 [this volume]; Van-
Derwarker et al. 2018 [this volume]). These issues transcend archaeology and
impact the broader realm of academia (e.g., Bendels et al. 2018; Ceci et al.
2014; Clancy et al. 2014; Clauset et al. 2015; Isbell et al. 2012; Larivièrè et al.
2013; Nelson et al. 2017; Sax et al. 2002; Symonds et al. 2006; West et al.
2013), and their reappraisal is important as our discipline continues to evolve.

While women in the United States (U.S.) have made great strides in estab-
lishing parity with their male counterparts in educational attainment, discre-
pancies remain in archaeology and other disciplines nationwide with respect
to academic hiring practices, promotion, grant-funding success, fieldwork
opportunities, and other general advancement opportunities for women.
These issues certainly affect the Society for California Archaeology (SCA) and
the practice of California archaeology at large (Allen 2017:257; Reddy et al.
2017; Tushingham et al. 2017), where women comprise the minority of full-time
faculty positions and senior principal positions in cultural resource management
(CRM) (see VanDerwarker et al. 2018, this volume).

In a recent study published in PLoS ONE, Tushingham et al. (2017) revealed
historic gender differences in the publishing output of men and women in *Califor-
nia Archaeology (CA), Journal of California and Great Basin Anthropology*
(JCGBA), and the Proceedings of the Society for California Archaeology (Proceedings). Specifically, their study demonstrated that while women have had historic (and increasingly robust) levels of participation in the non peer-reviewed Proceedings between 1974 and 2016, they remain underrepresented in the two peer-reviewed journals (CA and JCGBA). They argue that this “peer review gap” is influenced by a variation in the costs and benefits of publication for different occupational sectors of archaeology (e.g., academia, agency/private sector CRM). My goal in this article is to contextualize their analysis with a broader comparison to other regions where I have examined these issues, including Southeastern archaeology (Bardolph and VanDerwarker 2016), as well as the North American archaeological community at large (Bardolph 2014).

Specifically, I consider gendered patterns of membership and conference participation in the SCA, Southeastern Archaeology Conference (SEAC), and the Society for American Archaeology (SAA), as well as publication in archaeology journals (JCGBA, CA, Southeastern Archaeology [SEA], and American Antiquity [AA]) from the past decade (2007–2017). I also compare the occupational affiliation of authors who published in the aforementioned venues, to examine how affiliation with different sectors of archaeology impacts publishing trends.

Survey data reported by VanDerwarker et al. support expectations that many women in California archaeology are opting out or are selected out of the academic pipeline and are choosing alternate careers, including government agency and private sector CRM jobs. This finding likely impacts publication trends in California archaeology, an issue discussed by Tushingham et al. (2017) and considered further below in this article. Based on additional available data from the SAA and SEAC, I evaluate this issue at the national and regional level in comparison to publication trends.

The purpose of this article is twofold: (1) to explore differential patterns of men and women’s spoken and published work to consider which gender has dominant control over current archaeological narratives; and (2) to examine how occupation affiliation bears on publication trends and consider which occupational sectors currently benefit from publishing archaeological research. I discuss possible reasons for the gender discrepancies noted and suggest possible avenues for mitigating these inequalities in the future. Overall, women in California archaeology, along with Southeastern archaeology and the North American archaeology community at large, are publishing at rates significantly lower than those of their male colleagues, despite fairly equitable representation in professional organizations and participation at meetings. Publishing disparities are compounded by occupational sector; while significantly more California archaeologists employed outside of academia publish in archaeology journals.
compared to Southeastern archaeologists or the North American community at large, women continue to be very underrepresented in the scholarly canon. I conclude that despite a current culture and context of women’s advancement in California archaeology and other regions, many challenges and obstacles remain.

Background

Over the past few decades, a large body of literature has been dedicated to exploring the ways in which gender politics have affected archaeological practice (e.g., Beaudry and White 1994; Claassen 1992, 1994; Clarke 1993; Conkey 2007; du Cros and Smith 1993; Gero 1985; Moser 2007; Nelson et al. 1994; Stark et al. 1997; Tomaskova 2007; Victor and Beaudry 1992; Zeder 1997). A subset of this literature is devoted to understanding gendered trends in scholarly productivity, including research grants and submission rates (Goldstein et al. 2018; Yellen 1983, 1994), conference participation (Bardolph and VanDerwarker 2016; Burkholder 2006; Claassen et al. 1999; Levy 2014), and publication (Bardolph 2014; Bardolph and VanDerwarker 2016; Beaudry and White 1994; Claassen et al. 1999; Hutson 2002; Rautman 2012; Stark et al. 1997; Tushingham et al. 2017; Victor and Beaudry 1992).

Despite the increasing number of women earning PhDs and actively engaged in the profession of archaeology (see Bardolph 2014:526; Hutson 2002; Tushingham et al. 2017; VanDerwarker et al. 2018, this volume), the aforementioned studies document troublesome disparities in the rates of senior (i.e., post-PhD) grant proposal submissions to the National Science Foundation, National Geographic Society, and the Wenner-Gren Foundation; research presentation at regional and national conferences; and publication in peer-reviewed journals. With respect to the latter category, my analysis of over 4,500 peer-reviewed journal articles and reports from 11 archaeology journals (broad and regional in scope, including JCGBA) from 1990 to 2013 revealed that only 29 percent of articles have women as the lead author (Bardolph 2014; see also Beaudry and White 1994; Claassen et al. 1999; Tushingham et al. 2017; Victor and Beaudry 1992).

Bibliometric studies of citation practices (Hutson 2002; Lariviére et al. 2013; Maliniak et al. 2013; McElhinney et al. 2003) have shown that in most scientific fields, articles written by women are consistently cited less frequently than articles written by men, and that men cite themselves more than women cite themselves. Examining archaeology journals specifically, including AA, Journal of Field Archaeology, Ancient Mesoamerica, and SEA, Hutson (2002:335) revealed
that men cite women significantly less than women cite women (a trend also witnessed in other archaeology journals; see Beaudry and White 1994).

Peer-reviewed publications are common benchmarks for assessing scholarly productivity, and are important for getting jobs, tenure, grants, promotion, and awards, particularly in academic archaeology. Clearly, not all publications have equal merit, as a single-authored article in a high-impact journal may carry more weight than multiple articles in smaller regional journals. Regardless, it is increasingly necessary for recent PhDs entering the academic job market to have multiple publications to even be considered for postdoctoral or tenure-track positions, let alone to get tenured or promoted. The visibility and prestige associated with publication differentially affect various sectors of practicing archaeologists and may not be reflective of those working in agency jobs, private sector CRM, and other business sectors (although many members of the CRM community and other sectors of private and public archaeology do publish; see below). In the latter sectors, differing job requirements, expectations, and reward structures may not place an emphasis on publishing as a measure of success, and often there are no clear financial or promotional awards associated with peer-reviewed journal publishing.

In many cases, women’s (or men’s) contributions to a particular field may be substantial but have low-visibility, or be difficult to quantify, such as research disseminated in grey literature (which are often cited frequently in peer-reviewed literature). With the exception of non-refereed conference proceedings (Tushingham et al. 2017), most forms of grey literature, such as technical reports and other manuscripts on file at information centers and state historic preservation offices, are difficult to systematically locate and track. The research quality of these grey literature reports is often quite high, but producing bodies that are not formal publishers generally lack the channels for extensive distribution and bibliographic control.

For this article, I place an emphasis on peer-reviewed publication data based on what they reveal about research climate and the social relations of knowledge production. There are multiple stakeholders in the archaeological endeavor, including students, professional colleagues, public land managers, avocationalists, collectors, members of local communities, and members of descendant communities. Archaeology encompasses and therefore should have diverse kinds of research and synthesis, from field and laboratory work to professional and popular writing. Those who present and publish their research control the narrative of our field—individuals that are better represented in the scholarly canon shape broader perceptions of and advancements in the discipline, put forth topics that archaeologists see as interesting or important, spark
debates, and spur paradigm shifts. Their publications end up on course syllabi and the standpoints of those authors are used to train future generations of archaeologists, regardless of what employment sector they enter.

Scholarly authorship embodies a reward system that not only honors the scientific merit of someone’s intellectual contribution, but also reflects hierarchical structures of the research community. As a result, I argue that presentation and publication data in peer-reviewed journals provide critical insight into current sociopolitics in California archaeology, while recognizing a need for further studies focused on other subsets of practicing archaeologists (see Gonzalez 2018, this volume). I also acknowledge that gender is only one of many intersectional factors that shape disciplinary culture and research climate. While considerations of race, ethnicity, class, and sexuality would make for a fully robust evaluation of gender equity in California archaeology and other regions, I leave those issues aside as they are less accessible from conference presentation and publication data alone (but see Radde 2018, this volume).

Methods
To evaluate current gender representation in conference participation and publication in California archaeology and other regions of North America, I examine data from member databases, conference programs, and the flagship journals published by and affiliated with the SCA, SEAC, and SAA (CA, SEA, and AA, respectively). For the purposes of this study, I also consider publication data from JCGBA, another popular venue for California archaeologists published by the Malki Museum of the Morongo Indian Reservation in Banning, California, in conjunction with the University of California, Riverside. I examine data spanning 2007 to 2017 by quantifying the number of men and women with membership in these organizations and who served as lead authors on conference papers, conference posters, journal articles, and published reports (sensu Bardolph 2014). Contributing authors and authors of book reviews, comments, and obituaries were omitted, although such analysis would make an interesting follow-up study as book review and obituary writing generally constitute service work, which has been shown in many fields to be disproportionately shouldered by women (e.g., Goldstein et al. 2018; Misra et al. 2011).

It bears noting that many presentations or publications in my sample have multiple authors with mixed gender representation. I focus on lead authors for two reasons, with some basic assumptions: (1) that this position represents the individual responsible for doing most of the research and writing for a given study, and (2) that lead author is the most prestigious position in terms of
how studies are perceived by fellow practitioners and evaluated for job opportunities, tenure, and promotion. Employing methods that I have used in other studies (Bardolph 2014; Bardolph and VanDerwarker 2016), I determined the gender of individuals based on first name; if names were ambiguous, then I classified them based on familiarity with the individual in question or research of department or personal web pages. I recognize that I am actually identifying the presumed sex of these individuals and not necessarily their genders; it is possible that a few authors may have been incorrectly categorized because their names do not accurately reflect their genders. However, I assume those potential instances to be limited and unlikely to affect the overall trends in this study.1

Recognizing that there are many practicing archaeologists who work for agencies or as private contract-based consultants whose main contributions may only be accessible via grey literature, I follow my analysis of gendered publishing trends with a comparative examination of occupational affiliation, determined from journal article bylines. Following Tushingham et al. (2017), I divided affiliation into six general categories: (1) academic (primarily colleges and universities, but also academically affiliated museums and CRM firms; this category also includes students); (2) private sector/CRM firms; (3) agency (federal, state, and local agencies, e.g., Bureau of Land Management, National Park Service); (4) museums; (5) independent (no affiliation stated or only an address); and (6) other (any affiliation not clearly associated with the aforementioned categories, such as historical societies, research groups, and tribal organizations).

To establish the current pool of archaeologists eligible to present research at meetings and publish in journals, I evaluate the gender makeup of society memberships. For the SCA, I draw on data for the 2016 membership year (provided by the SCA Business Office Manager Denise Wills), when the SCA had 1,238 members listed in their member database. These members include student, regular, senior, contributing, and lifetime members of the organization. The SCA does not collect or retain membership statistics by gender; as a result, I conducted a content analysis of the 2016 database to assess the current gender makeup. Following methods outlined above, I determined the gender of individual members based on first name; if names were ambiguous or listed only as initials, I classified them based on familiarity with the individual in question or with additional web research. Of the 1,229 SCA members whose first names could be confidently assigned a gender,2 619 (50 percent) are women; thus, as of 2016, there was an equal representation of men and women in the SCA, a trend that extends back to 2000 (Tushingham et al. 2017: Figure 2). I use these member data as a baseline to evaluate how society representation compares to conference participation and publication.
Conference Presentations and Publishing Trends in the SCA

An examination of SCA conference program data from the last 10 years reveals that women’s and men’s participation at the meetings—ranging from papers in organized symposia and general sessions, posters, forums, and lightning talks (I omit participation in workshops and welcome remarks in this analysis)—actually has been fairly comparable, particularly in the years since 2007 (Figure 1). Over the past decade, women have been presenting research at SCA meetings at rates that are fairly consistent with their membership rates, and in 2017, women’s participation in that annual meeting exceeded that of men. Publication data, however, display a clear discrepancy. With robust numbers of women in the SCA actively conducting and presenting research, we might expect a proportional rise in female-authored publications in recent years. An evaluation of publications in JCGBA as well as CA does not support this expectation.

Although there is some variation throughout the study period, and with one exception in the 2016 volume of JCGBA, the majority of volumes since 2007 have been skewed toward male lead authors (Figure 2). Between 2007 and 2017, only 34 percent of papers in JCGBA were lead-authored by women. CA displays even greater discrepancies; in the first year of its publication in 2009, no articles or reports were lead-authored by women (Figure 3), and cumulatively, only 23 percent of published papers were lead-authored by women. These data represent some improvement from cumulative trends reported by Tushingham et al. (2017). According to that study, only 23.4 percent of papers in JCGBA were lead-authored by women between 1974 and 2016, and only 21.1 percent of papers in CA were lead-authored by women between 2009 and 2012. I also consider the issue of

![Figure 1. Bar chart of male and female SCA conference presentations (2007–2017).](image)
repeat authors and quantified the number of men and women who published two or more articles in *JCGBA* and *CA* from 2007 to 2017. Of a total of 150 articles and reports published in *JCGBA* within that time frame, 15 individual men published more than one article, in contrast to seven individual women. Of the 96 articles and reports published in *CA* from 2009 to 2017, 16 individual men and only three individual women published multiple articles within that period of time (although these differences are not statistically significant).

To compare journal publication data to SCA membership and conference presentation rates, I use a box plot (Figure 4). Notched box plots allow for significance testing; if the notched areas of any two boxes do not overlap, then the two distributions are statistically different at the 0.05 significance level. For the plots that follow, I calculate female:male (F:M) ratios by dividing the number of
females by the number of males for a given category per year (i.e., female and male members of the SCA, or the number of conference presentations or articles and reports lead-authored by women and men). I also include a perfect parity line, where the F:M ratio equals 1.0. Data points that fall on the perfect parity line indicate an equal number of men and women represented in a particular category (e.g., SCA membership, conference presentations, publications) in a given year. The notched portions of the box plots do not overlap (Figure 4), indicating that women publish in California journals at statistically significantly lower rates than they present at the meetings, which, while closer to perfect parity, stands at a lower rate in proportion to society membership.

**Comparative Analysis**

To evaluate how conference participation and publication trends compare to other regional and national organizations, I compare data from the SEAC and SAA. With an archaeological community working throughout the Southeast, Midwest, and Great Plains, SEAC has approximately 1,000 annual members (individual, life, joint, and student) working in a variety of settings, including colleges and universities, government agencies, museums, and the private...
sector. I draw on membership data from 2000 to 2013 that were compiled by various SEAC business officers for an earlier study (see Bardolph and VanDerwarker 2016). Compared to the SCA, slightly fewer women have been represented in the SEAC membership in recent years; membership rates remained fairly constant from 2000 to 2013, close to 60 percent male and 40 percent female, as determined by a content analysis of the SEAC member database from those years (Bardolph and VanDerwarker 2016:4; Levy 2014).

A box plot comparison of SEAC member data to conference presentation data reveals that fewer women present at SEAC meetings compared to their representation in the society, although this difference is not statistically significant (Figure 5). The narrow hinge spread in the plot of membership ratios (i.e., the particularly constricted hourglass in the box) indicates little year-to-year variation in the presence of women in the society, compared to lower presentation rates. It bears noting that the proportion of women presenting at SEAC meetings, while still less than men, has steadily risen since Claassen et al.’s (1999) examination of the same issue; however, despite this increase in female presenters, women continue to lag behind men in terms of publication.

Similar to California, F:M ratios indicate that women publish in SEA at a significantly lower rate than they present at SEAC meetings, a rate that already stands in a lower proportion in comparison to the membership. All of the data represented in the box plots fall below the perfect parity line; between the full data set from 2000 to 2017, there was not a single year in which women were represented in SEAC membership, presented conference papers or posters, or published in an equal proportion to men (see Figure 5). The

![Figure 5. Box plots of female: male ratios of SEAC membership (2000–2013), participation in SEAC meetings (2013), and publication in Southeastern Archaeology (SEA) (2007–2017).](image-url)
publication data mirror trends in other journal venues in which Southeastern archaeologists typically publish, including *Midcontinental Journal of Archaeology* and state archaeology journals (e.g., *Illinois Archaeology*, *Tennessee Archaeology*), along with edited volumes (Bardolph and VanDerwarker 2016). I also consider the issue of repeat authors in SEA; of a total of 198 articles and reports published in the journal between 2007 and 2017, 25 individual men and eight individual women published more than one article within that time frame (this difference is not statistically significant).

A consideration of SAA data reveals a similar pattern to SCA and SEAC (Figure 6). For the purposes of this article, I draw on recent membership trends based on my content analysis of the membership data in 2014 from the SAA Membership Directory (a database available to members online; see Bardolph 2014:526). Of the 7,391 SAA members whose names could be confidently assigned a gender, men comprised 53 percent of the organization and women 47 percent, a figure that reflects the roughly equal proportion of men and women in the field of American archaeology. I also compiled conference program data from the 2016 SAA meeting in Orlando, Florida; of the 2,502 papers and posters presented, 50 percent were lead-authored by women. Despite the equal numbers of women represented in the society membership and presenting at the SAA annual meeting in recent years, women comprise only 29 percent of lead authors published in *AA*, the flagship journal of the SAA, in the past decade (Figure 6), a trend that has not changed substantially since the late 1960s (see Bardolph 2014; Victor and Beaudry 1992).

With respect to repeat authors in *AA*, of a total of 404 articles and reports published in the journal within that time frame, 47 individual men published

![Figure 6. Box plots of female: male ratios of SAA membership (2014), participation in the 2016 SAA meeting, and publication in *American Antiquity (AA)* (2007–2017).](image)
more than one paper, in contrast to 20 individual women; this difference in repeated publications is statistically significant ($\chi^2 = 5.34; \alpha < 0.05$). Furthermore, while some individual women published two or three articles in AA between 2007 and 2017, the only individuals who published four or more articles within that time frame were men. As such, men are much more likely to be prolific authors in AA than women. The publication data discussed in this article indicate that despite the number of women actively conducting research in North American archaeology, with high numbers of women presenting at annual meetings from California to the southeastern U.S. to the largest national conferences, women continue to lag behind men in publishing their research.

Having established differential publication rates between men and women, I next consider possible causes. Causality is a complicated issue that is likely related to multiple factors, but it is important to note that publication data do not necessarily reflect discrimination (conscious or unconscious) on the part of editors or reviewers (see Braisher et al. 2005; Tregenza 2002). Small studies by journal editors of AA (Rautman 2012) and Historical Archaeology (Beaudry and White 1994) have revealed that women submit manuscripts (and return them if accepted pending revisions) at a much lower rate than men, despite nearly identical acceptance/rejection rates. We also documented this pattern of submission bias in our survey among Southeastern archaeologists (Bardolph and VanDerwarker 2016), and a similar trend has been noted for senior archaeology research grant proposals.

Created in 2013, the SAA Task Force on Gender Disparities in Archaeological Grant Submissions documented that senior (i.e., post-PhD) male principal investigators submit National Science Foundation (NSF), Wenner-Gren Foundation, and National Geographic proposals nearly twice as frequently as senior female principal investigators, although award rates are essentially proportional (Goldstein et al. 2018). The lower submission rates of grant proposals by senior females may have some bearing on the issues at hand, as securing funding in the first place often correlates with the ability to produce data needed for publications. Submissions for NSF doctoral dissertation improvement grants and Wenner-Gren dissertation fieldwork grants were approximately evenly divided between men and women (Goldstein et al. 2018); thus, factors inhibiting women from submitting proposals to fund research projects seem to be more pronounced at the professional level and support the idea that women may be tracking out of academia at greater rates than their male counterparts (i.e., the leaking pipeline).
Occupational Affiliation

An important consideration in evaluating gendered publication rates is whether the female/male representation of authors is proportionate to the demographics of academic employment. A major issue likely impacting these publication trends is that women are not being hired for academic positions (where publication is highly valued and necessary for success) in the same proportion that they are receiving advanced degrees. Differing job requirements, expectations, and reward structures between academic and non-academic jobs (as well as the type of academic job, as primarily undergraduate-serving institutions may present a greater emphasis on teaching than publication) likely contribute to the publishing patterns discussed above, as non-academic archaeologists may have less time, motivation, and incentive to publish.

Statistics on occupational affiliation are not available for the SAA, SCA, or SEAC; however, general inferences about the makeup of society memberships can be made based on survey data for other studies. Over 33.3 percent of the members of each organization responded to recent surveys sent to their member listserves, representing a ± 5 percent statistical margin of error for associated trends. Of the 335 responses to a survey of Southeastern archaeologists on manuscript submission and publication rates administered in 2013, 48 percent self-identified as academics (including students), and the remaining respondents self-identified in the categories of private CRM, government, museums, retired, and other sectors of archaeology (Bardolph and VanDerwarker 2016:9). Of the 2,556 respondents to the SAA Member Needs Assessment Survey administered in 2015, 51 percent self-identified as academics (including students), and the remaining respondents self-identified in the same categories listed above (Society for American Archaeology 2015). In contrast, respondents to the UCSB Mentorship Survey and Gender Equity and Sexual Harassment Survey in 2016 (see VanDerwarker et al. 2018, this volume) included far fewer academics. In terms of job sector, fewer than 25 percent of the SCA survey respondents reported that they work in academia, including students (see VanDerwarker et al. 2018, this volume:Table 3, Figure 3). While both California and the southeastern U.S. boast robust private and federal CRM industries, more California archaeologists track into CRM than Southeastern archaeologists.

While a full-scale analysis of the gender makeup of North American graduate programs is outside of the scope of this article, an examination of faculty representation at Research 1 (R1) universities in California and the West Coast in contrast to the southeastern U.S. provides some insights into these trends. Using the list of research universities in the U.S. classified as R1 doctoral...
universities in the Carnegie Classification of Institutes of Higher Education (2018), I compiled data on all current tenure-track or tenured faculty members at R1 universities in California, Oregon, and Washington whose research interests broadly encompass California archaeology in a major capacity (Table 1). I followed this exercise with a compilation of current tenure-track or tenured faculty members at R1 universities in the broader southeastern U.S. whose research interests encompass Southeastern archaeology (Table 1).

In programs where faculty members conduct regional research (and by inference supervise the training of doctoral students working in those regions), R1 universities in the southeastern U.S. are much more likely than R1 universities in California to have more than one faculty member represented in the department, with a difference that is highly statistically significant ($\chi^2 = 12.57; \alpha < 0.01$). While the data on faculty members excludes emeritus faculty, it bears noting that no California/West Coast R1 universities currently have multiple faculty members whose major research focus is California archaeology, in contrast to the Southeast, where departments may have upwards of five faculty members working in the region. Recognizing that these data do not include faculty members at R2 universities or at universities located outside of the geographic region, and that faculty members with other primary area specialties may supervise students working in other regions, there are far more tenure-track/tenured research positions filled by Southeastern archaeologists than California archaeologists.

A lack of institutions with graduate programs at the doctoral level, combined with a dearth of faculty members working in a given region (in this case California), will have a resulting impact on the training and mentorship of students. Students trained at R1 universities with Southeastern research foci are exposed to a broader range of potential advisors and committee members with regional expertise, and this aspect of graduate education may have impacts on (1) the decision to pursue a doctoral degree in the first place, and (2) job choice and job placement post-PhD completion. Furthermore, there are currently no female full professors at any of the major R1 West Coast institutions with a California archaeologist, and no female assistant professors specializing in California research at any of the R1 universities in California itself. These gender imbalances in faculty makeup create further differential outcomes for students, with consequences for expectations/opportunities for publishing.

As a result, with higher proportions of archaeologists working outside academia in California archaeology, we would expect to see greater numbers of publications by non-academics in California journals. An analysis of occupational affiliation of lead authors of the four journals included in this study support
these trends. Eighty-five percent of lead authors of articles in reports in AA between 2007 and 2017 are academics. Lead authors in SEA are represented with a similarly high proportion of academics (79 percent), revealing that the benefits of publishing in these journals remains biased towards academics. In

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contrast, only 59 percent of articles and reports in JCGBA and only 53 percent of articles and reports in CA were lead-authored by individuals with academic affiliations from 2007 to 2017. Within the past decade, both California journals represent venues in which higher numbers of individuals from other sectors of the profession (agency, museum, private sector/CRM, independent, and other) are submitting and publishing their research.

To further explore this trend, I calculated non-academic:academic contributor ratios for the four journal data sets by dividing the number of publications with a non-academic lead author (i.e., agency, private sector/CRM, museum, independent, or other affiliation) by those with an academic lead author per volume. I also include a perfect parity line, where the non-academic/academic ratio equals 1.0. Data points that fall on the perfect parity line indicate an equal number of non-academics and academics represented in a given year. The notched portions of the box plots do not overlap (Figure 7), indicating that significantly more individuals with non-academic affiliations publish in California journals than they do in SEA or AA, particularly in CA. Tushingham et al. (2017) observed an increase over time in the representation of non-academic archaeologists in JCGBA and CA, noting that in many years agency and private sector/CRM professionals contributed as many or more papers than academics or museum professionals. Interestingly, this trend appears to be unique to California, as both another regional journal (SEA) and national journal (AA) remain heavily dominated by academic contributors, with no volumes in the past decade including equal or more non-academic contributions (Figure 8).

Because more archaeologists employed outside of academia are publishing in California journals compared to other regions, and employment sector

Figure 7. Box plots of non-academic:academic contributor ratios of publication in California Archaeology (CA), Journal of California and Great Basin Anthropology (JCGBA), Southeastern Archaeology (SEA), and American Antiquity (AA) (2007–2017).
data indicate higher proportions of agency/private sector archaeologists in California in general, we might expect to see a higher proportion of female-authored publications, including from women outside of academia, in California journals. The data discussed above and an analysis of occupational sector by gender (Figure 8) do not support that expectation. While faring better than their female counterparts in the southeastern U.S. and the greater North American community, non-academic women lead-authored only 12.6 percent of publications in JCGBA from 2007 to 2017 (versus 42 percent for non-academic men) and comprise only 10.4 percent of non-academic lead authors in CA (versus 37.5 percent for non-academic men) within the same time period. Therefore, despite a greater proportion of non-academic archaeologists actively publishing in peer-reviewed journals in California compared to other regions, women continue to lag behind their male colleagues in their scholarly representation.

Figure 8. Bar charts of publication by gender and occupational affiliation in California Archaeology (CA), Journal of California and Great Basin Anthropology (JCGBA), Southeastern Archaeology (SEA), and American Antiquity (AA) (2007–2017).
Discussion

This study reveals clear and surprising trends related to the dissemination of knowledge and narrative control of archaeology, in California and beyond. The California archaeology community is unique compared to other regional research communities, including the southeastern U.S. and the North American community writ large. Academics comprise a minority of California archaeologists overall, with the majority working in the private CRM sector (see VanDerwarker et al. 2018 [this volume]), in contrast to Southeastern archaeology, which also boasts a robust CRM sector but comprises a majority of academics, a trend mirrored at the national level for the SAA. There is a smaller pool of California researchers in tenure-track positions at R1 universities adjacent to the region in comparison to the Southeast, with implications for student training and mentorship (although more research is needed to explore the academic research climate and gender climate across North America, including at M.A. granting and four-year colleges).

To be sure, many women (and men) choose to have satisfying and rewarding careers in archaeology in the non-academic world, regardless of region. For women in California archaeology, there is a variety of reasons why women may choose non-academic jobs; they may simply not want academic jobs (a trend observed in survey data by VanDerwarker et al. 2018, this volume), as opposed to being discriminated against in an academic job search biased towards male candidates. Working outside of academia may offer better pay, flexibility in job/home location (including staying in California, a reason I suspect attracts many individuals to the non-academic sector), less work outside of business hours, more time for fieldwork, and it may be more family-friendly, among other benefits. Alternatively, women may be opting out of academia because of negative structural factors related to mentorship, sexual harassment, and perceived gender inequities, aside from the fact that choice of graduate programs is more limited. Regardless, employment sector trends in California have a bearing on the publishing issues at hand.

While publishing often is viewed as the purview of academics, varying members of the California archaeology community, including those employed outside academia, contribute substantially to the canon of scholarly research (more so than in other regions of North America, see above). Indeed, significantly more non-academics in California contribute to the scholarly research canon than non-academics in the Southeast and in North America more broadly, despite the fact that non-academic positions may have lesser merit based and financial rewards for publishing. Despite the robust participation
of non-academics in California research journals, however, women continue to be vastly underrepresented, in both academic and non-academic communities, along with the other regions documented in this study.

Aside from employment positions that do not prioritize publication, a variety of limiting factors may be affecting the ability of women (and men) to produce publishable manuscripts. Administrative duties, confidence issues and anxiety about writing skills, lack of mentorship, lack of interest, and other factors all affect people’s abilities to write and publish (Bardolph and VanDerwarker 2016; Bellas 1999; Finkel and Olswang 1996; Pedulla and Thébaud 2015; also see Brown 2018 [this volume]; VanDerwarker et al. 2018 [this volume]). These factors, along with other institutional constraints, historically have been documented in the broader realm of academia as affecting women’s scholarly productivity, although further ethnographic/interview research is necessary to clarify the reasons behind these trends, including for California archaeologists specifically. I suspect that we will not really begin to see more even-gendered publication ratios (and more even dissemination and valuation of archaeological knowledge) until (1) academia becomes more diversified and further promotes the hiring and advancement of women, and (2) time, opportunity, and incentive are increased for non-academic archaeologists to publish.

With respect to academia, the judgment of the work of junior faculty members (including for tenure and promotion purposes) will continue to be overseen largely by senior men unless further diversity initiatives are undertaken—the training and mentoring of students will continue to be dominated by men (see Sullivan 2014:242), regardless of what career sectors they enter, and overarching narratives in California archaeology will continue to be engineered by a single, dominant group. However, major changes in the makeup of academia may not even be feasible given the steady decline in tenure-track job availability; according to recent research by Speakman et al. (2018), over the past 30 years, the number of Anthropology PhDs has increased by about 70 percent, but there has not been a corresponding increase in the availability of new faculty positions. Unless real incentives are provided to archaeologists working outside academia to publish, the publishing trends documented in this study are unlikely to change. As a result, we need to identify tactics and strategies for supporting the many able women in our research community to publish articles and reports, whether or not they are academics—this task is crucial if we want more balanced narrative control in our field (and particularly in California, where there is a robust contribution to the scholarly canon from CRM and other sectors).

Moving forward, I outline several avenues. One relates to editorial tactics (see Bardolph and VanDerwarker 2016:15). Editorial structures differ among
journals, but so can editors’ decisions about how proactive to be in soliciting work from qualified scholars and who to solicit for peer review. Perhaps a more active recruitment tactic for journals (including thematic issues and sections) in which capable scholars (male and female, academics and non-academics) are invited to submit their work would result in more balanced submissions. Edited volumes are largely the product of invited groups of scholars, often with themes originating from organized conference symposia. An editor that actively invites and encourages colleagues to participate may relieve their anxiety about submitting and contribute to more gender parity (rather than relying on blind submissions, which is the common tactic of journal editors).

How decisions are made about which manuscripts should be sent out for review, as well as who will review them, are relevant as well; editors might consider tracking gendered submission/acceptance rates, as well as reviewing the composition of their invited reviewers and editorial boards (see Stark et al. 1997), taking considerations of gender and occupation affiliation into account. Furthermore, the organization of thematic issues need not be the sole responsibility of journal editors; members of the SCA, including women, can proactively contact journal editors to pitch special issues based on conference symposia (for example, this special issue on Gender Equity, Mentorship, and Sexual Harassment came out of a 2017 SCA symposium on the topic). Those who attend particularly engaging symposia can encourage the organizers to pursue publication so that the data are formally disseminated at a later date. These latter strategies may be particularly beneficial for panels comprised primarily of non-academics.

For collaborative projects, contributors can seriously consider authorship order and how that order might be negotiated. Regardless of gender, scholars can be mindful of productive and feasible ways to offer opportunities for junior members of the profession, from students to field technicians, to be involved in collaboration and co-publication. When scholars submit articles for publication, they should check their bibliographies/references to see if there are strong gender imbalances in their citations; if they are familiar with relevant literature by women, they should cite it (and women should cite themselves if their published research is germane to their argument).

Educators can challenge scholarly narratives engineered and legitimized by a singular dominant group. Regardless of ultimate employment sector, all archaeologists invariably receive some academic training at universities. As Brown (2018 [this volume]) and others (e.g., Cusack and Campbell 1993; Monroe and Chiu 2010) have noted, mentorship is critical to the advancement of
women and historically underrepresented groups at every stage of the academic pipeline. When crafting course syllabi, instructors can offer literature from different standpoints, from anthropological to indigenous and feminist scholarship, with different subject positions of race, ethnicity, gender, and genre. In this way, foundational theory building for undergraduates stems from a diversity of voices, regardless of the careers they ultimately enter.

Our understandings of the past have historically been constructed by a singular and dominant group (white men), but it is important to note that women are perhaps the only traditionally excluded group to have recently gained sufficient representation within archaeology to have developed critiques on their own behalf (Wylie 1997:83). All national and regional archaeological organizations, from the SCA to the SEAC to the SAA, lack racial/ethnic diversity in their memberships (see Bardolph and VanDerwarker 2016; VanDerwarker et al. 2018 [this volume]). These organizations have made commendable efforts to include more Native American participation in recent years, such as the SCA’s Native American Programs Committee (Allen 2017; Davis-King 2017), the SEAC’s complimentary registration for all Native Americans who wish to attend annual meetings, and the SAA’s Committee on Native American Relations and the Native American Scholarships Fund. However, we need to continue to explore ways to encourage new professionals from underrepresented communities as well as collaborators from diverse backgrounds to pursue and publish research as our discipline continues to evolve.

Conclusion

While it is certainly true that gender roles and expectations in archaeology have changed over the past few decades since the first major inequities were exposed, this study reveals that imbalances continue within a crucial venue in which archaeological data are disseminated to the California archaeological research community, along with other research communities in North American archaeology. The reproduction of gendered imbalances in archaeological practice remains critical to the way the discipline is perceived, by both its practitioners and the wider society. Certainly, a focus on publications alone does not give a full sense of the impact and visibility of women’s (and men’s) work, in California archaeology or in broader fields.

There is much more work to be done to fully understand the disparities in the publication sphere and in other important sectors of archaeology. Indeed, with the steady decline in tenure-track job availability and potentially increasing numbers of PhD archaeologists seeking employment in the private sector, it
behooves us to gain a better understanding of gender effects outside academia, and to strategize about ways to get the many contributors to our profession involved in research dissemination. The membership representation, conference participation, and publication data discussed in this article illuminate an important aspect of knowledge validation and valuation that affects a substantial portion of the California research community. I hope that this study, along with other recent research and efforts on the part of organizations such as the SCA Women in California Archaeology Committee, continue to inspire our community to be more self-reflexive about how gender politics impact California archaeology, past and present.

Acknowledgments

I thank Amber VanDerwarker for organizing the symposium on Gender Equity, Mentorship, and Sexual Harassment at the 2017 SCA meeting, and for valuable advice and feedback throughout this project. Kaitlin Brown, Toni Gonzalez, Kristin Hoppa, and Hugh Radde offered feedback as well. Thank you to Denise Wills for providing archives of SCA membership data. This article benefitted from the constructive comments of editor Terry Jones, Jennifer Perry, and an anonymous reviewer for California Archaeology. Seetha Reddy, former chair of the Women in California Archaeology Committee (WCA), initially invited me to present research pertaining to this topic at the 2013 SCA meeting in Berkeley; I am grateful to the WCA for their feedback, support, and continued commitment to women’s advancement in California archaeology.

Notes

1. Less than one percent of the SCA members who responded to the UCSB surveys self-identified as transgender (see VanDerwarker et al. 2018:Tables 1–5).
2. Nine members of the SCA whose genders could not be confidently assigned by name were excluded from the study (less than one percent of all names examined).
3. In their analysis of SCA conference participation in 2011 and 2016, Tushingham et al. (2017) observed that in both years, women participated in more poster sessions than men, while men presented more papers.
4. The 2016 JCGBA publication data may speak to an issue of occupational sex-typing (e.g., Gifford-Gonzalez 1994); the majority of the papers represented in this volume are the result of two special feature articles on "Plant Use by Complex Hunter Gatherers: Paleoenthnobotanical Studies in California," where eight of ten papers are lead-authored by women. Although data are needed to substantiate this claim, more laboratory specialists, including paleoethnobotanists, often tend to be women.
5. Less than one percent of SAA members had names that could not be confidently assigned a gender.

6. Of the 2,502 papers presented at the 2014 SAA meeting, 115 had authors whose names could not be confidently assigned a gender (4.8 percent of the study sample).

7. This calculation excludes recent emerita faculty members from University of California schools.

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