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Note from the Editors

We will always be grateful to have been masters degree candidates at the Sanford School of Public Policy in 2016 and 2017. To say that this has been a unique and challenging time in American political history is an understatement of almost hilarious magnitude. Deceit, anger, racism, sexism, bigotry, and countless other forces have wrought deep divisions within our country, but our time at Sanford also proved to us that there are dedicated, compassionate, and impressively smart students and professionals from both sides of the aisle who want to find a way forward.

The current political climate has thrown into sharp relief the enduring importance of expertise and empathy. Data collection, research, storytelling, and effective advocacy are becoming more important by the day. Whether it's an online post with a compelling headline, a thoughtfully researched article, or a scholarly academic work, communication is currency for today's policy professionals. To be understood, you first have to be heard.

Our intention was to help foster an opportunity for students, academics, and policy professionals alike to share their research, recommendations, and opinions and gain practical experience in policy analysis and communications. We hope this finished issue will contribute to an ongoing dialogue about both the direction of our policy and the nature of our public discourse. We would like to dedicate this issue to students around the world who are pursuing an education in policy analysis in the hopes of contributing to positive change.

The Sanford Journal of Public Policy has had its share of growing pains in the past two academic years, and we are grateful for the time and energy that our editors and authors put into this edition of our publication. They have demonstrated patience, expertise, and flexibility as we have shaped what the journal will look like in the years ahead. We also offer special thanks to Helene McAdams, who served students tirelessly and was an effective advisor and advocate for the journal staff during her time as the Director of Student Services at the Sanford School.

About Us

The Sanford Journal of Public Policy is a print and web-based academic journal that empowers scholars and practitioners to engage in policy discussions, publish research, and express their views on today's policy challenges. The journal solicits content in a variety of formats, including academic articles, interviews with policy professionals, reviews of recently-published books, and op-ed and blog posts focused on emerging policy issues. The Sanford Journal is published in print annually, and our website, dukepolicyjournal.org, provides students with a medium for engaging in timely discussion and analysis throughout the year.

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Contents

| | |
|---|-----|
| Note from the Editors | iii |
| About Us | iv |
| Declining Gender Wage Inequality: More Variation Exists among Cohorts of Women than among States | 3 |
| How the Supreme Court Made the Freedom of Speech More Free | 29 |
| Innocence Lost: The Impact of Armed Conflict on Colombian Children | 39 |



Declining Gender Wage Inequality: More Variation Exists among Cohorts of Women than among States

Anne Kruse

Abstract: Replication, while not traditionally a focus of empirical economic research, preserves the scientific integrity of and often identifies errors in published studies. Using data from the Current Population Survey, I replicate and extend a 2013 study by Colin Campbell and Jessica Pearlman that finds that cohort effects—factors affecting the gender wage gap that change with time and differentially affect women of different ages—played a central role in the narrowing of the gender wage gap since 1975. While my replication of Campbell and Pearlman’s study yields similar results, the authors’ description of their sample is flawed, leaving me unable to match the sample used by Campbell and Pearlman. I extend Campbell and Pearlman’s study by examining state-level differences in period effects on the gender wage gap. My extension is informed by the observation that public opinion and public policies that likely affect the gender wage gap vary among states. My results indicate that cohort effects explain more of period effects on the gender wage gap than does state-level variation, implying that cohort effects have had a larger effect on the declining gender wage gap than state-level differences—such as differences in laws and attitudes—have had.

I. Introduction

Although researchers debate the magnitude of gender wage inequality in the United States, American men still have unambiguously higher average earnings than American women. Recently published studies’ estimates of gender wage parity, measured by the female-to-male ratio of median earnings for full-time workers, range from a low of 75 percent (WEF 2014) to a high of 83 percent (Pew Research Center 2016). Other studies’ findings fall somewhere in between; for example, Hegewisch and DuMonthier (2016) conclude that this ratio is 79.6 percent. Furthermore, although women earn less than men in all countries of the world, multiple studies find that the gender wage gap is at least 10 percentage

points greater in the United States than in other, more gender-balanced countries (WEF 2014, 8; OECD 2012, 259-260).

Nonetheless, the gender wage gap has narrowed over the last century. O’Neill and Polachek (1993, 225) find that, on average, the gender wage gap declined about one percent per year between 1976 and 1989, and analysts at the US Census Bureau report that the female-to-male earnings ratio was 78.3 percent in 2013, more than in any previous year (DeNavas-Walt and Proctor 2014, 40).

Numerous studies attempt to identify the causes of the narrowing gender wage gap, and understanding what has caused the gender wage gap to decline is important if lawmakers are to implement policies that address the remaining disparity between male and female earnings. One study that examines the causes of declining gender wage inequality is “Period Effects, Cohort Effects, and the Narrowing Gender Wage Gap” by Colin Campbell and Jessica Pearlman (2013). In this study, Campbell and Pearlman address the heretofore under-investigated role of cohorts by calculating how much of the narrowing gender wage gap can be attributed to age effects, period effects, and cohort effects. Table 1 defines and provides examples of each of these effects. Campbell and Pearlman’s main finding is that cohort effects, which previous studies do not thoroughly address, played a central role in the narrowing of the gender wage gap between 1975 and 2009. These results suggest that temporal factors that have reduced gender wage inequality have affected women of different ages quite differently.

| Effect | Definition | Example |
|-----------------------|--|---|
| Age Effects | Factors affecting the gender wage gap that change with a woman’s age and have the same effect on women in different time periods. | Women often temporarily exit the workforce to have children, which may hinder career advancement. Regardless of time period, the gender wage gap is therefore less pronounced among very young women, who are less likely to have had children. |
| Period Effects | Factors affecting the gender wage gap that change with time and have the same effect on women of different ages. | The Civil Rights Act of 1964 outlawed discrimination based on sex, which may have reduced the gender wage gap among women of all ages. |
| Cohort Effects | Factors affecting the gender wage gap that change with time and differentially affect women of different ages. (Cohort effects are the interaction of age effects and period effects.) | Because past wages are a major predictor of current wages, 25-year-old and 45-year-old women likely experienced different wage trajectories when the Equal Pay Act of 1963 took effect. Whereas a 25-year-old woman may have had little wage history, a 45-year-old woman likely had extensive wage history. ¹ |

In the following paper, I replicate Campbell and Pearlman's study and build on it by considering how the declining gender wage gaps vary across states. While replication has not traditionally been a focus of economic research, replication studies are important because they help preserve the scientific integrity of empirical economic research and because empirical economic research is prone to error (Burman, Reed, and Alm 2010). In the first section of this paper, I introduce the topic. I present my replication of Campbell and Pearlman's study in the second section. In the third section, I explain and offer the results of my extension. Finally, I deliver concluding remarks and recommend areas for future research in the fourth section.

My replication yields similar—but not identical—results to Campbell and Pearlman's study. Almost all the coefficients I estimate have the same sign and a comparable magnitude to the coefficients Campbell and Pearlman report; however, I am unable to match the sample the authors describe in their paper, which I attribute to inconsistencies between the methods the authors describe using and the results the authors report. In my replication of Campbell and Pearlman's study, I find that, depending on the time period and model, cohort effects explain anywhere from 52 percent to 82 percent of period effects on the gender wage gap (See Table 4 in appendix). Similarly, Campbell and Pearlman find that depending on the time period and model, cohort effects explain anywhere from 54 percent to 85 percent of period effects on the gender wage gap.

In my extension of Campbell and Pearlman's study, I consider how period effects on the gender wage gap vary by state, and I find that depending on the period, state-level variation explains anywhere from 4 percent to 41 percent of period effects on the gender wage gap (See Table 8 in appendix). Differences among states in public policies and public opinion are possible reasons that the declining gender wage gap varies by state. These results indicate that cohort effects explain more of period effects on the gender wage gap than does state-level variation, implying that cohort effects have had a larger effect on the declining gender wage gap than differences among states—such as laws and attitudes—have had.

II. Replication: How Declining Gender Wage Inequality Varies by Cohort

My replication of Campbell and Pearlman's study generally matches the results the authors report in their paper, but I find there are inconsistencies between the methods the authors describe using and the results the authors report. Despite using the same data and restricting my sample in the same ways Campbell and Pearlman describe in their paper, I am left with fewer observations than

1 This example is from Campbell and Pearlman (2013, 1695).

Campbell and Pearlman report. I suspect this difference in sample size is the reason our results are generally but not exactly the same. Nonetheless, I too find that cohort effects played a central role in the narrowing of the gender wage gap that occurred between 1975 and 2009, with cohort effects explaining more than 50 percent of period effects on the gender wage gap regardless of the time period or model examined (See Table 4 in appendix).

Data

Both Campbell and Pearlman and I use data from March supplements of the Current Population Survey (CPS) provided by the Integrated Public Use Microdata Series (IPUMS) (King et al. 2010). These data were gathered each March from 1976 to 2010, and they represent 1975 to 2009 because the survey asked respondents about their lives in the prior year.

I end up with just under 3 percent fewer observations than Campbell and Pearlman when I restrict the sample in the ways they describe. Campbell and Pearlman report having 1,860,126 observations in every one of their models, but I obtain 1,811,198 observations using the sample restrictions Campbell and Pearlman report using. Campbell and Pearlman say they restrict their sample to individuals who had wage or salary earnings in the prior year, were born in or after 1930, were aged 25 to 59 in 1975 to 1979, were not self-employed, and did not have business income. I restrict my sample in these ways as well, and I also drop observations with weights of zero, observations with unknown covariate values, and observations for individuals who either reported working zero weeks in the prior year or reported usually working zero hours per week in the prior year.² Table 2 shows descriptive statistics for the sample I use.

2 I exclude these observations because any statistical software package would drop them in regression models, and Campbell and Pearlman include the same number of observations in their descriptive statistics (e.g., Table 1 in their paper) as in their regression models (e.g., Table A1 and Table A3 in their paper). A weight of zero means CPS has attached no importance to a given observation, and in weighted regression models, observations with weights of zero do not contribute any explanatory power. Observations with unknown covariate values would be dropped in the models I report in Table 5 (see appendix), so I exclude them throughout my analysis because Campbell and Pearlman report the same number of observations in all of the models in their paper. Observations for individuals who reported working zero weeks in the prior year or reported usually working zero hours per week in the prior year also would not have contributed explanatory power to my regression models, because the dependent variable, *log of hourly wages*, has a denominator of zero for these observations:

Table 2: Average Gender Wage Gap by Period and Age

| Period | Age | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | N |
| 1975-79 | 0.3536 | 0.5182 | 0.5999 | 0.6166 | 0.6234 | | | 157,682 |
| 1980-84 | 0.2927 | 0.4059 | 0.5412 | 0.5719 | 0.6034 | 0.5964 | | 210,082 |
| 1985-89 | 0.2276 | 0.3228 | 0.4294 | 0.4831 | 0.5271 | 0.5469 | 0.5438 | 237,291 |
| 1990-94 | 0.1547 | 0.2314 | 0.3006 | 0.3610 | 0.4190 | 0.4301 | 0.4285 | 253,823 |
| 1995-99 | 0.1408 | 0.2276 | 0.2890 | 0.3125 | 0.3653 | 0.4011 | 0.4135 | 226,634 |
| 2000-04 | 0.1130 | 0.1981 | 0.2634 | 0.3022 | 0.2989 | 0.3195 | 0.3436 | 371,271 |
| 2005-09 | 0.0943 | 0.1623 | 0.2248 | 0.2793 | 0.2844 | 0.2794 | 0.2955 | 354,415 |
| N | 337,256 | 331,692 | 319,826 | 295,981 | 247,953 | 172,887 | 105,603 | 1,811,198 |

Notes: This table is my replication of Table 1 in Campbell and Pearlman's paper. Diagonal shading represents cohorts. Average gender wage gap is measured by the difference between the log of average hourly wages for men and the log of average hourly wages for women. Because $\log \text{hourly wages}_{\text{men}} - \log \text{hourly wages}_{\text{women}}$ is mathematically equivalent to $\log (\text{hourly wages}_{\text{men}} / \text{hourly wages}_{\text{women}})$, the values reported here can be interpreted as the approximate percentage difference between average male wages and average female wages.

I question whether Campbell and Pearlman actually restrict their sample to individuals born in 1930 or later. If they had done so, I do not think they would have been able to complete three cells—for the 50-54 and 55-59 age groups in the 1975-1979 period and for the 55-59 age group in the 1980-1984 period—in Table 1 of their paper. I was unable to complete those three cells in Table 2 of this paper, which is a replication of what Campbell and Pearlman call Table 1 in their paper. This is because an individual who was, for example, 50 in 1975 would have been born before 1930 and therefore should have been excluded from the sample. Furthermore, although Campbell and Pearlman do not report adjusting their data for inflation, based on the results they obtained, they must have done so. In my analysis, I used a variable provided in the CPS that standardizes monetary variables using the 1999 Consumer Price Index.³

Methods

As Campbell and Pearlman do, I use weighted Ordinary Least Squares (OLS)

$\log \text{hourly wages} = \log (\text{total annual earnings last year} / (\text{weeks worked last year} \times \text{usual hours worked per week last year}))$.

3 I report my results in logarithms—not absolute terms—but to obtain absolute terms, exponentiate the logarithms and interpret the resulting calculations in constant 1999 dollars.

regression models in my analysis. I replicate Model 1 through Model 8 from Campbell and Pearlman's paper; in the appendix, see Table 3 for my replications of Model 1 through Model 4 and Table 5 for my replications of Model 5 through Model 8. The following equation for Model 1b—my replication of Campbell and Pearlman's Model 1—serves as a starting point for each of these models. In the following equation, Y is the log of individual i 's hourly wages at time t ; $female$ is a dummy variable equal to 1 if individual i is female and 0 if an individual is male; and $period$ is a set of dummy variables for five-year time spans from 1975 to 2009, with the 1975-1979 period serving as the reference category.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 female \times period_{i,t} + \varepsilon_{i,t} \quad (1b)$$

In Model 2b, I add a set of dummy variables for five-year age categories from age 25 to age 59, with the 25-29 age group serving as the reference category. I also interact each age dummy variable with the female dummy variable.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 female \times period_{i,t} + \alpha_4 age_{i,t} + \alpha_5 female \times age_{i,t} + \varepsilon_{i,t} \quad (2b)$$

In Model 3b, I add a set of dummy variables for five-year time spans from 1930 to 1984 that indicate an individual's cohort, which is based on their year of birth, with the 1930-1934 cohort serving as the reference category. I also interact each cohort dummy variable with the female dummy variable.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 female \times period_{i,t} + \alpha_4 cohort_i + \alpha_5 female \times cohort_i + \varepsilon_{i,t} \quad (3b)$$

To parse period effects, age affects, and cohort effects, Model 4b modifies Model 1b to include both age and cohort dummies.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 female \times period_{i,t} + \alpha_4 age_{i,t} + \alpha_5 female \times age_{i,t} + \alpha_6 cohort_i + \alpha_7 female \times cohort_i + \varepsilon_{i,t} \quad (4b)$$

Model 5b is a modification of Model 4b that adds covariates. Specifically, $race$ is a set of dummy variables for Asian American/Pacific Islander, African American/Black, Latino, and Native American. Non-Hispanic White is the reference category. Additionally, $child$ is the number of own children under the age of five in a household, and $marital\ status$ is a set of dummy variables for single and widowed/divorced/separated. Married serves as the reference category.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 female \times period_{i,t} + \alpha_4 age_{i,t} + \alpha_5 female \times age_{i,t} + \alpha_6 cohort_i + \alpha_7 female \times cohort_i + \alpha_8 race_i + \alpha_9 child_{i,t} + \alpha_{10} marital\ status_{i,t} + \varepsilon_{i,t} \quad (5b)$$

Model 6b is a modification of Model 5b that adds covariates for education. Having only a high school diploma serves as the reference category, and the model includes dummy variables for Bachelor's degree or higher, some college, and no high school diploma.

$$Y_{i,t} = \alpha_0 + \alpha_1 \text{female}_i + \alpha_2 \text{period}_t + \alpha_3 \text{female} \times \text{period}_{i,t} + \alpha_4 \text{age}_{i,t} + \alpha_5 \text{female} \times \text{age}_{i,t} + \alpha_6 \text{cohort}_i + \alpha_7 \text{female} \times \text{cohort}_i + \alpha_8 \text{race}_i + \alpha_9 \text{child}_{i,t} + \alpha_{10} \text{marital status}_{i,t} + \alpha_{11} \text{education}_{i,t} + \varepsilon_{i,t} \quad (6b)$$

Model 7b is a modification of Model 6b that adds covariates for occupation, industry, and working part-time. Specifically, *occupation* is a set of dummy variables where sales occupations are the reference category, *industry* is a set of dummy variables where manufacturing industries serve as the reference category, and *part-time* is a dummy variable equal to 1 if an individual worked part-time (less than 35 hours per week) in the previous year and 0 if an individual usually worked full-time in the previous year.

$$Y_{i,t} = \alpha_0 + \alpha_1 \text{female}_i + \alpha_2 \text{period}_t + \alpha_3 \text{female} \times \text{period}_{i,t} + \alpha_4 \text{age}_{i,t} + \alpha_5 \text{female} \times \text{age}_{i,t} + \alpha_6 \text{cohort}_i + \alpha_7 \text{female} \times \text{cohort}_i + \alpha_8 \text{race}_i + \alpha_9 \text{child}_{i,t} + \alpha_{10} \text{marital status}_{i,t} + \alpha_{11} \text{education}_{i,t} + \alpha_{12} \text{occupation}_{i,t} + \alpha_{13} \text{industry}_{i,t} + \alpha_{14} \text{part-time}_{i,t} + \varepsilon_{i,t} \quad (7b)$$

Finally, Model 8b is the same as Model 7b but without covariates for occupation or industry.

$$Y_{i,t} = \alpha_0 + \alpha_1 \text{female}_i + \alpha_2 \text{period}_t + \alpha_3 \text{female} \times \text{period}_{i,t} + \alpha_4 \text{age}_{i,t} + \alpha_5 \text{female} \times \text{age}_{i,t} + \alpha_6 \text{cohort}_i + \alpha_7 \text{female} \times \text{cohort}_i + \alpha_8 \text{race}_i + \alpha_9 \text{child}_{i,t} + \alpha_{10} \text{marital status}_{i,t} + \alpha_{11} \text{education}_{i,t} + \alpha_{14} \text{part-time}_{i,t} + \varepsilon_{i,t} \quad (8b)$$

Results

The results I obtain are very similar to Campbell and Pearlman's study. Specifically, with some exceptions, almost all the coefficients I estimate in Table 3 have the same sign and a comparable magnitude to the coefficients Campbell and Pearlman report in their paper. For visualizations of how similar my results are to those that Campbell and Pearlman report, see Figure 1 through Figure 4 in the appendix. When one includes period effects, age effects, and cohort effects together in one regression model, it becomes clear that more of the narrowing gender wage gap is due to cohort effects than period effects. In fact, according to the proportions I present in Table 4, no matter the time period or model examined, cohort effects explain more than 50 percent of period effects on the gender wage gap. These results suggest that historical progress in

reducing gender wage inequality has been achieved incrementally from generation to generation—not from year to year.

See the appendix for Table 3, Figures 1–3, and Table 4.

It is also important to highlight that the covariates in Model 5b through Model 8b have quite a lot of explanatory power. All of the models in Table 5 include statistically significant coefficients for race, marital status, education, occupation, industry, and part-time employment, which suggests that these factors play a key role in labor markets and should be included in econometric models of the gender wage gap. Specifically, as I note in Table 6, covariates explain as much as 72 percent of period effects on the gender wage gap and as much as 31 percent of cohort effects on the gender wage gap. As can be seen in Table 6, Campbell and Pearlman find that the proportion of period effects and cohort effects attributable to covariates is slightly higher than my own analysis finds.

See the appendix for Tables 5 and 6.

III. Extension: How Declining Gender Wage Inequality Varies by State

I extend Campbell and Pearlman’s study by examining how period effects on the gender wage gap vary by state. This extension is motivated by the existence of state-level differences in public policies and public opinion, both of which may affect the wage trajectory of women relative to men. For example, state laws related to sex-based employment discrimination and maternity leave may affect the gender wage gap. The values held by a state’s citizens may also affect the gender wage gap in a given state. Ryu (2010), for instance, finds that states with progressive institutional environments have smaller gender wage gaps. Unlike Ryu (2010), I do not identify any *specific* factors that vary among states and impact period effects on the gender wage gap. Instead, I acknowledge that such factors exist and calculate the proportion of period effects on the gender wage gap explained by these factors. I ultimately find that, depending on the period examined, state-level variation explains between 4 and 41 percent of period effects on the gender wage gap (See Table 8 in the appendix).

Data

I also use CPS data from IPUMS (King et al. 2010) in my extension of Campbell and Pearlman’s study, but I use a larger sample in my extension than in my replication. For the most part, I restrict the extension sample the same way I restrict

the replication sample, but I also add several years of new data to the extension sample.⁴ Between the time Campbell and Pearlman published their paper and the time I conducted this analysis, a few more years of CPS data were collected, enabling me to include an additional time period—2010 to 2014, represented by CPS surveys from 2011 through 2015 since the CPS asks respondents about their lives in the prior year—in my extension.

Methods

I again use an OLS regression for my extension, Model 9b. Model 9b is a modification of Model 1b that adds *state*, a set of dummy variables for each of the 50 states and the District of Columbia, where Alabama is the reference category.

$$Y_{i,t} = \alpha_0 + \alpha_1 female_i + \alpha_2 period_t + \alpha_3 state_{i,t} + \alpha_4 female \times period_{i,t} + \alpha_5 female \times state_{i,t} + \alpha_6 period \times state_{i,t} + \alpha_7 female \times period \times state_{i,t} + \varepsilon_{i,t} \quad (9b)$$

Results

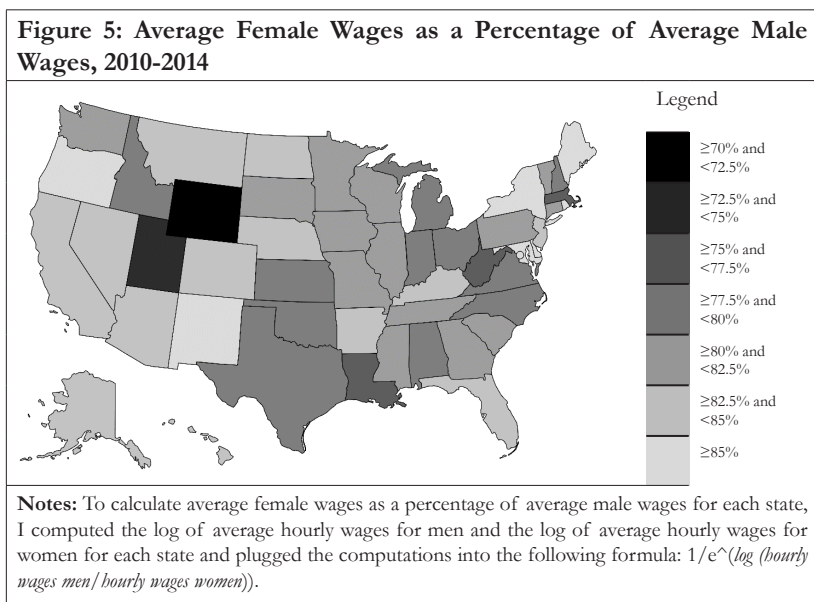
While I find evidence that state-level variation impacts the gender wage gap, my results suggest that cohort effects have had a larger effect on the declining gender wage gap than has state-level variation. State-level variation explains between 4 percent (during the 1995-1999 period) and 41 percent (during the 1980-1984 period) of period effects on the gender wage gap (See Table 8 in appendix). In comparison, as I report in the previous section, cohort effects explain between 52 percent and 82 percent of period effects on the gender wage gap (See Table 4 in appendix), depending on the time period and model examined. In this section, I also find that each state has its own unique trend; some states' gender wage gaps have fluctuated significantly, while others' gender wage gaps have narrowed fairly linearly. I report the results of Model 9b in Table 7 in the appendix, but I do not report a coefficient for every variable included in the regression, as there are hundreds of them.

Figure 5 shows the gender wage gap—measured by average female wages as a percentage of average male wages—for each of the 50 states and the District of Columbia in the 2010-2014 period. As this map shows, different states have different-sized gender wage gaps. As a percentage of average male wages, average female wages during the 2010-2014 period were lowest in Wyoming at about 71 percent and highest in the District of Columbia at about 90 percent.

4 In my extension, I drop observations for which one of the 50 states or the District of Columbia is not identified.

Louisiana, Massachusetts, Utah, and West Virginia had particularly wide gender wage gaps in the 2010-2014 period, with women earning on average less than 75 percent of what men earned. On the other hand, Delaware, Maine, Maryland, New Mexico, New York, Oregon, and Rhode Island had relatively narrow gender wage gaps in the 2010-2014 period, with women earning on average at least 85 percent of what men earned.

See the appendix for Table 7.



See the appendix for Table 8.

IV. Conclusion

My replication of Campbell and Pearlman's study yields very similar results to those that Campbell and Pearlman themselves report, but I was unable to match the sample the authors describe using. The main implication of Campbell and Pearlman's findings—and of my own replication of their findings—is that more of the narrowing gender wage gap is due to cohort effects than to period effects, indicating that more progress has occurred over generations than over time. I also show that period effects on the gender wage gap vary by state. In some areas of the United States, the gender wage gap is quite narrow, whereas

other areas of the United States continue to experience relatively high gender wage inequality.

To identify and promote policies that can address the remaining disparity between male and female earnings, more research must be done to improve our understanding of the factors that have caused the gender wage gap to decline over the last half century. For example, future studies could ask why state-level variation explains such different amounts of period effects on the gender wage gap in different periods. Why does state-level variation explain 41 percent of period effects on the gender wage gap in the 1980-1984 time period and just 4 percent of period effects on the gender wage gap in the 1995-1999 time period? The observation that the gender wage gap has narrowed more in the District of Columbia, a relatively large urban center, than in any other state poses another possible question for future research: do urban and rural areas experience different period effects on the gender wage gap? I was unable to conduct this analysis myself due to data limitations, but other researchers may be able to take up this and other analyses. A number of questions remain, and researchers in this field play an important role in improving our understanding of how gender wage parity might be achieved.

V. Appendix 1: Tables

| Variable | Model 1a | | Model 2b | | Model 3b | | Model 4b | |
|----------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Female | -0.513*** | 0.004 | -0.395*** | 0.004 | -0.605*** | 0.006 | -0.544*** | 0.010 |
| Period 1980-1984 | -0.084*** | 0.003 | -0.103*** | 0.003 | -0.046*** | 0.003 | -0.071*** | 0.004 |
| Period 1985-1989 | -0.078*** | 0.003 | -0.113*** | 0.003 | 0.001 | 0.003 | -0.045*** | 0.004 |
| Period 1990-1994 | -0.145*** | 0.003 | -0.192*** | 0.003 | -0.021*** | 0.003 | -0.093*** | 0.005 |
| Period 1995-1999 | -0.113*** | 0.003 | -0.172*** | 0.003 | 0.061*** | 0.003 | -0.043*** | 0.006 |
| Period 2000-2004 | -0.054*** | 0.003 | -0.121*** | 0.003 | 0.177*** | 0.003 | 0.041*** | 0.008 |
| Period 2005-2009 | -0.074*** | 0.003 | -0.144*** | 0.003 | 0.230*** | 0.003 | 0.058*** | 0.009 |
| Female and 1980-1984 | 0.050*** | 0.005 | 0.064*** | 0.005 | 0.011* | 0.005 | 0.014** | 0.005 |
| Female and 1985-1989 | 0.118*** | 0.005 | 0.143*** | 0.005 | 0.043*** | 0.005 | 0.047*** | 0.006 |
| Female and 1990-1994 | 0.212*** | 0.004 | 0.247*** | 0.004 | 0.101*** | 0.005 | 0.111*** | 0.008 |
| Female and 1995-1999 | 0.227*** | 0.004 | 0.270*** | 0.004 | 0.076*** | 0.005 | 0.094*** | 0.009 |
| Female and 2000-2004 | 0.261*** | 0.004 | 0.310*** | 0.004 | 0.067*** | 0.005 | 0.095*** | 0.011 |
| Female and 2005-2009 | 0.290*** | 0.004 | 0.341*** | 0.004 | 0.052*** | 0.005 | 0.091*** | 0.013 |
| Ages 30-34 | | | 0.160*** | 0.002 | | | 0.120*** | 0.003 |
| Ages 35-39 | | | 0.264*** | 0.002 | | | 0.191*** | 0.004 |
| Ages 40-44 | | | 0.316*** | 0.002 | | | 0.214*** | 0.005 |
| Ages 45-49 | | | 0.348*** | 0.002 | | | 0.216*** | 0.006 |
| Ages 50-54 | | | 0.364*** | 0.003 | | | 0.196*** | 0.008 |

Table 3, continued: Log Hourly Wages by Gender, Age, Period, and Cohort

| Variable | Model 1b | | Model 2b | | Model 3b | | Model 4b | |
|-----------------------------------|----------|------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Ages 55-59 | | | 0.349*** | 0.003 | | | 0.148*** | 0.009 |
| Female and Ages 30-34 | | | -0.096*** | 0.003 | | | -0.061*** | 0.004 |
| Female and Ages 35-39 | | | -0.176*** | 0.003 | | | -0.102*** | 0.005 |
| Female and Ages 40-44 | | | -0.216*** | 0.003 | | | -0.102*** | 0.007 |
| Female and Ages 45-49 | | | -0.242*** | 0.004 | | | -0.089*** | 0.009 |
| Female and Ages 50-54 | | | -0.255*** | 0.004 | | | -0.057*** | 0.011 |
| Female and Ages 55-59 | | | -0.265*** | 0.005 | | | -0.018 | 0.013 |
| Birth Cohort 1935-1939 | | | | | -0.014** | 0.004 | -0.005 | 0.005 |
| Birth Cohort 1940-1944 | | | | | -0.025*** | 0.004 | 0.004 | 0.005 |
| Birth Cohort 1945-1949 | | | | | -0.068*** | 0.004 | -0.004 | 0.006 |
| Birth Cohort 1950-1954 | | | | | -0.158*** | 0.004 | -0.065*** | 0.007 |
| Birth Cohort 1955-1959 | | | | | -0.225*** | 0.004 | -0.115*** | 0.008 |
| Birth Cohort 1960-1964 | | | | | -0.296*** | 0.004 | -0.160*** | 0.009 |
| Birth Cohort 1965-1969 | | | | | -0.346*** | 0.004 | -0.176*** | 0.011 |
| Birth Cohort 1970-1974 | | | | | -0.417*** | 0.005 | -0.199*** | 0.012 |
| Birth Cohort 1975-1979 | | | | | -0.533*** | 0.005 | -0.253*** | 0.014 |
| Birth Cohort 1980-1984 | | | | | -0.643*** | 0.007 | -0.306*** | 0.015 |
| Female and Birth Cohort 1935-1939 | | | | | 0.021** | 0.007 | 0.029*** | 0.007 |
| Female and Birth Cohort 1940-1944 | | | | | 0.063*** | 0.006 | 0.070*** | 0.007 |
| Female and Birth Cohort 1945-1949 | | | | | 0.137*** | 0.006 | 0.133*** | 0.008 |

Table 3, continued: Log Hourly Wages by Gender, Age, Period, and Cohort

| Variable | Model 1b | | Model 2b | | Model 3b | | Model 4b | |
|-----------------------------------|-----------|-------|----------|-------|----------|-------|----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Female and Birth Cohort 1950-1954 | | | | | 0.217*** | 0.006 | 0.205*** | 0.010 |
| Female and Birth Cohort 1955-1959 | | | | | 0.256*** | 0.006 | 0.246*** | 0.012 |
| Female and Birth Cohort 1960-1964 | | | | | 0.286*** | 0.006 | 0.273*** | 0.014 |
| Female and Birth Cohort 1965-1969 | | | | | 0.315*** | 0.006 | 0.292*** | 0.016 |
| Female and Birth Cohort 1970-1974 | | | | | 0.372*** | 0.007 | 0.330*** | 0.018 |
| Female and Birth Cohort 1975-1979 | | | | | 0.434*** | 0.008 | 0.361*** | 0.020 |
| Female and Birth Cohort 1980-1984 | | | | | 0.461*** | 0.010 | 0.362*** | 0.022 |
| Constant | 2.823*** | 0.002 | 2.645*** | 0.003 | 2.878*** | 0.004 | 2.712*** | 0.007 |
| N | 1,811,198 | | | | | | | |

Notes: This table is my replication of Table A1 in Campbell and Pearlman's paper. I use "b" to distinguish my estimates (e.g, Model 1b) from those of Campbell and Pearlman (e.g, Model 1). The dependent variable is the log of hourly wages. * = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$

Table 4: Proportion of Period Effects on the Gender Wage Gap Explained by Cohort Effects

| | This Author | | Campbell and Pearlman | |
|---|----------------------------|--|----------------------------|--|
| | Period vs. Period + Cohort | Period + Age vs. Period + Age + Cohort | Period vs. Period + Cohort | Period + Age vs. Period + Age + Cohort |
| Female and 1980-1984 | 0.79 | 0.78 | 0.80 | 0.77 |
| Female and 1985-1989 | 0.64 | 0.67 | 0.66 | 0.67 |
| Female and 1990-1994 | 0.52 | 0.55 | 0.54 | 0.56 |
| Female and 1995-1999 | 0.67 | 0.65 | 0.70 | 0.66 |
| Female and 2000-2004 | 0.74 | 0.69 | 0.78 | 0.71 |
| Female and 2005-2009 | 0.82 | 0.73 | 0.85 | 0.75 |
| N | 1,811,198 | | | |
| <p>Notes: This table is my replication of Table A2 in Campbell and Pearlman's paper. I calculate the values in the <i>Period vs. Period + Cohort</i> column by dividing the <i>female x period</i> interactions I report in Model 3b by the <i>female x period</i> interactions I report in Model 1b and subtracting the result from 1. I calculate the values in the <i>Period + Age vs. Period + Age + Cohort</i> column by dividing the <i>female x period</i> interactions I report in Model 4b by the <i>female x period</i> interactions I report in Model 2b and subtracting the result from 1.</p> | | | | |

Table 5: Log Hourly Wages by Gender, Age, Period, and Cohort and Including Covariates

| Variable | Model 5b | | Model 6b | | Model 7b | | Model 8b | |
|------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Female | -0.535*** | 0.009 | -0.512*** | 0.009 | -0.391*** | 0.008 | -0.453*** | 0.009 |
| Period 1980-1984 | -0.063*** | 0.003 | -0.069*** | 0.003 | -0.072*** | 0.003 | -0.066*** | 0.003 |
| Period 1985-1989 | -0.031*** | 0.004 | -0.044*** | 0.004 | -0.045*** | 0.004 | -0.038*** | 0.004 |
| Period 1990-1994 | -0.076*** | 0.005 | -0.124*** | 0.005 | -0.109*** | 0.005 | -0.119*** | 0.005 |
| Period 1995-1999 | -0.025*** | 0.006 | -0.087*** | 0.006 | -0.075*** | 0.006 | -0.084*** | 0.006 |

| Variable | Model 5b | | Model 6b | | Model 7b | | Model 8b | |
|-----------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Period 2000-2004 | 0.062*** | 0.008 | -0.010 | 0.007 | 0.002 | 0.007 | -0.008 | 0.007 |
| Period 2005-2009 | 0.078*** | 0.009 | 0.002 | 0.008 | 0.015 | 0.008 | 0.005 | 0.008 |
| Female and 1980-1984 | 0.011* | 0.005 | 0.007 | 0.005 | 0.000 | 0.005 | 0.004 | 0.005 |
| Female and 1985-1989 | 0.040*** | 0.006 | 0.033*** | 0.006 | 0.020*** | 0.005 | 0.027*** | 0.006 |
| Female and 1990-1994 | 0.101*** | 0.007 | 0.083*** | 0.007 | 0.066*** | 0.007 | 0.075*** | 0.007 |
| Female and 1995-1999 | 0.088*** | 0.009 | 0.067*** | 0.009 | 0.047*** | 0.008 | 0.059*** | 0.009 |
| Female and 2000-2004 | 0.090*** | 0.011 | 0.070*** | 0.010 | 0.050*** | 0.010 | 0.061*** | 0.010 |
| Female and 2005-2009 | 0.088*** | 0.013 | 0.062*** | 0.012 | 0.043*** | 0.011 | 0.053*** | 0.012 |
| Ages 30-34 | 0.108*** | 0.003 | 0.094*** | 0.002 | 0.078*** | 0.002 | 0.090*** | 0.002 |
| Ages 35-39 | 0.181*** | 0.004 | 0.158*** | 0.003 | 0.138*** | 0.003 | 0.155*** | 0.003 |
| Ages 40-44 | 0.209*** | 0.005 | 0.177*** | 0.005 | 0.155*** | 0.004 | 0.175*** | 0.004 |
| Ages 45-49 | 0.211*** | 0.006 | 0.176*** | 0.006 | 0.160*** | 0.005 | 0.175*** | 0.006 |
| Ages 50-54 | 0.190*** | 0.007 | 0.150*** | 0.007 | 0.142*** | 0.007 | 0.152*** | 0.007 |
| Ages 55-59 | 0.139*** | 0.009 | 0.095*** | 0.008 | 0.107*** | 0.008 | 0.104*** | 0.008 |
| Female and Ages 30-34 | -0.049*** | 0.004 | -0.041*** | 0.004 | -0.025*** | 0.003 | -0.030*** | 0.004 |
| Female and Ages 35-39 | -0.087*** | 0.005 | -0.071*** | 0.005 | -0.050*** | 0.005 | -0.059*** | 0.005 |
| Female and Ages 40-44 | -0.089*** | 0.007 | -0.073*** | 0.007 | -0.052*** | 0.006 | -0.066*** | 0.006 |
| Female and Ages 45-49 | -0.077*** | 0.009 | -0.061*** | 0.008 | -0.046*** | 0.008 | -0.06*** | 0.008 |
| Female and Ages 50-54 | -0.044*** | 0.011 | -0.029*** | 0.010 | -0.017 | 0.010 | -0.031** | 0.010 |
| Female and Ages 55-59 | -0.002 | 0.013 | 0.015 | 0.012 | 0.022 | 0.011 | 0.013 | 0.012 |

Table 5, continued: Log Hourly Wages by Gender, Age, Period, and Cohort and Including Covariates

| Variable | Model 5a | | Model 5b | | Model 7a | | Model 7b | | Model 8a | | Model 8b | |
|-----------------------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Birth Cohort 1935-1939 | -0.003 | 0.005 | -0.024*** | 0.004 | -0.012** | 0.004 | -0.023*** | 0.004 | -0.023*** | 0.004 | -0.023*** | 0.004 |
| Birth Cohort 1940-1944 | 0.006 | 0.005 | -0.042*** | 0.005 | -0.023*** | 0.004 | -0.039*** | 0.005 | -0.039*** | 0.005 | -0.039*** | 0.005 |
| Birth Cohort 1945-1949 | -0.002 | 0.006 | -0.089*** | 0.005 | -0.059*** | 0.005 | -0.086*** | 0.005 | -0.086*** | 0.005 | -0.086*** | 0.005 |
| Birth Cohort 1950-1954 | -0.055*** | 0.007 | -0.142*** | 0.006 | -0.098*** | 0.006 | -0.137*** | 0.006 | -0.137*** | 0.006 | -0.137*** | 0.006 |
| Birth Cohort 1955-1959 | -0.098*** | 0.008 | -0.164*** | 0.007 | -0.114*** | 0.007 | -0.158*** | 0.007 | -0.158*** | 0.007 | -0.158*** | 0.007 |
| Birth Cohort 1960-1964 | -0.133*** | 0.009 | -0.196*** | 0.009 | -0.138*** | 0.008 | -0.189*** | 0.009 | -0.189*** | 0.009 | -0.189*** | 0.009 |
| Birth Cohort 1965-1969 | -0.138*** | 0.011 | -0.218*** | 0.010 | -0.153*** | 0.009 | -0.210*** | 0.010 | -0.210*** | 0.010 | -0.210*** | 0.010 |
| Birth Cohort 1970-1974 | -0.151*** | 0.012 | -0.239*** | 0.011 | -0.169*** | 0.011 | -0.230*** | 0.011 | -0.230*** | 0.011 | -0.230*** | 0.011 |
| Birth Cohort 1975-1979 | -0.190*** | 0.013 | -0.272*** | 0.013 | -0.201*** | 0.012 | -0.261*** | 0.012 | -0.261*** | 0.012 | -0.261*** | 0.012 |
| Birth Cohort 1980-1984 | -0.227*** | 0.015 | -0.313*** | 0.014 | -0.228*** | 0.013 | -0.294*** | 0.013 | -0.294*** | 0.014 | -0.294*** | 0.014 |
| Female and Birth Cohort 1935-1939 | 0.029*** | 0.007 | 0.028*** | 0.006 | 0.015* | 0.006 | 0.023*** | 0.006 | 0.023*** | 0.006 | 0.023*** | 0.006 |
| Female and Birth Cohort 1940-1944 | 0.070*** | 0.007 | 0.066*** | 0.007 | 0.043*** | 0.006 | 0.058*** | 0.006 | 0.058*** | 0.007 | 0.058*** | 0.007 |
| Female and Birth Cohort 1945-1949 | 0.132*** | 0.008 | 0.133*** | 0.008 | 0.094*** | 0.007 | 0.121*** | 0.007 | 0.121*** | 0.008 | 0.121*** | 0.008 |
| Female and Birth Cohort 1950-1954 | 0.200*** | 0.010 | 0.184*** | 0.009 | 0.133*** | 0.009 | 0.168*** | 0.009 | 0.168*** | 0.009 | 0.168*** | 0.009 |
| Female and Birth Cohort 1955-1959 | 0.236*** | 0.011 | 0.204*** | 0.011 | 0.153*** | 0.010 | 0.188*** | 0.010 | 0.188*** | 0.011 | 0.188*** | 0.011 |
| Female and Birth Cohort 1960-1964 | 0.259*** | 0.013 | 0.222*** | 0.013 | 0.169*** | 0.012 | 0.204*** | 0.012 | 0.204*** | 0.012 | 0.204*** | 0.012 |
| Female and Birth Cohort 1965-1969 | 0.274*** | 0.015 | 0.237*** | 0.014 | 0.178*** | 0.014 | 0.218*** | 0.014 | 0.218*** | 0.014 | 0.218*** | 0.014 |
| Female and Birth Cohort 1970-1974 | 0.310*** | 0.017 | 0.262*** | 0.016 | 0.202*** | 0.015 | 0.240*** | 0.015 | 0.240*** | 0.016 | 0.240*** | 0.016 |
| Female and Birth Cohort 1975-1979 | 0.336*** | 0.019 | 0.276*** | 0.018 | 0.219*** | 0.017 | 0.252*** | 0.017 | 0.252*** | 0.018 | 0.252*** | 0.018 |
| Female and Birth Cohort 1980-1984 | 0.331*** | 0.021 | 0.276*** | 0.020 | 0.218*** | 0.019 | 0.249*** | 0.019 | 0.249*** | 0.020 | 0.249*** | 0.020 |

Table 5, continued: Log Hourly Wages by Gender, Age, Period, and Cohort and Including Covariates

| Variable | Model 5b | | Model 6b | | Model 7b | | Model 8b | |
|--------------------------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Asian American/Pacific Islander | 0.020*** | 0.003 | -0.051*** | 0.003 | -0.014*** | 0.003 | -0.055*** | 0.003 |
| African American/Black | -0.196*** | 0.002 | -0.124*** | 0.001 | -0.087*** | 0.001 | -0.132*** | 0.001 |
| Latino | -0.331*** | 0.002 | -0.187*** | 0.002 | -0.124*** | 0.002 | -0.193*** | 0.002 |
| Native American | -0.233*** | 0.007 | -0.146*** | 0.007 | -0.124*** | 0.006 | -0.149*** | 0.007 |
| Other Race | -0.069*** | 0.005 | -0.107*** | 0.005 | -0.067*** | 0.005 | -0.110*** | 0.005 |
| Child Less Than 5 Years in Household | 0.042*** | 0.001 | 0.024*** | 0.001 | 0.028*** | 0.001 | 0.030*** | 0.001 |
| Widowed/Divorced/Separated | -0.111*** | 0.001 | -0.073*** | 0.001 | -0.059*** | 0.001 | -0.085*** | 0.001 |
| Single | -0.112*** | 0.001 | -0.142*** | 0.001 | -0.104*** | 0.001 | -0.143*** | 0.001 |
| Bachelor's Degree or Higher | | | 0.493*** | 0.001 | 0.325*** | 0.001 | 0.486*** | 0.001 |
| Some College | | | 0.176*** | 0.001 | 0.113*** | 0.001 | 0.176*** | 0.001 |
| No High School Diploma | | | -0.11*** | 0.002 | -0.059*** | 0.001 | -0.106*** | 0.002 |
| Professional Occupations | | | | | 0.128*** | 0.002 | | |
| Farming Occupations | | | | | -0.066*** | 0.017 | | |
| Managerial Occupations | | | | | 0.172*** | 0.002 | | |
| Clerical Occupations | | | | | -0.096*** | 0.002 | | |
| Craft Worker Occupations | | | | | -0.028*** | 0.002 | | |
| Operator Occupations | | | | | -0.222*** | 0.002 | | |
| Service Occupations | | | | | -0.241*** | 0.002 | | |
| Laborer Occupations | | | | | -0.299*** | 0.003 | | |
| Retail Trade Industries | | | | | -0.327*** | 0.002 | | |

Table 5, continued: Log Hourly Wages by Gender, Age, Period, and Cohort and Including Covariates

| Variable | Model 5b | | Model 6b | | Model 7b | | Model 8b | |
|--|-----------|-------|----------|-------|-----------|-------|-----------|-------|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Agriculture/Fishing/Forestry Industries | | | | | -0.414*** | 0.004 | | |
| Mining Industries | | | | | 0.126*** | 0.005 | | |
| Construction Industries | | | | | -0.067*** | 0.002 | | |
| Transportation Industries | | | | | 0.013*** | 0.002 | | |
| Telecommunications/Utilities/ Sanitation Industries | | | | | 0.139*** | 0.003 | | |
| Wholesale Trade Industries | | | | | -0.078*** | 0.003 | | |
| Finance/Insurance/Real Estate Industries | | | | | -0.027*** | 0.002 | | |
| Business Services Industries | | | | | -0.129*** | 0.002 | | |
| Personal Services Industries | | | | | -0.334*** | 0.003 | | |
| Recreational Services Industries | | | | | -0.182*** | 0.004 | | |
| Professional Services Industries | | | | | -0.178*** | 0.002 | | |
| Public Administration Industries | | | | | 0.046*** | 0.002 | | |
| Part-Time Employment | | | | | -0.132*** | 0.001 | -0.242*** | 0.001 |
| Constant | 2.765*** | 0.006 | 2.733*** | 0.006 | 2.857*** | 0.006 | 2.740*** | 0.006 |
| N | 1,811,198 | | | | | | | |

Notes: This table is my replication of Table A3 in Campbell and Pearlman's paper. The dependent variable is the log of hourly wages. *= $p < 0.05$; **= $p < 0.01$; ***= $p < 0.001$

| Table 6: Proportion of Period Effects and Cohort Effects on the Gender Wage Gap Explained by Covariates | | |
|---|------------------------------------|-----------------------|
| | This Author | Campbell and Pearlman |
| Period Effect | Proportion Explained by Covariates | |
| Female and 1980-1984 | 0.72 | 0.87 |
| Female and 1985-1989 | 0.42 | 0.57 |
| Female and 1990-1994 | 0.32 | 0.38 |
| Female and 1995-1999 | 0.37 | 0.48 |
| Female and 2000-2004 | 0.35 | 0.48 |
| Female and 2005-2009 | 0.42 | 0.53 |
| Cohort Effect | Proportion Explained by Covariates | |
| Female and Birth Cohort 1935-1939 | 0.18 | 0.47 |
| Female and Birth Cohort 1940-1944 | 0.17 | 0.37 |
| Female and Birth Cohort 1945-1949 | 0.09 | 0.33 |
| Female and Birth Cohort 1950-1954 | 0.18 | 0.40 |
| Female and Birth Cohort 1955-1959 | 0.24 | 0.44 |
| Female and Birth Cohort 1960-1964 | 0.25 | 0.45 |
| Female and Birth Cohort 1965-1969 | 0.25 | 0.45 |
| Female and Birth Cohort 1970-1974 | 0.27 | 0.45 |
| Female and Birth Cohort 1975-1979 | 0.30 | 0.46 |
| Female and Birth Cohort 1980-1984 | 0.31 | 0.47 |
| N | 1,811,198 | 1,860,126 |
| <p>Notes: This table is my replication of Table A4 in Campbell and Pearlman's paper. I calculate the period effect values by dividing the <i>female x period</i> interactions I report in Model 8b by the <i>female x period</i> interactions I report in Model 4b and subtracting the result from 1. I calculate the cohort effect values by dividing the <i>female x cohort</i> interactions I report in Model 8b by the <i>female x cohort</i> interactions I report in Model 4b and subtracting the result from 1.</p> | | |

Table 7: Log Hourly Wages by Gender, Age, Period, Cohort, and State

| Variable | Model 9b | |
|----------------------|-----------|-------|
| | Coef. | S.E. |
| Female | -0.524*** | 0.032 |
| Period 1980-1984 | -0.113*** | 0.027 |
| Period 1985-1989 | -0.104*** | 0.026 |
| Period 1990-1994 | -0.164*** | 0.026 |
| Period 1995-1999 | -0.098*** | 0.026 |
| Period 2000-2004 | 0.008 | 0.025 |
| Period 2005-2009 | -0.050* | 0.025 |
| Period 2010-2014 | -0.077** | 0.025 |
| Female and 1980-1984 | 0.030 | 0.040 |
| Female and 1985-1989 | 0.085* | 0.039 |
| Female and 1990-1994 | 0.200*** | 0.038 |
| Female and 1995-1999 | 0.219*** | 0.038 |
| Female and 2000-2004 | 0.215*** | 0.037 |
| Female and 2005-2009 | 0.259*** | 0.037 |
| Female and 2010-2014 | 0.287*** | 0.037 |
| Constant | 2.703*** | 0.021 |
| N | 2,134,694 | |

Notes: Although coefficients are not reported here, this model includes state fixed effects and state interactions with each of the independent variables listed here. Alabama is the reference category. The dependent variable is the log of hourly wages. *= $p < 0.05$; **= $p < 0.01$; ***= $p < 0.001$

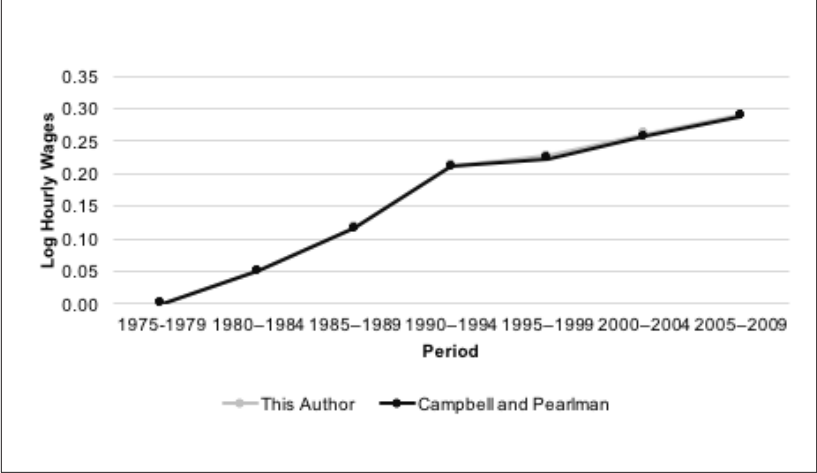
Table 8: Proportion of Period Effects on the Gender Wage Gap Explained by State-Level Variation

| Period Effect | Proportion Explained by State-Level Variation |
|----------------------|---|
| Female and 1980-1984 | 0.41 |
| Female and 1985-1989 | 0.28 |
| Female and 1990-1994 | 0.06 |
| Female and 1995-1999 | 0.04 |
| Female and 2000-2004 | 0.18 |
| Female and 2005-2009 | 0.11 |

Notes: These proportions were calculated by dividing the *female x period* interactions I report in Model 9b by the *female x period* interactions I report in Model 1b and subtracting the result from 1.

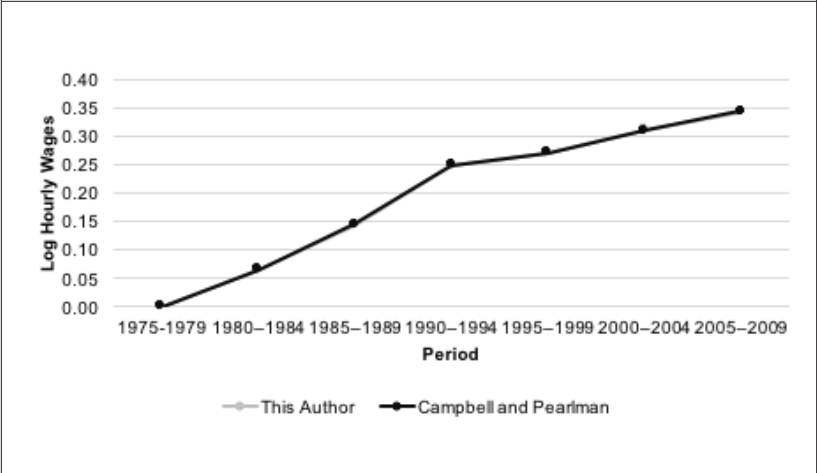
VI. Appendix 2: Figures

Figure 1: Growth in Female Wages (Relative to Male Wages), Not Controlling for Age or Cohort, 1975-2009



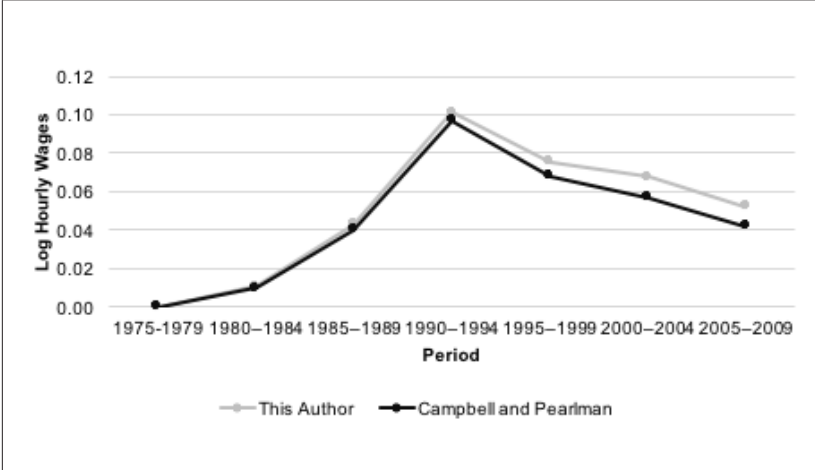
Notes: This graph plots the coefficients from the *female x period* interactions I report in Model 1b and Campbell and Pearlman report in Model 1 of their paper.

Figure 2: Growth in Female Wages (Relative to Male Wages), Controlling for Age But Not Cohort, 1975-2009



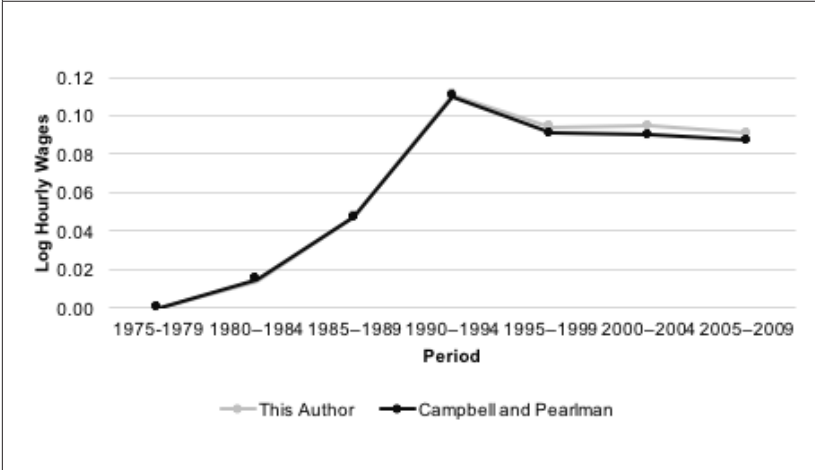
Notes: This graph plots the coefficients from the *female x period* interactions I report in Model 2b and Campbell and Pearlman report in Model 2 of their paper.

Figure 3: Growth in Female Wages (Relative to Male Wages), Controlling for Cohort But Not Age, 1975-2009



Notes: This graph plots the coefficients from the *female x period* interactions I report in Model 3b and Campbell and Pearlman report in Model 3 of their paper.

Figure 4: Growth in Female Wages (Relative to Male Wages), Controlling for Cohort and Age, 1975-2009



Notes: This graph plots the coefficients from the *female x period* interactions I report in Model 4b and Campbell and Pearlman report in Model 4 of their paper.

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How the Supreme Court Made the Freedom of Speech More Free

Monica Coscia

Abstract: This paper argues that the United States Constitution's First Amendment guarantee of free speech is imperative to maintaining a free society, even if some members of that society find certain speech disagreeable or offensive. It contends that federal and state laws must obey the First Amendment's guarantee of content neutrality, or acceptance of all viewpoints, in order to be considered constitutional. By delineating the progression of Supreme Court precedent regarding controversial speech through four landmark cases, this paper argues that the Court's jurisprudence over the past half-century justly moved in a constitutional direction, because modern legal interpretation of the First Amendment has made free speech even freer than it was at the time of the First Amendment's ratification. Finally, this discussion asserts that while the modern view of free speech may not align with the Founders' opinions, it achieves their ultimate vision of an adaptable Constitution and a tolerant, open society.

"If there is a bedrock principle underlying the First Amendment," Justice Brennan declared in *Texas v. Johnson*, "it is that the government may not prohibit the expression of an idea simply because society finds the idea itself offensive or disagreeable."¹ This statement succinctly captures the rationale behind the freedom of speech that the United States Constitution cherishes, and is consistent with the Bill of Rights' purpose to secure certain fundamental liberties from government infringement. Free speech is central to a tolerant, free society, in that it promotes the unfettered circulation of ideas, opinions, and ideologies. As Justice Holmes asserted in his *Abrams v. United States* dissent, the First Amendment's protection of free speech necessitates a free marketplace of ideas, through which the "competition of the market" filters opinions based on their truth value.²

Since the government has a constitutional responsibility to refrain from interfering with an individual's right to express his or her beliefs, it cannot pick and choose the opinions that are prohibited and those that are allowed. The

1 *Texas v. Johnson*, 491 U.S. 397 (1989).

2 *Abrams v. United States*, 250 U.S. 616 (1919).

freedom to speak one's mind without governmental intervention relies on the principle that "no official, high or petty, can prescribe what shall be orthodox in...matters of opinion," as Justice Jackson held in *West Virginia v. Barnette*.³ Differentiating among viewpoints and defining some as prohibited makes for an intolerant, oppressive society in which those who disagree with the government are not allowed to use their voices. In his seminal work *On Liberty*, liberal philosopher John Stuart Mill argued that such censorship is tyrannical. It presumes that the government is the infallible judge of what is right and acceptable. In their decisive break with tyranny, the Framers of the Constitution channeled Mill's doctrine, purposefully protecting the freedom of speech from "the vicissitudes of political controversy."⁴

Over the last half-century, the Supreme Court of the United States has adopted a broader standard of what speech is protected under the First Amendment in cases such as *Brandenburg v. Ohio*, *Texas v. Johnson*, *R.A.V. v. St. Paul*, and *Snyder v. Phelps*. In these four landmark rulings, the Court held that various instances of controversial political and religious speech and expressive conduct receive First Amendment protection. Although the Supreme Court has ruled innumerable times on the freedom of speech, these cases are groundbreaking in that they represent the Supreme Court's authorization of four major categories of speech: political, symbolic, religious, and protest. In a remarkable instance of judicial incrementalism, the Court gradually expanded the scope of the First Amendment by striking down laws that limited speech based on its content, delivery, and intent. Because a decrease in restrictions translates to an increase in freedom, the Supreme Court effectively moved judicial doctrine toward the First Amendment's unqualified guarantee of free speech. An analysis of these four cases will ultimately prove that the high court employed just and prudent reasoning in its decisions, as they advanced the freedom of speech.

The dissenting justices in these cases opined that the majority had gone off the deep-end in protecting speech that was, in their view, "highly damaging" through deciding these four cases. However, in each of these cases, those arguing for the government's prohibition of the speech in question did not prove that the speech directly and immediately caused legitimate harm to another individual or group. If the freedom of speech is truly free, the government cannot prohibit it—except in rare occasions in which "...the incidence of the evil apprehended is so imminent that it may befall before there is opportunity for full discussion," as Justice Brandeis argued in *Whitney v. California*.⁵

3 *West Virginia v. Barnette*, 319 U.S. 624 (1943).

4 Ibid.

5 *Whitney v. California*, 274 U.S. 357 (1927).

Of course, in order to fulfill its duty to protect the general welfare, the government must maintain a right to prohibit speech that will almost surely bring about legitimate damage, such as Justice Holmes' notorious example of yelling "Fire!" in a crowded theater.⁶ The government's adoption of a standard other than the protection of public safety in limiting the freedom of speech, however, is a violation of the First Amendment's requirement that laws be content-neutral, or accepting of all viewpoints. It follows that the government cannot outlaw speech just because it offends another individual, as doing so would create a right to be free from offense, a highly subjective standard that would prohibit a great deal of controversial speech.

Practically speaking, the protection of free speech ultimately advances public safety. The potential for danger is greater if the government prohibits radical speech rather than allowing it, because suppressing thought and opinion "breeds repression; that repression breeds hate; that hate menaces stable government."⁷ In other words, the freedom of speech often precludes the need for violent extremism and rioting, which can engender destruction that is objectively more harmful to society than peaceful protest. The free expression of even the most prejudiced and controversial opinions serves the social purpose of avoiding violence: "It lets off steam; it allows natural tensions to express themselves incrementally; it can siphon off conflict through words, rather than actions."⁸ As Justice Jackson articulated, governments that eliminate dissent must face the danger with which angry, suppressed dissenters retaliate.⁹

The Supreme Court applied the logic and principles explored above to protect controversial speech in four epochal cases from the last few decades. First, the Court's decision in *Brandenburg v. Ohio* (1969) overturned the conviction of a Ku Klux Klan leader for allegedly advocating violence in a rally speech, during which he suggested that his organization might need to take action if the government continued to deny white supremacy through the enactment of civil rights laws. The Supreme Court correctly recognized that *Brandenburg's* advocative speech did not directly spawn "imminent lawless action," nor was it "likely to incite or produce such action."¹⁰ This decision declared unconstitutional the Ohio law that prohibited the advocacy, teaching, and publishing of material that encourages violence. Because advocacy like *Brandenburg's* neither directly

6 *Schenck v. United States*, 249 U.S. 47 (1919).

7 Ibid.

8 Andrew Sullivan, "What's So Bad About Hate?" *The New York Times*, September 26, 1999.

9 *Barnette*.

10 *Brandenburg v. Ohio*, 395 U.S. 444 (1969).

nor tangibly threatens public safety, the Supreme Court rightly decided that this speech was protected under the First Amendment.

Although the appellate court affirmed the conviction and the law on the grounds that advocacy alone has the potential to threaten violence, the Supreme Court drew the line between protected advocative speech and unprotected speech that actually incites violence. The Court recognized that anti-advocacy laws unconstitutionally equate the mere advocacy of a crime with committing the crime itself. The Ohio law punished speech for effects that it neither produced nor was likely to produce. Justice Douglas articulated that the only prosecutable speech is that which is “inseparable” from “the acts actually caused.” Except for those rare instances, it is unconstitutional for the government “to invade that sanctuary of belief and conscience.”¹¹

In *Texas v. Johnson* (1989), the Supreme Court overturned a conviction for burning the American flag as a form of public protest, and expanded protected speech under the First Amendment. It may not seem immediately evident why the Court would consider the action of burning a flag as an issue of free speech. However, as Justice Brennan explains, certain expressive conduct falls under the protection of the First Amendment. Conduct that is intended “to convey a particularized message” and is likely to do so is speech for the purpose of the First Amendment because of its communicative value.¹² The Court held that burning the American flag was expressive conduct because it clearly conveyed a political statement. Because burning the flag was expressive conduct protected under the First Amendment and did not create legitimate harm to other individuals, the Supreme Court justly decided *Texas v. Johnson*. The Court fairly deemed the law prohibiting desecration of the American flag unconstitutional. The law’s establishment of an orthodox belief and compulsory reverence of a national symbol are the very contradiction of the content neutrality guaranteed by the First Amendment.

The dissenting justices in *Texas* argued that it was a legitimate exercise of state police power to declare the protection of a symbol of national unity and that Johnson’s burning of the American flag “had a tendency to incite a breach of the peace.”¹³ However, the flag burning did not disturb the peace, threaten to disturb the peace, or directly insult a particular individual. The Court, therefore, justly recognized that it is unconstitutional to criminalize the potentially violent effects of free speech if there is no indication that the speech will provoke violence. The dissent also asserted that allowing flag burning symbolizes the tarnishing of American values. However, Justice Brennan pointed out that one

11 *Brandenburg v. Ohio*, 395 U.S. 444 (1969).

12 *Texas*.

13 *Ibid.*

of the principles that the American flag represents is the freedom of speech itself, so the *Texas v. Johnson* decision actually strengthened the flag's cherished place in American society.¹⁴

Four years later, in *R.A.V. v. St. Paul* (1992), the Supreme Court declared a Minneapolis law prohibiting the erection of symbols that spawn anger "on the basis of race, color, creed, religion, or gender" on public or private property unconstitutional.¹⁵ The Court overturned the conviction of white teenagers who burned a cross on the front lawn of the only African American family in their neighborhood. Justice Scalia argued that a law barring the use of certain "fighting words" was unconstitutional because it "prohibits otherwise permitted speech solely on the basis of the subjects the speech addresses."¹⁶ In other words, the law in question selectively forbade speech motivated by racial, religious, or gender discrimination solely on the basis of its content. This is a blatant violation of the First Amendment's guarantee of content neutrality, as it infringes upon distinguishable categories of speech, so the Court justly decided *R.A.V. v. St. Paul*. Justice Scalia clarified that the government may prohibit speech "because of the action it entails, but not because of the ideas it expresses."¹⁷ In practice, this means that the government can ban defamation because it directly and tangibly harms another individual, but the government cannot ban certain speech topics without discriminating against certain viewpoints and thus violating the First Amendment. This law unconstitutionally allowed the expression of hostility "on the basis of political affiliation, union membership, or homosexuality," but not race, religion, or gender, which is an arbitrary distinction.¹⁸

The dissent countered that the law's purpose was to protect certain minority groups from injuries caused by offensive symbols, and that it was therefore within Minneapolis's police powers to protect minority groups from risks, harms, and fear. In other words, the dissent argued that the law declares that particular classes of individuals have a right to be free from threats, and this right trumps one's explicit constitutional right to free speech. Justice Scalia maintained that the only thing distinguishing the injury caused by prohibited fighting words from injury caused by permissible fighting words was the intent of the speaker. The First Amendment protects all ideas, not just the ones that the government deems acceptable.

14 *Texas*.

15 *R.A.V. v. St. Paul*, 505 U.S. 377 (1992).

16 *Ibid.*

17 *Ibid.*

18 *Ibid.*

Finally, in *Snyder v. Phelps* (2011), the Supreme Court upheld the right of the Westboro Baptist Church to protest near the funeral of a soldier who was killed in Iraq. The picketers held placards arguing that soldiers' deaths in the war were God's punishment for immoral American society, that homosexuality was a sin, and that Catholicism was sacrilegious. Although the Church expressed controversial ideas that many people, including the Snyder family, found painfully offensive, Justice Roberts argued that their speech was protected by the First Amendment—the Church's speech concerned public affairs and was expressed in the public forum of a sidewalk. He pointed out that the Church's audience was the general public and that its members did not intend to offend particular private individuals. Although the speech may have been disturbing to some, the Supreme Court rightly concluded that the public discussion of public affairs is “more than self-expression; it is the essence of self-government.”¹⁹

Had the Supreme Court ruled in favor of Snyder, it would have sanctioned the prohibition of speech based on its content, which is contrary to the First Amendment's guarantee of content neutrality. The opinion states that “Westboro's picketing turned on the content and viewpoint of the message conveyed, rather than any interference with the funeral itself.”²⁰ Because the picketers were peaceful, protested a considerable distance away from the funeral, and refrained from “shouting, profanity, and violence,” their speech was rightly protected under the First Amendment. Justice Roberts cited the practical concern for allowing even “outrageous” speech “breathing room,” recognizing that forcing contentious speech underground would likely radicalize the speaker and spawn legitimate violence.²¹ Justice Alito's dissent, on the other hand, argued that the First Amendment does not protect the intentional infliction of emotional distress, especially at a time of emotional sensitivity. But this argument creates a right to be free from offense that trumps the First Amendment guarantee of free speech, which is unconstitutional on its face. Additionally, as the opinion points out, no evidence in the record proved that the Westboro Baptist Church intentionally or specifically aimed their protest at the Snyder family. Although the picketing was jarring, the Supreme Court appropriately decided that even strikingly controversial speech is protected under the First Amendment—as long as it does not directly incite violence.

Because the Founders enshrined the freedom of speech in their very first amendment to the United States Constitution, we know that they highly valued the protection of expression from the arbitrariness of governmental authorities. The fundamental purpose of the Bill of Rights was to protect the citizens

19 *Snyder v. Phelps*, 131 S. Ct. 1207 (2011).

20 Ibid.

21 Ibid.

of the newborn United States from the abuses they had endured under the monarchy from which they had just declared independence. By codifying freedom of speech, the Founders signaled their decisive break with Great Britain's use of "prior restraint," or restriction of opinions before they were spoken or published.²²

Although the Founders made a point to protect the freedom of speech, they also believed that this right was not absolute. John Adams believed that false speech should not receive protection under the First Amendment. Benjamin Franklin stated that speech that defames or affronts another individual should not be considered protected, and that he would exchange his "Liberty of Abusing others for the Privilege of not being abused myself"—in other words, claiming a right to be free from offense.²³ During the Founding era, the First Amendment only applied to responsible and truthful speech.

Although it is impossible to determine whether the Founders would have approved of modern Supreme Court decisions, and although the Founders split over the issue of free speech themselves, they most likely would have disagreed with the outcomes of these cases. In light of the Founders' support of prohibitions on seditious libel (publishing information that brings the government into contempt), blasphemy (speech that insults religion), and speech that had a "bad tendency" (speech that supports illegal activity), they probably would have disapproved of speech that might hold the government or religion in contempt—such as advocating for violence against the government, burning the American flag, burning a cross, or protesting the United States' involvement in war.²⁴

Several former and current Supreme Court justices and many American civilians believe that judges should always consider the original intent of the Founders when interpreting the Constitution. Justice Meese argued that the Founders deliberately chose every word of the Constitution, so "[a]ny true approach to constitutional interpretation must respect the document in all its parts."²⁵ He believed that since so much about the Founders' opinions is known, justices must use those original intentions to resolve the Constitution's textual ambiguities. However, James Madison, a Founder himself, felt that judges should not limit themselves to the Constitution's original intent, but rather consider the

22 Howard Gillman, Mark A. Graber, and Keith E. Wittington, *American Constitutionalism: Volume II: Rights and Liberties* (Oxford: Oxford University Press, 2012), 52.

23 *Id.*, 121.

24 *Id.*, 52.

25 Philip Shenon, "Meese says some judges practice 'chameleon jurisprudence,'" *The New York Times*, November 16, 1985.

popular understanding of the Constitution, to make decisions.²⁶ The fact that the Founders were divided over not only the content of constitutional provisions, but also how future generations should interpret them makes the precise original intent virtually impossible to know. But this does not mean that the Founders' opinions do not matter. One should still aim to espouse the spirit of the Constitution to secure individual liberties and maintain a limited government—which expanding the protection of free speech achieves—but adopting the exact beliefs of the Founders fails to take modern reality into account.

The Founders intended the Constitution to adapt to modern standards. Justice Brennan has argued that justices should consider the transformative purpose of the Constitution and interpret the text in light of modern circumstances, while still paying homage to the spirit of the Founders' beliefs: "The Framers discerned fundamental principles through struggles against particular malefactions of the Crown; the struggle shapes the particular contours of the articulated principles. But our acceptance of the fundamental principles has not and should not bind us to those precise, at times anachronistic, contours."²⁷ Because the protection of the freedom of speech was among those fundamental principles, the Supreme Court's broadening of free speech over the last half-century achieves the Founders' ultimate mission, despite the impact of the four decisions discussed here.

Since the Founding era, the Supreme Court has progressed from prohibiting speech carrying a mere "bad tendency," to banning speech that creates a "clear and present danger," to only banning speech if it "incites imminent lawless action." The modern interpretation of free speech has fewer restrictions than that of the founding era. Therefore, I argue that the Supreme Court's current outlook on free speech aligns more closely with the text of the First Amendment than the Founders' own opinions did. Simply put, the Supreme Court's recent expansion of protected expression has made the First Amendment's guarantee of freedom of speech more free.

26 Jack N. Rakove, "Mr. Meese, Meet Mr. Madison," *The Atlantic*, December 1986.

27 Justice William J. Brennan, Jr., "Speech given at the Text and Teaching Symposium, Georgetown University," *PBS*, accessed 29 June 2016, http://www.pbs.org/wnet/supremecourt/democracy/sources_document7.html.

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Innocence Lost: The Impact of Armed Conflict on Colombian Children

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Abstract: Young children are often caught in the crosshairs when armed conflict occurs. They are also disproportionately affected by the various forms of traumatic stress resulting from exposure to, participation in, and the personal losses associated with war. In the Colombian armed conflict, children are victims of: (a) seemingly random deaths and disappearances of family members and significant caregivers; (b) disruptions and physical displacement of stable home/community settings; and (c) forced recruitment and exploitation by armed groups. Although a growing body of trauma literature documents the plight of child soldiers in other parts of the world, little is revealed about child soldiers in Colombia. This paper addresses that deficit by: reviewing literature on the context and impacts of traumatic stress on children in war-torn countries; discussing the social, political and economic contexts for the origins of the Colombian situation; examining the actual extent and direct impact of child soldiering in Colombia; and assessing the various efforts and programs that have been attempted in response to the problem. The authors conclude by providing specific recommendations for models and approaches to help restore peace and prosperity to Colombia's child soldiers, and issue a call to action to compel the Colombian government, the international community, and other humanitarian focused non-governmental organizations to intervene.

The damage goes far beyond the immediate pain of loss. Where there was torture, there are walking, wounded victims. Where there were killings, or wholesale massacres, there are often witnesses to the carnage, and family members too terrified to grieve fully. Where there were persons disappeared, there are loved ones desperate for information. Where there were years of unspoken pain and enforced silence, there may be a pervasive, debilitating fear and, when the repression ends, a need to slowly learn to trust the government, the police, and armed forces, and to gain confidence in the freedom to speak freely and mourn openly (Hayner, 2011, p. 3).

The violence, personal loss, and extreme traumatic stress associated with living in a war zone disproportionately impact the lives of young children. The 2007

United Nations Children's Fund (UNICEF) report states that, during the last decade, more than 6 million children were injured, 2 million lost their lives, 13 million became victims of displacement, 10 million became refugees, and more than 10 million were used in combat and other warfare activities. In the intervening years since the report's publication, the incidence of armed conflict has continued to escalate, and the horrific impact on the world's children mounts. This paper examines the impact years of civil war have had on the well-being of children in Colombia, focusing specifically on those forcefully enlisted as child soldiers. The following sections review available literature, provide historical/cultural/political context for the crisis, and offer recommendations of best practices for helping children heal and recover from war-related experiences.

Global Prevalence and Common Features of Child Soldiers

Nearly two decades ago, Graca Machel (1996) brought the harmful impacts of war on children to the public's attention. In her report, Machel describes how many children are exposed to or involved in warfare because they are forcibly recruited or conscripted by illegal groups, while others become involved because they have no other options in the context of extreme poverty and social inequalities in their communities. Betancourt, Borisova, Williams, et al. (2013) describe how children used as combatants are forced to play the roles of cooks, domestics, medics, laborers, spies, and sex slaves, as well as active soldiers. Johannessen and Holgersen (2013) report that young children have also been forced to spy and make and/or disarm landmines. In 1996, Machel documented how children are often used as "war shields" during confrontations with opposing factions.

Child soldiers share similar characteristics worldwide. Invariably, child soldiers come from very low socio-economic backgrounds, and are usually from rural areas where there is little-to-no formalized government presence. Poverty and political conflict create the social inequalities many of these children encounter. A lack of government protection and the absence of social support systems cause them to confront the inadequacies of existing societal organizations and often forces them to join with military groups for protection and provision of basic needs. Furthermore, militarized groups use propaganda to persuade towns and communities to offer up their own children in return for financial and social support and safety.

Section 6 of *The Paris Principles: Principles and Guidelines on Children Associated with Armed Forces or Armed Groups* (2007) states:

While war itself is a major determinant, children may view enlistment as their best option for survival for themselves, their families, or communities in contexts of extreme poverty, violence, social inequality,

or injustice. Gender inequalities, discrimination and violence are frequently exacerbated in times of armed conflict (p. 16).

However, the price children pay for this food, shelter, and ‘protection’ is in additional poverty and hunger, as well as exposure to killings and rape. Militants also coerce the children into raping and killing others in order to prove loyalty and survive. Many of these children become both victims and perpetrators.

Disrupted Development

Continued exposure to war and conflict affects children’s psychological, emotional and physical development. Mental health problems are common among child soldiers, specifically post-traumatic stress disorder, anxiety, depression, aggressive behavior, and social difficulties (McMullen, O’Callaghan, Shannon, Black, & Eakin, 2013). These problems are related to their length of time in captivity and also have psychological repercussions long after children leave the militarized groups to reintegrate into civilian society. Upon attempting to reintegrate into society, ex-child combatants face rejection, stigma, discrimination, and prejudice, which subsequently affects their sense of self and their ability to move past traumatic experiences (Jordans, Komproe, Tol, Ndayisaba, & Nisabwe, 2012).

Young soldiers are conditioned to kill at critical developmental stages when most children should develop basic interpersonal skills, moral sensibility, and basic educational abilities (Courtois & Ford, 2009; Druba, 2002). Most suffer from lack of health care, are frequently truant or have limited/no access to educational opportunities, and experience long periods of food deprivation. As such, child soldiers become socialized, but not by the legitimate social organizations and structures that other children experience. Instead, they are socialized by militarized groups which take on the roles and influence of more conventional social institutions. In this context, children are socialized to accept guns, violence, threats, and other forms of coercive power as ordinary ways to achieve goals.

Child soldiers’ identities are fragile structures shaped by violence and fear (Cifuentes, 2008). Their captors carry out strategic activities with the primary purpose of psychologically intimidating and destabilizing children and youth—activities like kidnapping, beatings, and cannibalism of their own victims (Wessells, 1997). Fear and unquestioned obedience are brutally enforced with regularity to ensure children’s continued involvement with militarized groups. Drugs are often provided to child soldiers to promote a sense of invincibility and prevent pain or fear from interfering while performing warfare activities.

Often, child soldiers are preferred to adult recruits due to their lack of moral and emotional development. Betancourt (2011) emphasizes that child

soldiers' "moral disengagement" allows them to behave in inhuman "ways while sustaining a view of themselves as moral" (p. 277). Children also serve as recruiters of other children—their peers—in joining the ranks of the illegal armed organizations (Spellings, 2008).

Colombia's Prolonged History of Internal Strife

Colombia has been engaged in almost continuous war since it battled for independence from Spain in the early 1800s. At the end of the 19th century, the country found itself once again in the midst of a war, this time a civil war, the so-called "La Guerra de los Mil Dias". Since then, violence between political parties has continued and, more recently, drug trafficking has transformed Colombian society to the point where peace is non-existent (Jimenez et al., 2009). Colombia has been immersed in ongoing internal wars or armed conflicts that have depleted the country socially, financially, and politically. Some historians trace the roots of Colombia's recent internal conflicts to the 1930s and 1940s, when its two most influential political groups, the Liberals and the Conservatives, were fighting each other to stay in power (Amnesty International, 2008). By 1957, the two groups agreed to end their conflict and formed the *Frente Nacional* (National Front) in order to bring about peace, reestablish social order, and create a space for political stability.

The National Front prioritized protecting the rights of the disenfranchised. But, by the 1960s, the National Front had lost its credibility. Smaller factions formed insurgent organizations, including the Revolutionary Armed Forces of Colombia (FARC), the People's Liberation Army (EPL), and the National Liberation Army (ELN). By the 1970s, two other guerrilla groups were created, the Movement M-19, and the Revolutionary Workers Party (Grupo de Memoria Historica, 2013).

By the 1970s, the central government, recognizing its inability to respond to the armed insurgency groups, decided to explicitly either encourage or turn a blind eye to the creation of "civic groups," commonly known as "self-defense groups" or "Autodefensas Unidas de Colombia (AUC)". These organizations were de facto paramilitary groups. However, under the umbrella of the AUC, they were presented to the international community as merely civic groups whose purpose was self-protection of local communities. According to Grupo de Memoria Historica (2013), between "1958 and 2012 at least 220,000 Colombians lost their lives" (p. 31) due to the armed conflict between FARC and the Colombian military and paramilitary groups.

All insurgent and paramilitary groups throughout Colombia's history have recruited children as soldiers. By some estimates, approximately 40% of ELN, FARC, and other various paramilitary groups' members are children (Springer,

2013). Some children who belong to the paramilitary groups are paid, while those in guerilla groups never are.

Government military forces have also been implicated in the extrajudicial deaths of Colombian children. Numerous international organizations (i.e., Amnesty International, 2008; Human Rights Watch, 2003 and 2010; Springer, 2013) have reported that children may be killed by members of the military regardless of their allegiance to or participation in armed groups. A number of international funders provide the Colombian government with monetary incentives to reward members of the army or police who can provide proof of the death of an “insurgent” (for example, a dead body). More than 50% of these dead bodies have been children (Amnesty International, 2008; Human Rights Watch, 2003 and 2010; Springer, 2013). Colombia’s army also implemented a program called “Hawks Group,” in which military training and uniforms are provided to children ages 8 to 16, which naturally contributes to the involvement of children in military groups on both sides of the fight.

Due to the complex intersectionality of these factors, it is difficult to clearly delineate the various actors and priorities that define Colombia’s “civil war.” But the evidence is undeniable: children are paying the greatest price.

Massive Displacement and Child Soldiers in Colombia

Internal Displacement Global Report (2016) states that Colombia is among the eight countries with the highest rate of internally displaced people (IDP). Around 8.3 million people are internally displaced due to the armed conflict that has immersed the country for more than five decades (Registro Unico Victimas, 2017). Close to 50% of the Colombian IDP population are children, compared to 25% in the world IDP population (Flink, Restrepo, Blanco, Ortegón, Enriquez, Beirens & Raat, 2013). Reportedly, 59% of IDP children experience displacement again every three years (Springer 2012).

Displacement and child recruitment are strongly correlated. Every year, thousands of rural Colombian families leave their homes out of fear that their children may be recruited by military groups. While many families are able to successfully leave their towns, their children are often captured and taken away while trying to escape. Displaced families are usually forced to migrate to nearby big cities where illegal military organizations provide the “governing” force. Children are forced to participate in armed conflict to protect themselves and their families. These children have typically witnessed the murder of at least one of their family members and been exposed to landmines, torture, sexual, and physical abuse multiple times (Flink et al., 2013).

Internally displaced children become easy targets for armed organizations. Because they have been exposed to complex traumatic situations, their identities

are fragile. They are prone to violence as a response to their emotional distress. Further, displaced children do not have secure attachments to help promote empathy, and they often do not forge healthy connections in their new communities before being displaced again. Official tracking of displaced children becomes virtually impossible when they are often forced to leave their homes at any moment; therefore, neither their teachers nor community organizations know what happens to them. If they are recruited into combat service, few community members actually notice; their families are too terrified to approach the legal authorities due to constant death threats, or sometimes because they felt forced to give their children away due to financial hardship.

Poverty, Patriarchy, and Exposure to Violence

Poverty has caused the Colombian armed conflict, and, in a vicious cycle, the armed conflict has in turn caused poverty. The Economic Commission for Latin America and the Caribbean (ECLAC, 2010) reported in 2010 that 15.6% of Colombian children live below the country's poverty line. Other estimates are as high as 38.5%, with 32.3% living in extreme conditions of indigence. The 2010 ECLAC report also indicates that 55.9% of Colombian children (under age 17) live in total poverty, and 32.3% are considered indigent.

Child soldiers are fully aware of the link between poverty and their lack of social value. Springer (2012) interviewed Colombian child soldiers. One child encapsulated their experience, stating, "Cuando uno es pobre no es nada para nadie (p. 6)," which translated means, "When one is poor, one is considered nothing." This awareness was also poignantly stated by one of the child soldiers interviewed by Jimenez, Bonilla, Arevalo, and Sandoval (2009): "What do I expect from the justice system? I do not know. I just know that it was not fair to be taken away when I was learning to read and write" (p. 15).

Colombian culture is rooted in a patriarchal system that disregards women's and children's rights, which exacerbates the impact of poverty on child soldiers. Girls and boys have often experienced abuse within their families before "joining" armed groups (Velasquez, 2009). Thus, poverty is both a root cause of and perpetuating factor of the problems. Children are expected to contribute to the family income, which forces them to leave the school system. Plus, joining armed groups provides children a means to flee extreme conditions of poverty and/or experience feelings of belonging that are not be provided by their families (Chamorro, 2012).

Londoño, Romero, and Casas (2012) cite Somasundaram's *Child Soldiers: Understanding the Context* and report that, from a sample of "625 war-exposed adolescents[,] 31% [were] diagnosed with post-traumatic-stress-disorder. . . , 32% with somatization disorder, 34% with anxiety, and 29% with depression" (par.5).

Londoño et al. found similar impacts. They analyzed the relationship between exposure to violence, armed conflict, and subsequent mental health problems in two Colombian towns, Guasca and Guatavita. Guasca is a small town that has been highly impacted by the Colombian armed conflict while Guatavita has not. However, eating disorders had a much higher prevalence in Guasca than in Guatavita. Anxiety disorders were found to be 32.5% in Guasca compared with 25.7% in Guatavita; somatization disorders were 73.8% in Guasca versus 61% in Guatavita; and alcohol abuse 38.1% and 23.8% respectively.

The Context of Colombia's Child Soldiers

Armed conflict has a negative impact on all members of a community, but the plight of child soldiers in Colombia is considered among the most appalling in Latin America. Human Rights Watch (2003) estimates that between 10,000 and 14,000 Colombian children have been involved with armed insurgent groups and that one in every four combatants is under eighteen-years of age. Other sources set the number of child soldiers in Colombia even higher. The report titled *Like Lambs Among Wolves* states that "...not less than 18,000 children ... are active troop members of illegal Colombian groups and [as many as] 100,000 are involved in ... neighborhood gangs, drug and sex trafficking activities" that are directly controlled by the same illegal groups (Springer, 2012, p. 30).

Colombian child soldiers are regularly coerced by group commanders to kill someone within the first months of their recruitment. Disturbingly, a dead body part is sometimes given to the child soldiers to wear to help them adapt to their new life and teach them to live with the smell of death (Human Rights Watch, 2003). Courtois and Ford (2009) point out that such constant exposure to traumatic situations alters a child's sense of self-definition and emotional self-regulation. Human Rights Watch (2003) reported how one child learned to handle death and friendships:

I had a friend, Juanita; she got involved in problems because she had sex with different men. We were good friends since we were civilians; we used to share the bed in the camp. The troop's commander told me that it would not matter that we were friends, that she had committed a mistake and that I have to kill her. I closed my eyes and shot her. I buried her. Then the commander told me good job, it does not matter if you cried. This is going to help you, you will have to do it many times again, and then you won't cry (p. 56).

Another story gained attention as a prevalent meme: if a child soldier loses their gun, they are expected to continue fighting without a weapon until they

can recapture the weapon of a fallen or captured enemy. Similarly, ex-combatant child soldiers are ordered to kill their friends if these friends are found trying to escape or are breaking the rules of the military organization.

Springer (2012) found that ex-combatant Colombian child soldiers experience different emotional responses from their non-combatant counterparts. For example, “fifty-three percent...reported sleep problems, 40% ...used more than one illegal drug, 43% ...reported feeling anxious much of the time, 23% ...reported chronic fatigue, 11% ...reported crying frequently, 11% ...had suicidal ideations, and 12% had episodes of extreme anger” (p. 48). These findings support the conclusion that prolonged exposure to violence and armed conflict impacts the incidence of poor mental health outcomes for combat-involved children.

Colombia’s Response to Its Child Soldier Problem

Colombia does not share the same perspective about child soldiers as many other countries. Despite suggestions from international organizations including the United Nations, Human Rights Watch, Amnesty International, and the International Criminal Court, the Colombian government refuses to confront the problem of child combatants in armed conflict. To date, the government’s strategies to combat or reduce the the recruitment of child soldiers have failed. This is in part due to widespread corruption in the executive, legislative, and judicial branches, as well as the context of extreme social inequalities in which many Colombian children grow up.

In a report generated by Amnesty International (2008), the Colombian Supreme Court investigated more than sixty Colombian Senators because of their ties with paramilitary groups. These investigations were known as the *escandalo de la parapolitica* (the parapolitical scandal). One example of the *escandalo de la parapolitica* is the “Santa Fe de Ralito Pact” (Amnesty International, 2008; Human Rights Watch 2010; Springer 2012). This pact, signed in July of 2001 by paramilitary groups and national, state, and city political leaders during the negotiations for a peace deal, was an agreement to hide or deny the involvement of children in paramilitary organizations. Various paramilitary leaders confirmed the existence of the pact when testifying before American judges when they were extradited to the United States after the peace deal and subsequent demobilization process.

The Colombian government’s failure to respond effectively to its child soldier problem is evident in current peace negotiation efforts. Recent negotiations held in Havana, Cuba between FARC and the Colombian government neglected to even address the topic of child soldiers. In fact, the status of children engaged in armed conflict in Colombia continues to worsen.

Government Programs For Child Soldiers

Per Caicedo (2012), Colombian child soldiers who are turned over to authorities must be transferred to the Colombian Institute for Family Wellbeing (Instituto Colombiano de Bienestar Familiar or ICBF), a governmental agency that operates and directs a program for assisting child soldiers. The program has a number of components, which include placing children in foster families and providing psychosocial help from ICBF professionals; however, the ex-combatant children often spend weeks or months housed on military bases where they are interrogated for hours by intelligence officers about their roles in insurgent groups. These interrogations reportedly involve children being beaten up and deprived of food. There are no reliable statistics on how many of the demobilized children from paramilitary groups have actually been served by the aforementioned program (Jimenez et al., 2009; Human Rights Watch, 2003, 2010, and 2012; Springer, 2012). Further, political corruption and poorly functioning political institutions have increased the risks of Colombian children receiving any form of care provided by the state.

Child combatants have testified that they were often released from military organizations, but never delivered to child welfare authorities; this prevented them from claiming any rights they may have as victims. Other children released from paramilitary organizations testified to being re-recruited by other armed organizations long after the peace process (i.e., *Las Águilas Negras* or The Black Eagles, paramilitary groups that carry out extrajudicial executions).

Recommendations

Colombia is not the first, nor will not be the last, country to confront the problems of child soldiers in their internal conflicts. Several international human rights and child protection organizations have identified successful strategies and principles that appear to be crucial in addressing the problems faced by child soldiers and their communities. The following two sections describe the authors' recommendations for the Colombian child soldier crisis, which are based on effective strategies that have been utilized in other countries to facilitate and rehabilitate child soldiers and reintegrate them into society.

Psychosocial Interventions

Lakeberg Dridi (2004) emphasizes the importance of including a bio-psychosocial perspective in medical care for demobilized child soldiers, particularly in cases where children have experienced sexual violence. Dridi, Cohn and Goodwin-Gill (1994), Kingma (2001), and Save the Children Fund (2001)

provide evidence-based practices that promote the extension of psychosocial support to families and communities as well as the former child soldiers. These psychosocial supports and care need to be culturally responsive and trauma informed.

Following such best practices, we recommend the provision of physical and mental health services for child soldiers by the Colombian government. Demobilized child soldiers are often in need of specialized and extensive services, especially those children subjected to the types of physical and sexual abuse which may result in long term mental illnesses. At present, the Colombian health care system provides insufficient medical and mental health services to address the extensive needs of ex-combatant children. The lack of mental health services in particular is due partly to the negative stigma attached to children's affiliation with armed groups: society, and to some extent the children's families, treats child soldiers as perpetrators rather than victims.

The proposed programs should focus on reorienting families and community members' attitudes towards ex-combatant children. These programs should aim to achieve a community environment that is receptive to the returning child's condition so that these children are rightfully viewed as victims rather than criminals. Specifically, treatment programs should help families and communities recognize that demobilized child soldiers are likely to be developmentally impaired, particularly in terms of social values. This is true regardless of the age of the demobilized child soldier or the pseudo-adult attitudes and behaviors they may exhibit.

We recommend that most of these programs also seek to reunify demobilized children with existing family members. Special consideration must be given to cases in which families were forced to turn their children over to the armed groups. Psychosocial support and treatment provided in family homes rather than in institutional settings is critical. The need to provide demobilized children access to education, job training, and livelihood opportunities is preferred.

Strengthening Institutional and Professional Capacity

While the recommendations discussed above derive from the best practices of international responses to child soldiers' reintegration, we also propose a set of recommendations unique to the situation in Colombia. In contrast to other human rights atrocities involving child victims of conflict, the tragedy in Colombia has been largely ignored and has not prompted widespread international outrage and action. Consequently, we recommend that members of international human rights organizations initiate a loud outcry, and demand that all parties engaged in the current peace negotiations publically acknowledge the profound impact that exploiting children has had on the Colombian people.

Specifically, all parties should be held responsible for the roles they have played in a manner similar to the Truth Commissions implemented in other countries. This type of international response would demand bipartisan accountability and help the negotiations move forward.

Following the acknowledgment of each party's role in exploiting children, the international community should help in the establishment of Truth Commissions and transitional justice programs. While the Colombian government is in the process of implementing a peace agreement with the FARC-EP, the issue of child soldiers has been ignored once again. Due to societal pressure, the FARC-EP announced that 50 child soldiers will be handed over to the government in April 2017, but the destiny of the other thousands of children in the hands of FARC-EP remains unaddressed and unknown.

The authors also recommend highlighting the role and function of the Colombian Institute for Family Wellbeing (Instituto Colombiano de Bienestar Familiar or ICBF). We support ICBF's stated position that it must be granted both the authority and resources necessary to carry out the work it is expected to do in order to address the bio-psycho-social needs of the thousands of families who will be impacted by children returning to the family after years engaged in armed conflict. From lessons learned in the aftermath of other armed conflict situations, we can know that these children will require extensive services and resources in order to assist them in readjusting to civilian life. We also suggest that the ICBF re-evaluate its current policy of seeking family reunification in all cases. Some children may be further harmed if returned to their families or guardians, especially those who were originally sold or given away to the armed groups.

Finally, the authors recommend that legal professionals, particularly judges, be educated with regard to international human rights laws and practices regarding restoration of justice for those impacted by child soldiers. Educators and mental health professionals are certain to experience an entire generation of children and families who have been tragically transformed by the years of exploitation, abuse, and cruelty. Support and training in trauma interventions for these professionals is a necessity. They must be equipped with up-to-date and culturally responsive practices to assist a generation of Colombian children—perhaps not in recovering innocence lost forever, but in restoring their basic humanity.

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