

AQ: 1                    **On Accusations of Exceptional Male Bias in Evolutionary  
Psychology: Placing Sex Differences in Citation Counts  
in Proper Evidentiary Contexts**

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The scientific field of evolutionary psychology has been characterized by some as particularly male-biased. For example, Meredith (2013) recently suggested a conspicuous undercitation of women exists in evolutionary psychology, and this exceptional male bias “has led to evolutionary psychology being better described as men’s psychology as it is men’s voices that are heard through their publication dominance” (p. 358). Evidence of biases in scholarly citation rates—whether in the form of sex, ethnicity, or national origin bias—have been recognized as problematic issues across many scholarly disciplines. Several sources of new evidence are used to more fully evaluate these claims regarding evolutionary psychology. It is concluded that compared with science generally, and high profile publishing in psychology specifically, evolutionary psychology is relatively *unbiased* in its citations of men and women. Many more women are needed in the field of evolutionary psychology to meet its full promise. As a field, evolutionary psychology (and psychology more generally) needs to go further and investigate how unconscious biases affect how men and women remember or seek out citations. Fortunately, an evolutionary understanding of psychological sex differences is likely to provide a compelling framework for studying these very issues.

*Keywords:* citation counts, evolutionary psychology, male bias, sex differences

In a recent analysis of sex differences in citation authorship, Meredith (2013) claimed an article by Buss and Schmitt (2011), and more broadly the field of evolutionary psychology, is especially male-biased in its use of scholarly citations. Meredith suggested a conspicuous undercitation of women in the field of evolutionary psychology “has led to evolutionary psychology being better described as men’s psychology as it is men’s voices that are heard through their publication dominance” (p. 358). This is a serious charge and evidence of bias in scholarly citation rates—whether attributable to sex, ethnicity, or national origin—has been an important issue across many scholarly disciplines (Cikara, Rudman, & Fiske, 2012; Larivière et al., 2013; Maliniak, Powers, & Walter, 2013; Rossiter, 1993). If an academic field is especially neglectful of research by women, it is

vital to understand the causes and implications of such bias for that particular field (West et al., 2013).

Empirically, Meredith (2013) found 37.2% of the authors cited by Buss and Schmitt (2011) were women. In contrast, an analysis of the entire publication history of the *Journal of Social, Evolutionary, and Cultural Psychology* (JSEC) found 45.0% of cited authors were women, an analysis of issues 9 through 11 of the journal *Evolutionary Psychology* (EP) found 27.1% of cited authors were women, and an analysis of the research presentations at the most recent meeting of the Human Behavior and Evolution Society (HBES) found 37.6% of listed authors were women. Also examined were the relative percentages of women as first-authors of citations for Buss and Schmitt (32.9%), JSEC (39.5%), EP (32.8%<sup>1</sup>), and HBES

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<sup>1</sup> The original percentage of women authors (i.e., 38.8%) reported by Meredith (2013) appears to be a typographical error, as the raw count of women authors is actually 32.8% and this percentage would lead to an overall author count of 100%.

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(38.5%). The chapter authors of a single edited book were also compared, with 69.7% of authors and 87.5% of first authors being women.

The undervaluing of women's science scholarship at all stages of their careers is a real and significant concern (Moss-Racusin et al., 2012; Rossiter, 1993), but the degree to which it is specific to evolutionary psychology is, factually, a separate and equally important question with implications for the inaccurate and pernicious stereotyping of evolutionary psychology (Tybur, Miller, & Gangestad, 2007). A careful consideration of the evidence marshaled by Meredith (2013) raises serious concerns about the claim that evolutionary psychologists are especially male-biased in scholarly citations. Namely, if evolutionary psychology is to be singled out as particularly male-biased in its citations, it is important to compare its citation patterns with other areas of psychology and science more generally. It is also important to consider possible sex differences in men's and women's scholarly activity across fields, tendency toward self-citation, the degree of publishing in high impact journals, among other factors (Cikara et al., 2012; Maliniak et al., 2013).

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High impact scholarship is, by definition, more likely to be cited. Cikara et al. (2012) examined sex differences in the publications of the most prolific scholars to publish in the high impact *Journal of Personality and Social Psychology* (*JPSP*). From 1995 through 2004, the top women scholars had an average of 3.87 *JPSP* publications, whereas the top men scholars had an average of 7.03 *JPSP* publications. Thus, women composed 35.5% of high impact *JPSP* publications. Cikara et al. (2012) also noted "the top 20 male and female *Journal of Experimental Social Psychology* authors showed the same gender divide, with men's publications ranging from 17 to 11, and women's from 8 to 4. Thus, we have evidence that *JPSP* is not unique vis-à-vis gender representation" (pp. 264–265). Taking the midpoint of men's (i.e., 14) and women's (i.e., 6) ranges in the *Journal of Experimental Social Psychology* (*JESP*) suggests 30% of publications by top publishers in that high impact journal were women.

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Meredith (2013) pointed out a similar publication trend is prevalent across the social sciences, noting that Bird (2011) documented 32%

of authors in British social science journals are women. In science scholarship more broadly, West et al. (2013) found 29.2% of authors are women in an analysis of nearly 1,800,000 JSTOR publications. More broadly still, Larivière and colleagues (2013) analyzed 27,329,915 authorships using "fractionalized" approach to authorship (i.e., coauthors receive partial authorships relative to the number of coauthors) across 5,483,841 articles published across all scholarly disciplines between 2008 to 2012 and found that "Globally, women account for fewer than 30% of fractionalized authorships, whereas men represent slightly more than 70%. Women are similarly underrepresented when it comes to first authorships. For every article with a female first author, there are nearly two (1.93) articles first-authored by men" (p. 212).

None of the preceding investigations provided information on sex differences in authorship specifically within psychology-related journals. However, we do know the percentages of women authors in evolutionary psychology-related fields such as anthropology (36% women authors), ecology and evolution (23%), political science (19%), and philosophy (12%; see West et al., 2013). The trend in extant data for citation rates to hover around 30% for women in *JPSP*, *JESP*, and across the social sciences is a troubling figure, one that suggests the use of citation counts as markers of scholarly success may be problematic within psychology (Hegarty & Walton, 2012).

Placing Meredith's (2013) findings within the broader contexts revealed above suggests that male-bias in citations is *not* especially heightened within the discipline of evolutionary psychology. Indeed, relative to science generally (29.2% of authors were women in 1,800,000 JSTOR publications), and high profile publishing in psychology specifically (35.5% of authors were women in high impact *JPSP* publications), it appears evolutionary psychology is rather *unbiased* in its citations—37.2% of the authors cited by Buss and Schmitt (2011) were women. If we treat the research presentations at HBES as an index of the scholarly productivity within the field of evolutionary psychology at this sociohistorical moment (e.g., 37.6% of new research at HBES was authored by women), the 37.2% of women authors cited by Buss and Schmitt (2011) was sociohistorically appropriate.

What is not appropriate is an article that propagates the mischaracterization of evolutionary psychology as a particularly sexist discipline (see also Tybur et al., 2007). Evolutionary psychology was once criticized for failing to study non-WEIRD samples (i.e., samples that are not Western, Educated, Industrialized, Rich, and Democratic; Henrich, Heine, & Norenzayan, 2010). However, the extent to which objective data are available suggests the exact opposite, evolutionary psychologists have been *more* likely to study non-WEIRD samples than other psychologists, not less (Kurzman, 2013). The Meredith (2013) accusation may fall into similar false accusation territory. Evolutionary psychologists may be more likely to cite women (e.g., 37.2% in Buss & Schmitt, 2011) compared with high impact *JSPS* publications (35.5%) or general social science publications (32%) or science publications more broadly (29.2%). Rather than revealing evolutionary psychology as especially misogynistic, Meredith seems to have projected a personal ideology that disregards important contextualizing facts and perpetuates pernicious stereotypes of evolutionary psychology (Tybur et al., 2007).

Still, the gender bias in authorship and citation rates across psychology and other sciences is real and it is compellingly problematic. In the field of international relations, Maliniak et al. (2013) concluded, “Research produced by a woman will be read less and cited less than research produced by a man. Not only does this mean that the trajectory of intellectual developments will be slower than it should be, but it means that the types of topics and methods being showcased in journals and on syllabi are likely to be skewed toward those favored and pursued by men” (p. 919). Meredith (2013) called for more women to enter evolutionary psychology if it is to fulfill its promise as a scientific discipline. This is a pronouncement that has wide support in evolutionary psychology, and indeed Buss (2013) made this very same call in the very same volume, noting previous “conceptual innovations and empirical discoveries [in evolutionary psychology] were made possible, I believe, by exceptionally bright female scientists having insights into female sexual psychology that had been missed by male scientists” and “it is essential for the field to attract ‘the best and the brightest’

women to go into evolutionary psychology” (p. 295).

The first step in understanding the role of sex differences in scholarly productivity and citation rates is to acknowledge that, for many disciplines, real sex differences exist. Among the many factors that may contribute to these sex differences are reproductive constraints and life decisions faced by women that are faced to a lesser degree by men (e.g., reproductive timing, trade-offs between family and career; Wolfinger, Mason, & Goulden, 2008), sex differences in career interests and abilities (Ceci, Williams, & Barnett, 2009; Stoet & Geary, 2013; Wai, Cacchio, Putallaz, & Makel, 2010), and cognitive biases and prejudices that hinder women across many stages of their careers (Halpern et al., 2007). As a field, evolutionary psychology (and psychology more generally) needs to go further and investigate precisely how biases and prejudices affect the way men and women remember or seek out citations. We also need to discuss the possibilities of how conference networking styles, research collaboration styles, self-citation tendencies, topical interests, and other gendered factors influence why scholars pay attention to some citations more than others. Fortunately, an evolutionary understanding of psychological sex differences is likely to provide a compelling and fruitful framework for studying these very issues (Benenson et al., 2014; Ellis, 2011; Lippa, 2005; Mealey, 2000; Pirlott & Schmitt, 2014).

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Received March 4, 2014

Revision received August 20, 2014

Accepted September 4, 2014 ■