Women publishing in APA journals: a gender analysis of six decades.

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Abstract

Despite recent advances, gender inequality persists in many scientific fields, and Psychology is not alien to this phenomenon. This study presents the evolution of gender composition in APA (American Psychological Association) publications in the past six decades, from 1963 to 2016. Longitudinal analysis revealed an important change: women rose from a tiny 12-14% in the 1960s to almost gender parity in the last decade (2010s). The pattern of collaboration (co-authorship) shows that women tend to be slightly overrepresented as first author and underrepresented as the last or senior author. In the last two decades, women outnumber men as “new” APA authors (authors who publish for the first time in an APA journal). These features and the fact that men's publications tend to encompass a much wider range of years suggest that age may play a role in the gender composition of APA contributors.

Keywords: Women, Gender, American Psychological Association, APA, Psychology, Scientific production, Collaboration patterns

Despite significant progress made in recent decades, scientific research still displays important gender disparities. The 2015 UNESCO Science Report (UNESCO, 2015) calculated that only 28% of worldwide researchers are women. The last issue of *She Figures* (European Commission, 2016), the official report on gender equality in research and innovation in Europe, stated that we are far from achieving gender parity, and that women make up only one third of European researchers. Some large-scale academic studies have confirmed these data. For example, Sugimoto and her team (Larivière, Ni, Gingras, Cronin, & Sugimoto, 2013) carried out a worldwide bibliometric analysis of more than 5 million articles, including more than 27 million authorships, and they found that women represent fewer than 30% of scientific authorships. West, Jacquet, King, Correll, and Bergstrom (2013) analyzed more than 8 million scientific documents from the JSTOR corpus (short for Journal Storage), and again observed that global gender inequity persists in different scientific fields. Moreover, evidence shows that gender asymmetry is not limited to research. In many countries, the rate of female undergraduates is equal to or higher than that of male undergraduates (OECD, 2015a; UNESCO 2015), but women hold fewer positions as full professors, and there is an imbalance in hiring, promotion, and earnings (for a review see e.g. Shen, 2013; UNESCO, 2015).

The causes of this inequity are complex, and there is probably not just one reason for the imbalance, but we cannot reject the existence of (sometimes subtle) gender biases within science and academia. For example, Paludi and Bauer (1983) reported that an article written by a “supposedly” male is evaluated better than if the author is a

“supposedly” female (see also Nieva & Gutek, 1980). More recently, in a revealing experiment, Moss-Racusin, Dovidio, Brescoll, Graham, and Handelsman (2012) found a subtle gender bias against female students among faculty members. They asked 127 professors from six prestigious American universities to review a job application for a laboratory manager position. The applications were the same for all universities, except that they were signed with the name of a (fictitious) male or female student. Evidence showed that the “male” applicants were rated as more competent and employable than the identical “female” applicants, and they were offered a higher salary and more career mentoring. Moreover, the gender of the judges was unrelated to the ratings, and female professors showed the same gender bias as their male colleagues (see also Kuchynka, et al., 2018; Robnett, 2016).

In addition to large-scale studies, there is a volume of recent research devoted to performing gender analyses of the scientific production in specific fields, such as Software engineering (Vela, Cáceres, & Caverio, 2012), Computing research (Caverio, Vela, Cáceres, Cuesta, & Sierra-Alonso, 2015), Nanoscience and nanotechnology (Sotudeh & Khoshian, 2014), Materials science (Mauleón & Bordon, 2006), Medical literature (Jagsi et al., 2006), or Neuroscience (González-Alvarez & Cervera-Crespo, 2017). In the case of Psychology, it should be noted that bibliometric studies are abundant (e.g., Cumming, Siddle, & Hyslop, 1997; González-Álvarez & Palomar-García, 2013; Quayle & Greer, 2014), but gender analyses of psychological research outputs are scarce, outdated, or confined to a specific geographical area (Barrios, Villarroja, & Borrego, 2013; Boice, Shaughnessy, & Pecker, 1985; D’Amico, Vermigli, & Canetto, 2011; Guyer & Fidell 1973; Malouff, Schutte, & Priest, 2010). Nevertheless, a recent and

cross-sectional study provided a snapshot of the gender composition of periodical publications in contemporary psychology. González-Alvarez and Cervera-Crespo (2019) analyzed all the psychology articles published in 2009 and included in the Web of Science database (Clarivate Analytics). From a total of 90,067 authorships, gender could be identified in 74,413 (82.6%) of them, being 40,782 (54.8%) men and 33,631 (45.2%) women, suggesting that the gender asymmetry in psychology publications is less pronounced than in science in general and other specific fields.

Beyond a transversal study, we were interested in knowing the historical evolution of the gender composition of the research output within the psychological field. As it has been said, Psychology is one of the fields that currently presents a smaller gender difference in scientific production, probably because the proportion of women graduates and doctorates is higher than in other fields. Focusing on psychology in the United States, we know that women began earning more doctorates than men in the late 1980s (APA, 2006; Pion et al., 1996) and this trend continues (Willyard, 2011). A recent report of the Committee on Women in Psychology from the American Psychological Association (APA, 2017a), which updates and expands a previous 1995 Task Force Report, states that the number of female students enrolled in graduate psychology departments in 2004 made up 72.3% of the total, and 75.3% in 2014. The same report indicates that the percentage of doctoral degrees awarded to women in psychology increased from 62% in 1993 to 68% in 2002, and then 75% in 2011 (Table 3.4 of APA, 2017a). Except for nursing, this proportion of female doctorates in psychology is the highest out of a set of fourteen major fields and professions (e.g., Anthropology, Medicine, Biomedical sciences, Law, Pharmacy, etc.). The issue is pertinent because of

the well-known “leaky pipeline” phenomenon in the presence of women in science (Lariviere et al., 2013; UNESCO 2015), that is, the remarkable decline in the relative number of female researchers as their academic rank increases, leading to a huge gap between the female/male proportion of graduates vs. the female/male proportion of researchers.

We present a longitudinal gender analysis of a broad sample of APA articles published in the past six decades. The APA was founded in 1892, and today it is the largest scientific and professional organization of psychologists in the United States, with more than one hundred thousand members. Although it belongs to one country, the APA is a leading and quite influential organization on a worldwide scale. Psychologists from all over the world follow the style guidelines for scientific publication contained in the APA Publication Manual, and APA publications are a fundamental reference in the psychological field. In this regard, and from a gender point of view, tracking the historical evolution of APA publications across six decades can provide a good approximation to the evolution of the gender composition in psychological research. In this work, we analyzed the gender composition of APA contributors in the past six decades (from the 1960s to the present day), taking as units both the number of authorships and the number of individual authors publishing peer-review papers, and examining the pattern of collaboration in the articles’ co-authorships from a gender perspective.

Method

Database. The present study was based on PsyARTICLES, a database that Includes all APA published scholarly journals. We selected all the articles published in

the APA journals in the following years: 1963-67, 1973-77, 1983-87, 1993-97, 2003-07, and 2012-16; that is, we selected the five central years of each decade, except in the last one (2012-16 instead of 2013-17), because the year 2017 had not ended at the time of the study. In each period, the selection criteria or fields used in the search were the following; Publisher: American Psychological Association; Scholarly (peer reviewed) Journals; and Document Type: Journal Article.

Consequently, our sample included 57,126 articles signed by 154,988 authorships. The records were extracted in text format and preprocessed through the BibExcel software (Persson, Danell, & Wiborg-Schneider, 2009), in order to perform the subsequent bibliometric analyses with the BibExcel and Microsoft Excel 2010 programs.

Gender identification of authors. Gender identification was based on the first or given names of the authors. The PsycARTICLES database includes the authors' full names in almost all the authorships, although a small proportion of records display only the authors' initials. After a preprocess of normalization that eliminated initials accompanying given names and replaced hyphens with spaces, all the authors' first names were matched through GenderChecker, a database that includes 102,142 worldwide names, classified as male, female, or unisex (acquired from <http://genderchecker.com/>). This database is being used in research (e.g., Carnahan, Kryscynski, & Olson, 2016; Mansour et al., 2012; Yun et al., 2015) and, according to the website, by the UN Refugee Agency. Moreover, to maximize the number of observations, we identified the gender of a considerable quantity of authors, whose given names were classified as unisex, by locating biographical information or a photo

on the Internet. The accuracy of the gender classifications was tested in a validation study included in the Supplementary Material.

Procedure. After identifying the gender of the authorships for each publication, each variable studied was extracted using the BibExcel program (Persson et al., 2009). This software is a toolbox for bibliometricians that creates a file in which the values of an extracted variable are associated with each individual article (identified with a number). Finally, the values of all the variables studied were merged in a master Excel database to perform the bibliometric and statistical analyses. See *Statistical Analysis* in the Supplementary Material.

Results

Evolution of Women's participation in APA journals. A total of 57,126 articles published in 44 APA Journals were extracted from the PsyARTICLES database. Table S1 of the Supplementary material shows the distribution of the number of articles published by each journal in the six decades studied. Note that not all journals cover the whole range of years studied because some of them appeared after the 1960s (see also Table 2).

The articles were signed by 154,988 authorships, making an average of 2.71 authorships per article. After excluding the authorships with only initials, unisex names, or given names that did not match the GenderChecker database¹, we obtained 142,123 (91.7%) items with known gender (male, female) (henceforth, the percentages of female or male authorships will always refer to the known-gender total). Importantly, the total number of authorships with known gender included 90,651 (63.8%) authorships

corresponding to men and 51,472 (36.2%) corresponding to women (see Table 1). Applying the Chi square test, the difference between male and female authorships was statistically significant, $X^2(df=1) = 5504.83$, $p < 0.0001$, Cramer's $V = .139$.

Logically, authorships (or signatures) are not the same as individuals (authors) because an individual can publish several papers. The database includes authors' full names and also surnames and affiliations. We assumed that two or more records (authorships) with the same name and surname belonged to the same individual (author). If necessary, the affiliation was consulted. Thus, the 90,651 male authorships corresponded to 35,897 (54.8%) different individuals (authors) (Table 1), and the 51,472 female authorships corresponded to 29,628 (45.2%) individuals; $X^2(df=1) = 308.86$, $p < 0.001$, Cramer's $V = .049$.

Beyond the global data on the gender composition of APA contributors, we examined the temporal evolution of authorships across the six decades studied (see Figure 1; numerical data in Table S2 of the Supplementary material). The sharp decline in gender disparity during the years 1963-2016 is evident. In the 1960s, the women's authorships represented, on average, only 12.9% of the total, whereas in 2012-16, the women's authorships reached 46.4% of the total (48.5% of authors individuals). Indeed, the regression plot of percentages of female authorship as a function of the years (Fig. 1, right) almost perfectly fits a line with a 0.69 slope ($y=0.6896x - 1341.4$; $R^2 = 0.9828$, $p < .0001$).

Gender Distribution per APA Journals. Table 2 shows the percentages of women's authorship in the articles published in APA journals during the six decades studied. The journals are grouped according to the categories contained in the APA

Journals Catalog of 2017 (APA, 2017b). It is evident that in almost all the journals, the percentage of female authorships has been growing over the decades, as expected based on the overall values. However, there are marked differences in quantitative terms between some categories and others.

The category of *Developmental and Educational Psychology* stands out for the strong participation of women, with several journals that exceed 50% female authorships in the last decade (2012-16), such as *Developmental Psychology* (58.0%), *Journal of Educational Psychology* (51.9%), and *Behavioral Development Bulletin* (51.0%). Specifically, *Developmental Psychology* reached gender parity quite early, in the 1980s (1983-87: 50% female authorships; 1993-97: 56.2%; 2003-07: 60.7%; and 2012-16: 58.0%).

Some journals also stand out in the category of *Clinical and Counseling Psychology*: especially, *Training and Education in Professional Psychology* (56.9% female authorships in the last decade), *Professional Psychology: Research and Practice* (53.4%), and *Journal of Consulting and Clinical Psychology* (51.7%). Within the category of *Health Psychology*, the following journals stand out for the high participation of women in the paper's authorships: *Health Psychology* (55.8% female authorships in the last decade) and *Rehabilitation Psychology* (53.9%). In the category of *Social Psychology*, *Journal of Family Psychology* (55.8% female authorships in the last decade), and *Psychology, Public Policy, and Law* (52.1%) are high in women's participation.

At the other extreme, the categories of *General Psychology* and *Basic/Experimental Psychology* include several journals with a very low female

presence, especially *JEP: Animal Behavior Processes* (19.0% female authorships in the last decade), *Psychological Review* (19.3%), and *Psychological Methods* (27.0%). In general, none of the five *Journals of Experimental Psychology* (JEP) reaches 40% female authorships.

Gender and Productivity of APA Authors. Dividing the 90,651 male authorships (Table 1) between the 35,897 male authors (individuals) yields an average of 2.53 authorships (papers) per man. Dividing the 51,472 female authorships among the 29,628 female authors yields an average of 1.74 papers per woman. This overall gender difference in productivity is significant ($\chi^2(df=1) = 2384.57, p < 0.001$, Cramer's $V = .092$). Nevertheless, this overall disparity in number of papers written by men vs. women during the six decades combined could be influenced by the time factor. In other words, it is possible that male authors had been publishing for more years than female authors. A finer analysis is necessary, examining the productivity per year. For each year, we obtained the number of papers (authorships) published by each author and separated by gender. These data were analyzed by means of an ANOVA, with Year and Gender as fixed factors and the number of authorships as dependent variable. Now we found a much smaller difference between the averages of the annual number of articles published by men, 1.22 articles (SD = 0.60), 95% CI [1.217, 1.224], and the annual number of articles published by women, 1.13 articles (SD = 0.43), 95% CI [1.122, 1.132]. The main factor of Gender was significant, although the effect size (η^2_p) was small, $F(1, 119,869) = 581.18, MS_e = 0.29, p < .0001, \eta^2_p = .004$. The main factor of Year was also significant because overall productivity of the 1960's and in the last decade was higher

than the productivity in the rest of the decades, $F(29, 119,869) = 8.70$, $MS_e = 0.29$, $p < .0001$, $\eta^2_p = .002$. The year $\times$ gender interaction was not significant, $F(29, 119,869) = 1.04$, $MS_e = 0.29$, $p = .407$, $\eta^2_p = .0002$.

For each author, we obtained the years in which s/he published APA articles. Examining the first year and the last year in which an author published a paper, we found that the range of years was much greater for men than for women. For men, the mean of the ranges was 6.06 years ($SD = 9.73$), 95% CI [5.97, 6.15], and for women it was 3.42 years ($SD = 6.27$), 95% CI [3.33, 3.52]. The difference was clearly significant, $F(1) = 1617.39$, $MS_e = 69.71$, $p < .0001$, $\eta^2_p = .0240$. In other words, men's publications tend to encompass a wider range of years within the six decades studied, which suggests that age could play a role in scientific production (that is, hypothetically, on average the male authors are older than the female authors, and they have been publishing longer). Figure 2 displays the number of authors who publish for the first time in an APA journal. It is obvious that as the decades pass, the number of new female signings is increasing, so that in the last two decades women surpass men as “new” APA authors.

Pattern of Collaboration in the APA Articles. In recent decades, collaboration among researchers has increased considerably in science in general (OECD, 2015b; UNESCO, 2015) and also within the psychological field (Kliegl & Bates, 2011). One of the parameters most frequently used to measure scientific collaboration is co-authorship, when a researcher writes a scientific document with another researcher/s. The APA journals also reflect this overall trend, showing an exponential increase in the

number of authorships per paper throughout the six decades, rising from 1.69 authorships/paper in 1963 to 3.92 authorships/paper in 2016.

An issue examined in the present study was the author order in the by-line of each article, particularly in the key positions (first and last). The first and last author positions are usually key positions in many scientific fields, including health and behavioral sciences, except in fields where the convention calls for alphabetical order (e.g. mathematics, economics, or high-energy physics; Waltman, 2012). Indeed, in our sample, only 2.8% of the APA articles with four or more authors (or 9.93% of those with three or more authors) present the authorships in alphabetical order, which is very close to the expected probability of incidental alphabetical authorship (Waltman, 2012). Our data shows that, until the 1980's years, women tend to occupy secondary positions in the paper by-line. However, this pattern changes and, in the last decade, women appear slightly overrepresented as first authors in relative terms: women are 50.2% of the first authors, in contrast with the 46.4% of overall female proportion in that decade. Nevertheless, in all the decades studied, women appear relatively underrepresented as last or senior author (on average, 34.5% of the last authors).

Finally, we observed a phenomenon also found in previous gender studies (González-Alvarez, 2017; González-Alvarez & Cervera-Crespo, 2017, 2019): the collaborative pattern among APA authorships is, in a way, dependent on which gender occupied the first and last positions in the article by-line (see Figure 3). Thus, within the set of articles signed by a man in the first position, the number of male and female authorships was 59,500 (77.7%) and 17,125 (22.3%), respectively, more asymmetrical than the overall proportion; $X^2(df=1) = 4447.71$, $p < 0.0001$, Cramer's $V = .143$.

However, if the articles were signed by a woman in the first position, the male authorships (17,768; 37.6%) were fewer than the female authorships (29,460; 62.4%), $X^2(1) = 9913.77$; $p < 0.0001$, Cramer's $V = .229$. Similarly, within the set articles signed by a man in the last position, male and female authorships were 62,579 (75.6%) and 20,190 (24.4%), respectively, which is more asymmetrical than the overall data, $X^2(1) = 3367.85$; $p < 0.0001$, Cramer's $V = .122$. If the articles were signed by a woman in the last position, male authorships (14,737; 35.9%) were surpassed by female authorships (26,333; 64.1%), $X^2(1) = 10151.58$; $p < 0.0001$, Cramer's $V = .235$.

Discussion

It should be noted that the information on the authors' gender is not directly provided by the scientific databases and it must be indirectly inferred from the given names. This is a usual procedure in studies of this nature that is not free of errors (indeed, one of the reviewers reported that her own name was misgendered by the GenderChecker database). However, we assume that the proportion of possible errors is small –such as the validation study shows– and does not affect the conclusions².

Our data reveal that the gender structure of the APA contributors has changed radically since the 1960s, with the number of women increasing and approaching gender parity in the last decade (46.4% of authorships in 2012-16). Results from the last decade are coherent with those obtained in the transversal gender analysis of contemporary psychology (45.2%) carried out by González-Alvarez and Cervera-Crespo (2019). Comparing many scientific fields, research in psychology presents a greater gender balance than other disciplines. Thus, Caverio et al. (2015) studied female participation in

Computing research from its beginnings, and they obtained a slight growth from <3% in 1966 to 16.3% in 2010. Sotudeh and Khoshian (2014) found that women's participation in Nano Science & Technology research from 2005–2007 only accounted for 12% of contributions. In Software Engineering, Vela et al. (2012) observed that only 17.2% of the authors were women. In the medical field, women's representation has increased in recent decades. However, after analyzing authorships in six prominent medical journals from 1970–2004, Jagsi et al. (2006) concluded that “women still compose a minority of the authors of original research and guest editorials in the journals studied” (p. 281). Recently, one of the authors observed that women are only about a third of contributors of The Lancet journals (González-Alvarez, 2018), and obtained the same proportion in high-impact Neuroscience journals (González-Alvarez & Cervera-Crespo, 2017). The multidisciplinary study by West et al. (2013: Table 1) found that female authorships during the 1990–2011 period ranged from 10.64% in Mathematics, 12.04% in Philosophy, 13.68% in Economics, and so on, to 41.41% in Sociology, 41.90% in Demography, and 46.35% in Education (Psychology was not included in the survey).

However, despite the near gender parity of current APA contributors, there is a discrepancy with the gender composition of people who enter the field. The Committee on Women in Psychology, 2017, (APA, 2017a) reported that the number of female students enrolled in U.S. graduate psychology departments in 2014 represented 75.3% of the total. Moreover, this proportion is roughly maintained in the doctoral program. There is an evident “feminization” of the psychological field, but this feminization is not reflected to the same extent in scientific research, specifically in the number of APA journal contributors. While psychologists congratulate the advances women have made

in the field, some authors are concerned that the lack of men in the undergraduate studies may have a negative aspect. The most evident problem is that the field may not represent the diversity of people that it is meant to serve (Willyard, 2011).

Many gender studies on research output worldwide reveal the phenomenon known as the “leaky pipeline” of women in science (Larivière, 2013; Shen, 2013; UNESCO, 2015): the academic progression from junior to senior faculty (and research) leaks female scientists. In this story, the age of researchers probably plays an important role, and “the senior ranks of science bear the imprint of previous generations’ barriers to the progression of women” (Larivière et al, 2013, p. 213). The novelty of our data lies in the fact that the main “leak” in psychology does not seem to be between graduates and doctorates, but rather between doctorates and (consolidated) researchers who publish in the APA journals, which would indicate the influence of age, among other factors. On the other hand, the gender distribution per APA journals shows that women tend to publish more in the fields of *Developmental and Educational Psychology* or *Clinical and Counseling Psychology*, and less in journals of the *Basic/Experimental Psychology* category.

Taking together the six decades studied, men have written more APA papers than women because they had been publishing for more years. Effectively, identifying the first and the last year in which each author published its APA papers, we obtained that the range of years was almost double for men than for women. However, the productivity per year is similar in both genders.

The pattern of collaboration (co-authorships) in the APA journals presents some gender asymmetries. Women are relatively underrepresented as last or senior author, whereas in the last decade, they tend to occupy the position of first author, in relative terms. According to the APA guidelines in its different versions (e.g., APA, 2010), the author order in the paper byline should be indicative of the author's contribution. Thus, the contribution of women in multi-authored works published in the early decades seems to be relegated to subordinate positions because they are initially relatively underrepresented as first author (with respect to the overall female percentage). As the decades pass, their presence in this position increases, so that in the years 2012-16 women are slightly overrepresented as first author. This feature is in consonance with the remarkable increase of women as "new" APA authors in the last decade –that is, authors who publish for the first time in an APA journal. On the contrary, women are relatively underrepresented in the last/senior position. This double phenomenon has been observed in other contemporary gender analyses (González-Alvarez, 2017, 2018; González-Alvarez & Cervera-Crespo, 2017, 2019). In many fields, including behavioral sciences, the last author position is a key place frequently occupied by the senior or leading member of a project or research group (Waltman, 2012), generally a scientist with a consolidated (and presumably long) career. This fact, along with the relative overrepresentation of women as first author in the years 2012-16, suggests that age could play a certain role in the gender composition of APA authors.

At the same time, it seems that the author gender of the two key positions (first and last) influences the gender composition of the overall team (see Figure 3). In relative terms, there are more women in the article by-line when the first author is a woman, and,

conversely, there are more men in the by-line when the first author is a man. The same can be said regarding the last or senior position. It gives the impression that senior female researchers tend to co-publish with women more than senior male researchers do; or perhaps they work on subtopics that are relatively more appealing to women. Conversely, an analogous pattern emerges for senior male researchers.

An important issue not addressed in the present study –indeed by nor any bibliometric study as far– has to do with transgender population or people whose gender identity differs from their assigned sex at birth, or also not-binary people who are not exclusively masculine or feminine. The typical procedure of gender assignment to the scientific authors based on their given names is not sensible to these specific situations and there is nothing in the name that could be informative about it. Future bibliometric studies that may address this issue should obtain this kind of information from sources other than the name (e.g. individual questionnaires). There are many estimations about the demographic incidence of transgender population (Meerwijk & Sevelius, 2017; Meier & Labuski, 2013), and the actual rates are subject of debate depending of the definitions used, but most of them are between 0.3 – 0.6 percent of overall population. That means that although the present study had information on the rate of transgender authors, the general conclusions would not have been very different.

In summary, our data show that gender unbalance in APA authors has drastically decreased in the six decades studied. However, the current number of female researchers publishing peer-reviewed works does not correspond to the female proportion of graduates and doctorates. In the psychological field, there does not seem

to be a significant gap between the number of women graduates vs. doctorates (at least in the United States), because the female proportion is maintained. The true gender gap seems to appear, and this a novelty of our study, between the doctorate and the consolidation of a research career (expressed in the number of peer-reviewed publications). We do not have direct evidence (authors' ages are not provided by the scientific databases), but several parameters of our data suggest that age might be a factor modulating gender asymmetry. This is a hypothesis that requires further research to be directly tested. On the other hand, the age hypothesis, also proposed in other fields (Larivière et al., 2013), opens up an optimistic scenario because a part of the worldwide gender gap in scientific research can be expected to be filled in the coming years.

Endnotes

¹ There were 7,716 unisex authorships (4.8% of total authorships), pertaining to 6,734 articles (11.8% of total articles). There were 5,449 (3.5%) authorships with only initials or unmatched (with the GenderChecker database) given names, and they corresponded to 4,210 articles (7.4%). Nevertheless, there were only 1,068 articles (1.9%) whose authorships all had no known gender.

² There is no reason to presume that the possible errors of incorrect gender assignment are not random and they are gender biased. On the other hand, the GenderChecker database used in this study is more conservative than others databases of that type,

such as API Gender (i.e., some names that API Gender classifies as male or female, GenderChecker classifies them as unisex in order to reduce possible errors).

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Table 1. Overall values of Authorships (signatures) and Authors (individuals) of articles published in APA Journals during the years 1963-2016. Gender percentages refer to gender-identified values.

	Total	Gender identified	Men (%)	Women (%)
Authorships	154,988	142,123	90,651 (63.8)	51,472 (36.2)
Authors (individuals)	75,455	65,525	35,897 (54.8)	29,628 (45.2)

Table 2. Percentages of women's authorships in the articles published in the APA Journals during the years studied. The journals are grouped by the categories contained in the APA Journals Catalog of 2017 (APA, 2017).

APA Journals – Women's Authorships (%)	1963/67	1973/77	1983/87	1993/97	2003/07	2012/16
General Psychology						
American Psychologist	6.51	16.57	24.24	31.25	39.96	46.48
Archives of Scientific Psychology						41.59
Psychological Review	7.66	10.58	13.50	18.37	16.88	19.34
Psychological Bulletin	12.70	15.32	21.00	29.48	40.32	44.09
Psychological Methods				12.75	21.38	26.96
History of Psychology					34.55	37.16
Journal of Theoretical and Philosophical Psyc.				22.45	12.68	32.06
Basic/Experimental Psychology						
Journal of Experimental Psychology (JEP): General		19.09	30.95	29.80	28.23	36.27
JEP: Human Perception and Performance		16.39	23.77	23.45	26.98	32.78
JEP: Learning, Memory, and Cognition		21.98	26.94	27.98	26.38	35.05
JEP: Applied				26.67	36.11	36.35
JEP: Animal Behavior Processes		13.90	18.21	25.93	26.09	19.00
Journal of Comparative Psychology	12.71	16.64	22.64	42.59	44.67	46.44
Behavioral Neuroscience			19.85	32.13	39.71	45.63
Clinical and Counseling Psychology						
Journal of Consulting and Clinical Psyc.	13.72	18.03	29.40	34.95	45.48	51.72
Journal of Abnormal Psychology	13.42	17.54	28.82	32.95	36.33	45.94
Psychological Assessment				28.40	33.25	43.55
Journal of Counseling Psychology	12.93	21.25	31.65	45.49	50.57	46.18
Psychotherapy	15.64	20.91	37.62	38.68	41.80	47.03
Behavior Analysis: Research and Practice						38.61
Professional Psychology: Research and Practice		14.11	25.29	36.84	45.42	53.37
Training and Education in Professional Psychology					42.59	56.86
Developmental and Educational Psychology						
Developmental Psychology		40.60	50.04	56.17	60.72	57.95
Psychology and Aging			33.90	48.09	44.52	49.57
Behavioral Development Bulletin					46.43	51.00
Journal of Educational Psychology	18.62	24.83	37.04	47.42	50.41	51.89
Health Psychology						
Health Psychology			34.05	45.59	50.67	55.78

Rehabilitation Psychology	29.47	28.43	35.42	45.63	53.93
Neuropsychology		36.84	36.86	40.52	47.36
Experimental and Clinical Psychopharmacology			35.23	39.87	42.84
Psychology of Addictive Behaviors		21.05	34.52	40.86	49.94
Social Psychology					
Journal of Personality and Social Psychology	13.84	18.41	30.60	37.16	40.27
Emotion				38.80	46.66
Journal of Family Psychology			42.11	43.28	55.63
Psychology of Aesthetics, Creativity, and the Arts				32.08	41.27
Psychology, Public Policy, and Law				23.30	38.71
Journal of Applied Psychology	9.58	10.32	22.57	28.62	31.97
				34.37

Fig. 1. Gender of contributors that published articles in the APA Journals during the years 1963-2016. Number (a) and women percentage (b) of Authorships. Explanation in the text.

Fig. 2. Number of authors (separated by gender) who publish for the first time in an APA journal. Data distributed by years.

Fig. 3. Number of men's and women's authorships depending on which gender occupied the first and last positions in the article by-line (single-author papers excluded).