Article

Extending Research on the "War on Cops": The Effects of Ferguson on Nonfatal Assaults Against U.S. Police Officers

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Abstract

This study tests whether violence directed toward American law enforcement has increased in the wake of events in Ferguson, Missouri, in summer 2014. Using monthly data from the Federal Bureau of Investigation's (FBI) Law Enforcement Officers Killed and Assaulted (LEOKA) reports (2010–2016), we carried out time-series analyses to examine trends in nonfatal assaults on police officers in a sample of 4,921 agencies. Neither injurious nor noninjurious assaults on officers increased following Michael Brown's death in August 2014. The findings are robust across a variety of model specifications and estimation techniques, providing little evidence of a "War on Cops" through 2016. The study adds empirical rigor to an ongoing national debate based largely on speculation/anecdotes. The impact and potential consequences of the current climate for officers' perceptions of safety/risk are discussed.

Keywords

police, victimization, violence, Ferguson

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> Mr. President, now Americans who choose to be law enforcement officers, who choose to serve their communities and put their lives on the line for their fellow citizens, find themselves hunted and targeted just because of the uniform they wear.
>
> —Chuck Canterbury (National President of the Fraternal Order of Police; February 12, 2016)

The past 5 years have been challenging for police in the United States. Numerous high-profile deadly force incidents involving minority citizens have spurred civil unrest and fueled the growth of the Black Lives Matter movement. These incidents also led to the formation of the President's Task Force on 21st Century Policing (Ramsey & Robinson, 2015); the first presidential commission focused on law enforcement in the United States since the civil rights movement of the 1960s. The current climate is characterized by increased national attention toward the American police from the media, the public, and the government. Select law enforcement executives, politicians, and conservative essayists have claimed that a wave of anticop rhetoric since the summer of 2014 has created a more dangerous environment for police officers. In fact, some have proposed that a new "War on Cops" has emerged, subjecting police officers to an increase in violence, hostility, and resistance to police authority (Canterbury, 2016; Hattem, 2015; Mac Donald, 2016). This assertion became especially salient on December 20, 2014, when two New York Police Department (NYPD) officers—Rafael Ramos and Wenjian Liu—were fatally shot in an ambush attack while sitting in their patrol car in Brooklyn (Mueller & Baker, 2014). The shooter, Ismaaiyl Brinsley, who traveled to New York from Baltimore, targeted police officers specifically in retaliation for the killings of Michael Brown and Eric Garner at the hands of police earlier that year.

Has violence against American police increased since the death of Michael Brown in the summer of 2014 (i.e., "post-Ferguson")? Anecdotal evidence and news coverage suggest that this may be the case.[1] Aside from officers being targeted, there is speculation that the current climate of intense scrutiny is leading officers to second-guess themselves and to hesitate in using justifiable force on suspects due to fear of being vilified in the media. This hesitation has led to a few highly publicized cases of officers being seriously injured (Gorner & Dardick, 2016; Pleasance, 2015). The problem, however, is that there is little systematic and rigorous research on the topic. A recent longitudinal analysis conducted by Maguire et al. (2017) found that the August 2014 killing of Michael Brown in Ferguson was not associated with a subsequent increase in the number of police officers killed in the line of

duty. However, the study focused only on felonious homicides of officers, which are rare events from a statistical perspective. Less is known about non-fatal assaults, which occur much more frequently than fatal assaults. In fact, estimates suggest that approximately 10% of police officers are assaulted each year (Bierie, 2017, see also Duhart, 2001).

The present study builds on prior research on violence against American police by examining nonfatal assaults against officers. Using monthly data from the Federal Bureau of Investigation's (FBI) Law Enforcement Officers Killed and Assaulted (LEOKA) reports for the years 2010 to 2016, we test whether injurious and noninjurious assaults increased in the wake of Michael Brown's death and the subsequent attention generated by this sentinel event. More specifically, we use time-series analysis to compare trends in the number of injurious and noninjurious assaults on police officers in the United States before and after August 2014.

A War on Cops?

Multiple reasons have been offered to explain why there has been an alleged increase in violence against the police in recent years. Some argue that officers are now reluctant to use force in situations in which it would be justified. Others have argued that the criticism and negative attention directed toward law enforcement have led criminals to feel more emboldened—making them more likely to physically resist officer commands and even commit retaliatory violence (FBI, 2017a; Mac Donald, 2016). To the extent that either of these scenarios is occurring, it could have serious consequences for officer safety. Several tragic, ambush-style shootings of police officers have occurred in the United States in recent years. Following one such attack on two NYPD officers in December 2014, then-commissioner William Bratton stated, "They were quite simply assassinated, targeted for their uniform" (DeMarche, 2015). On August 28, 2015, Harris County (Texas) Sheriff's Deputy Darren Goforth was pumping gas for his patrol vehicle when he was approached from behind and fatally shot 15 times. Harris County Sheriff Ron Hickman stated that Deputy Goforth's uniform made him a target and that "a dangerous national rhetoric" was partly to blame for his killing (Sanchez, 2015). The summer of 2016 was particularly notable due to two separate ambush incidents: one in Dallas, Texas, where five officers were killed and another nine were wounded (Fernandez et al., 2016), and another in Baton Rouge, Louisiana, where three officers were killed and another three were injured (Bloom et al., 2016). The FBI (2017b), in an unclassified intelligence assessment, concluded it was "very likely" that the suspects in both cases acted in retaliation for perceived past police brutality incidents.

Aside from the felonious homicides, there have also been several high-profile incidents in which officers were critically injured due to their failure to take appropriate action during encounters with citizens. A Birmingham, Alabama, detective was beaten unconscious on August 7, 2015, after being pistol-whipped by a suspect with his own weapon (Pleasance, 2015). The officer was afraid to use force against the unarmed Black male during a traffic stop for fear of experiencing backlash. Speaking anonymously to CNN about the incident, the injured detective stated, "A lot of officers are being too cautious because of what's going on in the media. I hesitated because I didn't want to be in the media like I am right now" (Pleasance, 2015). Similarly, a 17-year veteran of the Chicago Police Department was beaten unconscious on October 5, 2016, after having her face repeatedly slammed into the pavement by an assailant at an accident scene. Chicago Police Superintendent Eddie Johnson reported that the injured officer failed to use her firearm to defend herself for fear of a backlash. According to Johnson, "She knew that she should shoot this guy, but she chose not to because she didn't want her family or the department to go through the scrutiny the next day on national news" (Gorner & Dardick, 2016).

These felonious homicides and serious assaults have led a growing number of both police union and former law enforcement leaders to weigh in on the violence. Chuck Canterbury (2016), the national president of the Fraternal Order of Police, sent a letter to then-president Barack Obama on behalf of the 330,000 members of the organization. The letter read,

> It is not just talk; it is not just rhetoric. Those spewing this hatred and those calling for violence are having an impact. They have been given a platform by the media to convey the message that police officers are their enemy and it is time to attack that enemy. Social media accounts are full of hatred and calls to target and kill police officers. The vitriol, the hateful screeds and statements of those we are sworn to protect and defend, as well as public calls to kill and injure police officers, are horrifying. This is a very real and very deliberate campaign to terrorize our nation's law enforcement officers.

Canterbury also called for Congress to expand the Federal hate crime/bias law to include violence perpetrated against police, and a number of states (e.g., Louisiana, Kentucky) have followed suit by proposing and implementing "Blue Lives Matter" laws (Craven, 2017). The president of the Chicago Police Department's largest union, Dean Angelo, reported, "Police don't want to become the next YouTube video. If you participate in a deadly force situation you can save your life, but in 2016, you can lose your job" (Gorner & Dardick, 2016). Howard Safir (2015), former commissioner of the NYPD,

Table 1. U.S. Police Officers Feloniously Killed by Year (2007–2016).

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total	58	41	48	56	72	49	27	51	41	66

Source. FBI Law Enforcement Officers Killed or Assaulted (LEOKA) reports.
Note. FBI = Federal Bureau of Investigation.

stated, "This War on Police is causing a demoralization of police officers throughout our country."

Empirical Status

Despite the significant amount of media attention that the topic has received, there is relatively little serious empirical research on whether violence against the police has increased in recent years. Most discussions rely on simple descriptive statistics, often year-over-year changes. The total number of officers feloniously killed in the line of duty in 2014—based on data from both the FBI's LEOKA reports and the National Law Enforcement Officers Memorial Fund—received attention from the media, politicians, and other stakeholders. For instance, using the 2014 statistics, Mac Donald (2015) reported, "Murders of officers jumped 89% in 2014, to 51 from 27 (in 2013)" (see also Hattem, 2015; Reese, 2014).

Comparing the 2013 with the 2014 totals would suggest that there was a precipitous uptick in police violence in 2014. However, drawing meaningful inferences from annual changes is difficult, particularly for relatively rare events such as the murder of police officers. It is worth noting that the 27 felonious homicides in 2013 represented a historic 35-year low (Balko, 2015a, 2015b; FBI, 2014, 2015; Hattem, 2015). Table 1 displays the number of U.S. police officers feloniously killed each year from 2007 to 2016 using the FBI's LEOKA reports. Over the past 10 years, an average of 51 officers have been killed per year. Thus, the 51 officers killed in 2014, which was described by many as evidence of there being an "open season on American police," were on par with the average over the previous decade. The 41 officers killed in 2015—touted as another year characterized by a "War on Police"—was well below the 10-year average. Yet, the 66 police officers killed in 2016 represent a yearly total well above the average for the previous 10 years (FBI, 2017c). Such patterns highlight the problems with drawing conclusions from annual differences (i.e., percentage changes) and the need to focus attention on broader trends over longer periods.

Relevant to claims that the growth of the Black Lives Matter movement and the recent anticop rhetoric have created a dangerous environment for police, the FBI released two controversial reports on the matter. The first report details what the Bureau believes is a rise in "Black Identity Extremism" (BIE). The report concludes that, ". . . Black Identity Extremist perceptions of police brutality against African Americans spurred an increase in premeditated, retaliatory lethal violence against law enforcement and will very likely serve as justification for such violence" (FBI, 2017b, p. 2). The second report contains a description of the mind-sets and behaviors of assailants who killed law enforcement officers in 2016 (FBI, 2017a). Although the methodology is vague, the FBI gathered information for the report by interviewing command staff and frontline officers from 13 departments who experienced a felonious line of duty death in 2016. Twenty-eight percent (14 out of 50) of the suspects expressed a premeditated desire to kill law enforcement officers prior to carrying out the attacks mainly due to "social and/or political reasons or they had a hatred of law enforcement" (FBI, 2017a). The gunmen in both the Dallas and Baton Rouge attacks on police in the summer of 2016, for example, fell into this category. According to the report, these assailants either posted their beliefs on social media or informed their family/friends of their intentions before perpetrating violence against police. It is unclear how the FBI arrived at these conclusions (e.g., 28% of all assailants being classified as such) based on interviews with officers from just 13 police departments.

Among the few rigorous empirical studies on the topic,[2] Maguire and colleagues (2017) used longitudinal data from the Officer Down Memorial Page to examine the possibility that a "Ferguson effect" may have generated an increase in the level of violence against police after the summer of 2014. More specifically, they investigated whether the shooting death of Michael Brown by then-officer Darren Wilson on August 9, 2014, and the negative attention that followed the incident were associated with a change in the number of U.S. police officers feloniously killed in the line of duty. Focusing on the period from January 2010 through March 2016, Maguire et al. (2017) found that the events in Ferguson in August 2014 were not associated with a rise in the number of police officers murdered. The findings were robust across a variety of model specifications and time-series estimation techniques, and they revealed no evidence of either an abrupt or a gradual increase in felonious homicides post-Ferguson. White et al. (2019) performed a similar analysis but extended the time period through December 2016—uncovering again no evidence of a "War on Cops" that occurred following August 2014.

Extending Previous Research

The analyses reported by Maguire and colleagues (2017) and White et al. (2019) represent an important first step in exploring recent trends in violence against police officers. They focused on extreme instances of violence: cases in which officers were feloniously killed in the line of duty. However, line of duty deaths in general and felonious homicides more specifically are infrequent events (Kaminski & Marvell, 2002; Maguire et al., 2017). Nonetheless, research has traditionally placed more attention on officer deaths than on nonfatal violence against police officers (e.g., Kaminski, 2008; Kent, 2010). Research has not yet addressed whether nonfatal assaults against police officers have increased post-Ferguson. The current study expands on past research by examining monthly trends in both injurious and noninjurious assaults on American police officers from 2010 through 2016. By expanding this line of research to include nonfatal assaults against police officers, we provide additional evidence that can inform debates about issues such as the Ferguson effect and the War on Cops.

Method and Data

This study seeks to determine whether there has been a "Ferguson effect" on the level of violence against police officers in the United States. If there were such an effect, we would expect to observe an increase in the number of assaults against police after the shooting death of Michael Brown on August 9, 2014, in Ferguson, Missouri. To determine whether events in Ferguson were associated with a change in the number of U.S. police officers assaulted in the line of duty, we constructed a time-series data set based on the FBI's LEOKA data.[3] Monthly counts of assaults against police officers are reported for each police agency that voluntarily participates in the data collection effort.[4] Unfortunately, the LEOKA data for any given year are typically not made available for public use until approximately 16 to 18 months after the new year begins. As a result, 2016 is the latest year for which we were able to obtain monthly data at the department level. LEOKA data are recorded at the agency level, not at the incident level. Therefore, the data set does not include contextual data on the factors that precipitated each reported assault; for example, there are no data to indicate the type of contact or whether the citizen or the officer was the initial aggressor.

Using the LEOKA data, we constructed a national time-series data set to examine trends in the number of assaults against police officers for the 84-month period between January 2010 and December 2016. Ideally, we would have done the analysis using shorter time periods (such as 1-week or

2-week periods), therefore, enabling us to have more postintervention observations. Unfortunately, months are the shortest time period for which LEOKA data are available. The time-series database contains three outcome measures: total assaults, assaults resulting in injury, and assaults not resulting in injury.

Analytical Strategy

During the period covered by the study, 4,921 law enforcement agencies in the United States provided complete and usable data on assaults against officers for the full 84-month period.[5] Table 2 provides descriptive statistics about the agencies in this sample, including their size, their population served, and the number of assaults experienced by officers. From 2010 to 2016, 160,080 assaults against officers were recorded within these agencies. A cursory review of the data suggests that the mean number of officers assaulted per month increased slightly during the study period, though the change is not statistically significant ($b = 0.707$, $p = .280$). Similar findings emerge with regard to assaults resulting in injury ($b = 0.462$, $p = .065$) and assaults not resulting in injury ($b = 0.245$, $p = .594$). For all three outcomes, the linear slope during the 84-month period is not significantly different from zero.

   This simplistic analysis fails to account for a number of complex issues associated with the analysis of time-series data (McCleary et al., 2017; McDowall et al., 1980). Moreover, because we are specifically interested in determining whether the shooting of Michael Brown and subsequent events in Ferguson in August 2014 were associated with the number of police officers assaulted in the line of duty, we relied on interrupted time-series analysis to answer two primary research questions.

   Research Question 1: Were events in Ferguson associated with an abrupt, permanent change in the number of police officers assaulted in the line of duty?
   Research Question 2: Were events in Ferguson associated with a gradual, permanent change in the mean number of officers assaulted in the line of duty?[6]

For both research questions, we examine three outcome measures: total assaults, assaults resulting in injury, and assaults not resulting in injury.

   The monthly time-series data set used in this study can be thought of as having three segments: the 55-month preintervention period before the month of Michael Brown's death, the 1-month intervention period during which

Table 2. Descriptive Statistics (*N* = 4,921).

Variable	*M*	*SD*	Minimum–Maximum
Total assaults (2010–2016)	32.5	202.6	0–6,030
Assaults with injuries (2010–2016)	9.4	55.2	0–1,855
Assaults without injuries (2010–2016)	23.2	158.3	0–4,692
Region[a]			
Northeast	0.29	—	—
South	0.39	—	—
Midwest	0.20	—	—
West	0.11	—	—
Population (2010)[b]	19,703	92,079.7	0–3,792,621
Full-time sworn officers (2010)[c]	40.1	228.9	0–9,858

Note. LEOKA = Law Enforcement Officers Killed and Assaulted; FBI = Federal Bureau of Investigation.
[a]Based on the FBI's categorization of geographic regions.
[b]The FBI records populations of zero in its LEOKA database for certain types of agencies whose jurisdictions overlap with those of other agencies. This is why some agencies in the sample have a population of zero.
[c]Some police agencies in the United States employ only part-time officers. This is why some agencies in the sample report that they had zero full-time sworn officers in 2010.

Brown's death occurred, and the 28-month postintervention period following Brown's death. Because Brown's death occurred on a single day and not over an entire month, the use of monthly time-series data presents certain challenges. The main estimates we present here are based on analyses in which August 2014 was dropped from the time series.[7] However, we also carried out supplementary analyses in which August 2014 was treated as part of either the preintervention or the postintervention period. Although the estimates change slightly depending on these specifications, the overall findings are robust across all three approaches.

Findings

Figure 1 shows the monthly total number of officers assaulted during the 84-month period from January 2010 to December 2016. During the pre-Ferguson portion of the time series that includes Months 1 to 55 (i.e., January 2010 to July 2014), the mean monthly number of assaults against officers equaled 1,895 (with a median of 1,913). During the post-Ferguson portion of the time series that includes Months 57 to 84 (i.e., September 2014 to December 2016), the mean number of assaults equaled 1,919 (with a median of 1,908). This represents a 1.25% increase in the mean number of assaults
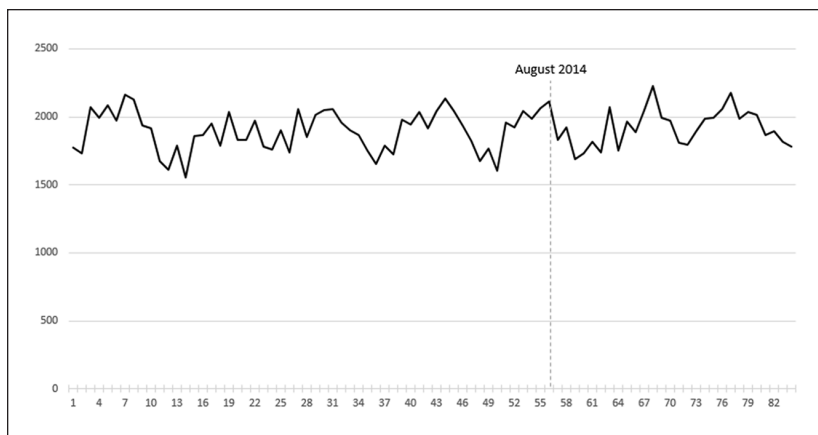
Figure 1. Monthly total number of police officers assaulted, January 2010 to December 2016.
Note. The vertical dashed line indicates the shooting death of Michael Brown in Ferguson, Missouri, in August 2014.

against officers and a 0.26% decrease in the median number of assaults against officers (see Table 3). A *t* test comparing the mean number of assaults against officers before and after the shooting of Michael Brown was not statistically significant ($t = -0.71$, $df = 81$, $p = .480$).

We carried out similar analyses on two additional categories of assaults—those resulting in injuries and those not resulting in injuries. During the pre-Ferguson portion of the time series that includes Months 1 to 55, the mean monthly number of assaults resulting in injury equaled 542.2 (with a median of 544). During the post-Ferguson portion of the time series that includes Months 57 to 84, the mean number of assaults resulting in injury equaled 558.5 (with a median of 561.5). This represents a 3.01% increase in the mean number of assaults resulting in injury and a 3.22% increase in the median number of assaults resulting in injury (see Table 3). A *t* test comparing the mean number of assaults resulting in injury before and after the shooting of Michael Brown was not statistically significant ($t = -1.26$, $df = 81$, $p = .211$).

During the pre-Ferguson period, the mean monthly number of assaults *not* resulting in injury equaled 1,352.9 (with a median of 1,352). During the post-Ferguson period, the mean number of noninjurious assaults equaled 1,360.4 (with a median of 1,353.5). This represents approximately a 0.55% increase in the mean number of noninjurious assaults and a 0.11% increase

Table 3. Analysis of Changes in the Number of Police Officers Assaulted in the Line of Duty (2010–2016).

Statistics	Pre-Ferguson period ($n = 55$)	Post-Ferguson period ($n = 28$)	% change
M number of total assaults[a]	1,895.2	1,918.9	1.25
Median number of total assaults	1,913.0	1,908.0	−0.26
M number of assaults resulting in injury[b]	542.2	558.5	3.01
Median number of assaults resulting in injury	544.0	561.5	3.22
M number of assaults not resulting in injury[c]	1,352.9	1,360.4	0.55
Median number of assaults not resulting in injury	1,352.0	1,353.5	0.11

[a]$t = -0.71$, $df = 81$, $p = .480$.
[b]$t = -1.26$, $df = 81$, $p = .211$.
[c]$t = -0.32$, $df = 81$, $p = .750$.

in the median number of noninjurious assaults (see Table 3). A t test comparing the mean number of assaults *not* resulting in injury before and after the shooting of Michael Brown was not statistically significant ($t = -0.32$, $df = 81$, $p = .750$).

The simplistic analyses presented so far suggest that the shooting of Michael Brown and subsequent events in Ferguson did not generate a statistically significant increase in the frequency with which police officers in the United States were assaulted in the line of duty. These findings represent preliminary evidence that police are not being assaulted more often post-Ferguson. However, these analyses do not account for the possibility of serially correlated errors and other issues in the time series, and, therefore, may be biased. Thus, we performed time-series analyses on the data using a variety of model specifications and estimation methods. We relied on interrupted time-series analysis methods using the Box–Jenkins approach, which involves the use of autoregressive integrated moving average (ARIMA) models (Box & Jenkins, 1976; Glass et al., 2008). Selecting an appropriate nonseasonal ARIMA model involves specifying three components: p represents the autoregressive component of the model, i represents the integration or trend component, and q represents the moving average component. For models with evidence of seasonal effects, three similar parameters must be specified for the seasonal portion of the model. Selecting the appropriate ARIMA specification involves a series of diagnostics.

For the total assaults model, visual inspection of the data series and the autocorrelation plots suggested that the series is stationary. Based on the results of an augmented Dickey–Fuller test ($t = -4.56$, $p < .01$) and a Phillips–Perron test ($t = -33.37$, $p < .01$), we rejected the null hypothesis that there is a unit root and concluded that the series is stationary (Dickey & Fuller, 1981; Phillips & Perron, 1988). Because of these findings, we did not include a trend component in the ARIMA model. Our initial diagnoses revealed evidence of significant serial correlation in the residuals. This finding was based on visual inspection of the autocorrelation plots and the Ljung–Box Q statistics (Ljung & Box, 1978). The autocorrelation plots also revealed the need for a moving average component in the nonseasonal portion of the model and an autoregressive component in the seasonal portion. Based on these diagnostics, we selected an ARIMA (1,0,2) specification.

Once the base specification of the ARIMA noise model was established, we added an intervention variable to test the effect of Michael Brown's killing and subsequent events in and around Ferguson, Missouri, in August 2014. Table 4 presents the findings from these analyses. We tested for two possible effects on total assaults against police officers: an abrupt, permanent change, and a gradual, permanent change. In both cases, the effect of Michael Brown's death in August 2014 was negative and not statistically significant. We repeated the same diagnostic procedures to select the appropriate specification for two additional outcomes: assaults against officers resulting in injury (1,0,0) and assaults against officers not resulting in injury (2,0,2). The effects of Michael Brown's death were not statistically significant across the board. These findings suggest that the shooting of Michael Brown and subsequent events in Ferguson in August 2014 did not have either an abrupt or a gradual permanent effect on the number of assaults against U.S. police officers through December 2016.

In an effort to determine whether the findings were sensitive to different model specifications, we also estimated autoregressive Poisson models for longitudinal event count data using methods developed by Brandt and Williams (2001). Using these methods, we estimated PAR(1) and PAR(2) specifications for all three outcomes. In every instance, the coefficients representing the time when Michael Brown was killed were nonsignificant. We conclude from these supplemental analyses that our original findings are robust and that the shooting of Michael Brown and subsequent events in Ferguson did not have an "abrupt, permanent" or a "gradual, permanent" effect on the number of assaults against U.S. police officers in the line of duty through December 2016.

The events in Ferguson following the death of Michael Brown have been described as an "environmental jolt" with significant implications for the

Table 4. ARIMA Interrupted Time-Series Results.

Outcome	Onset	Coefficient	SE	z value	p
Total assaults[a]	Abrupt permanent	−31.0	59.5	−0.52	.60
Total assaults	Gradual permanent	−32.5	59.3	−0.55	.58
Assaults resulting in injury[b]	Abrupt permanent	16.1	19.2	0.84	.40
Assaults resulting in injury	Gradual permanent	29.5	27.2	1.08	.28
Assaults not resulting in injury[c]	Abrupt permanent	14.2	18.6	0.76	.45
Assaults not resulting in injury	Gradual permanent	38.0	38.6	0.98	.33

Note. ARIMA = autoregressive integrated moving average.
[a]Total assaults: ARIMA (1,0,2).
[b]Assaults resulting in injury: ARIMA (1,0,0).
[c]Assaults not resulting in injury: ARIMA (2,0,2).

public image of the police and the relationships between police and communities (Maguire et al., 2017). However, this was not the only controversial event that occurred during the time period covered by this study. The deaths of Eric Garner, Tamir Rice, Freddie Gray, Sandra Bland, Walter Scott, and other minorities also had significant implications for police in the United States. Moreover, it is not only the deaths themselves that generate public backlash; other related events like courtroom verdicts that exonerate the police officers involved also have significant implications for public perceptions of police. Thus, we carried out supplementary analyses to examine the possibility that significant events other than the shooting death of Michael Brown in Ferguson might have influenced the number of assaults against police officers in the United States.

Using the methods developed by Bai and Perron (2003) and implemented in R by Zeileis et al. (2003), we tested for the presence of "abrupt structural changes" in the mean of the time series for total number of assaults. We allowed for the possibility of up to six structural breaks. The Bayesian information criterion (BIC) revealed that the optimal number of breaks was zero. We repeated the analysis for the other two time series for injury assaults and noninjury assaults. The BIC values for both time series revealed that the optimal number of breaks was zero. These findings suggest that for all three outcomes, there were no abrupt structural breaks in the time series. These findings provide strong evidence that none of the other controversial events that occurred during the time covered by this study produced a significant shift in the number of assaults against police officers in the United States.

As one final check on the robustness of our findings, we reestimated the interrupted time-series models on two subsamples of agencies: the 159 agencies serving a population of 100,000 or more in 2016 and the

63 agencies serving a population of 250,000 or more in 2016. Many of the communities in our sample are quite small. These analyses are intended to detect whether a Ferguson effect may only be present in larger jurisdictions. Our results (not shown; available as supplemental material) reveal that in both subsamples, the shooting of Michael Brown and other events in August of 2014 did not have a statistically significant effect, whether abrupt or gradual, on any of our outcome variables. The findings from these subsample analyses are consistent with the findings from our full sample analyses. Once again, we find no evidence that the shooting of Michael Brown and subsequent events in Ferguson led to a change in the number of U.S. police officers injured in the line of duty.

Discussion

Much like the dynamics that occurred in the civil disorder of the 1960s and the fallout from the Rodney King incident in the early 1990s, American police have experienced an ongoing crisis of legitimacy since the summer of 2014 (see Weitzer, 2015). A string of highly publicized deadly force incidents, some captured on video and widely disseminated through conventional and social media, has garnered significant national and international attention. In 2016, the Bahamas issued a travel warning to its citizens traveling to the United States, urging young men to "exercise extreme caution" during their interactions with the police (Davis, 2016). The killings of several unarmed Black men by police, together with the widespread public backlash that ensued, fueled a growing, nationwide movement focused on issues of police accountability and reform (i.e., Black Lives Matter). Since the summer of 2014, a variety of police-related issues have generated significant attention in political and public policy circles. These issues include whether crime has increased and why (e.g., Pyrooz et al., 2016; Rosenfeld, 2016; Rosenfeld & Wallman, 2019), whether officers are engaging in "de-policing" in response to increased criticism (e.g., Shjarback et al., 2017), and whether there is now a War on Cops. Although these debates are long on speculation and anecdotes, they are often short on data and research evidence.

We are aware of only two rigorous empirical studies examining whether violence against police officers increased in the wake of Ferguson (Maguire et al., 2017; White et al., 2019). Both studies focused on fatal assaults against police officers. To our knowledge, there has not yet been a credible study on changes in nonfatal assaults against police officers post-Ferguson. We examined nonfatal assaults against U.S. police officers from January 2010 to December 2016. Our findings reveal that the death of Michael Brown and subsequent events in and around Ferguson, Missouri, in August 2014 did not

lead to a War on Cops. Estimates from a variety of time-series models found no significant increases in total assaults against police officers, or on injurious and noninjurious assaults. Our findings were robust across a number of different model specifications that considered the possibility of both gradual and abrupt changes post-Ferguson. These findings did not change when we restricted our sample to agencies serving populations of greater than 100,000 or greater than 250,000.

Although our findings reveal little evidence of a "War on Cops" based on nonfatal assaults through December 2016, we are unable to draw inferences about more recent trends because such data are still not available. Unlike felonious homicides of officers and line of duty deaths more broadly, for which multiple sources of data are available (e.g., the Officer Down Memorial Page and the National Law Enforcement Officers Memorial Fund), the FBI's LEOKA data are the only publicly available way to measure nonfatal assaults in police agencies throughout the United States. Lengthy delays in releasing the LEOKA data make it difficult to conduct timely social science research on a key public policy issue.

Such delays are problematic, and they mirror similar issues associated with providing timely data for criminal justice–related research. Richard Rosenfeld, among other scholars, has long discussed the shortcomings of delays in the release of the FBI's Uniform Crime Reporting data. According to Rosenfeld (2007),

> The United States does not monitor crime rates on a comprehensive and timely basis. The absence of up-to-date information on crime rates at the national and local level misinforms policy responses, impedes criminal justice planning and efficient resource allocation, and contributes to public ignorance of the crime problems in this country. (p. 825)

This differs from the federal government's approach to monitoring other social problems. The Bureau of Labor Statistics, for example, compiles detailed measures of unemployment, updates the data on a month-by-month basis, and publishes those data on its website (see Rosenfeld, 2007). Unlike studying unemployment, we are largely left to speculate about whether the country is experiencing significant crime increases or whether law enforcement officers are at a greater risk of violent victimization. These issues open the door for uninformed positions and policy decisions that are not rooted in facts and that lack scientific merit.

Although researchers have found little evidence of a "War on Cops" from the few studies that have been conducted so far, much remains to be learned. Researchers should continue to explore how the current climate surrounding

law enforcement has potentially affected officers. Although the evidence to date finds no post-Ferguson increase in fatal or nonfatal assaults against police officers, it is possible that increased attention toward the police since the summer of 2014 has influenced how police officers think, feel, and behave. Early research has shown that some departments and their officers are engaging in "de-policing" by choosing not to engage as vigorously in proactive police work (e.g., Morgan & Pally, 2016; Shjarback et al., 2017). In addition, a growing body of research has found that the present social and political climate has negatively affected police officers' perceptions of their job, the citizens they serve, and their own confidence in their authority. These dynamics have reduced their self-legitimacy, making them less motivated to enforce the law, and less willing to work with members of the community to solve local problems (Nix & Wolfe, 2016, 2017; Wolfe & Nix, 2016). There is also reason to believe that the current climate has negatively affected recruitment (Jackson, 2018; Police Executive Research Forum, 2019) as well as college students' motivations to enter the law enforcement profession (Morrow et al., 2019).

A better understanding of officers' perceptions and concerns, particularly those associated with safety and risk, is critical. One effort in this regard comes from the work of Sierra-Arévalo (2016), who conceptualized a cultural frame called the "danger imperative"—defined as the preoccupation with violence and the demand for officer safety. The danger imperative fosters police behaviors that directly conflict with policies designed to keep officers safe. Examples include officers choosing not to wear seatbelts for fear that the strap will (a) prevent them from accessing their firearm in case of an emergency and (b) get caught on their duty belt and prevent them from being able to exit the vehicle quickly (Sierra-Arévalo, 2016). It is plausible that such a mind-set, fostered by both formal and informal officer socialization processes, has intensified in recent years within the current social and political climate and increases in perceived "anticop" rhetoric. A report by the Pew Research Center (2017), which employed a nationally representative sample of approximately 8,000 police officers, found that 93% of officers have become more concerned about their safety because of high-profile incidents involving minority citizens and police in the last 3 years. Such beliefs may put officers more "on edge" and lead them to take actions that escalate physical confrontations during interactions with citizens.

This concern about safety could potentially influence the number of assaults against police officers and, therefore, the results of this study. If officers are indeed engaged in depolicing—whether to avoid criticism or simply because of safety concerns—then they may find themselves in fewer situations in which an assault against them is possible. This is speculative on our

part. However, a growing body of research evidence suggests that depolicing in the wake of Ferguson may be a real phenomenon that has affected police behavior while on the job (see Arthur & Asher, 2016; Asher, 2016; Fischer-Baum & Flowers, 2015; Knapp, 2016; Morgan & Pally, 2016; Shjarback et al., 2017) as well as officers' attitudes and beliefs (Pew Research Center, 2017). Much remains to be learned about the nature and extent of depolicing and its effects on both police officers and communities.

Thus far, empirical research on the "War on Cops" has only focused on a limited number of measures of intentional violence directed toward police in the form of felonious homicides and nonfatal assaults. It is unclear whether the nature of the threat against police has changed in more nuanced ways. Richardson et al. (2019) discuss the possibility that ambush-style attacks (see Fachner & Thorkildsen, 2015), such as the one in Brooklyn in December 2014 or those in Dallas and Baton Rouge in summer 2016, are more common now than in the past. Perhaps the increase or even the perceived increase due to more media and/or police union attention has led officers to feel like a war exists and that they are under attack. These recent high-profile cases and the attention they have received in the social media era, coupled with new ethnographic research that details how the preoccupation with danger and violence is maintained by the commemoration of officers killed in the line of duty that transcends departments across the country (see Sierra-Arévalo, 2019), might be amplifying officers' perceptions as "warriors" in the battle between good and evil (McLean et al., 2019; Rahr & Rice, 2015; Stoughton, 2016).

In addition, the "War on Cops" hypothesis also suggests that possibility that police–citizen interactions have become more adversarial and antagonistic. There have been assertions that over the last 5 years, citizens are more willing to resist police authority and less likely to comply with officer commands or directives. There is also speculation that displays of disrespect toward officers may have worsened. For one, viral videos surfaced in the summer of 2019 of separate incidents where NYPD officers were doused with buckets of water while walking their beats and making an arrest (Bellafante, 2019). NYPD officials as well as their union representatives blamed "antipolice rhetoric" for both the attacks and the passive response of the officers to these incidents. The LEOKA data are insufficient for testing hypotheses about resistance to police authority, failure to follow police commands, or disrespect toward police officers. These aspects of the "War of Cops" hypothesis remain untested.

Some feel as though the current climate and the perceived increase in "anticop" rhetoric since the summer of 2014 have created a more dangerous environment for officers. Many people in the law enforcement community believe this to be case, as evidenced by a recent national study of police

officers by the Pew Research Center (2017) as well as those in command-level positions (Nix et al., 2018). Officer safety is a vital public policy issue that deserves to be studied rigorously. It was one of the six pillars of police reform highlighted by the President's Task Force on 21st Century Policing (Ramsey & Robinson, 2015). Any time a police officer is killed or seriously injured in the line of duty, it is tragic. Police officers must remain vigilant to ensure that they can return home safely at the end of each shift. However, it is not helpful to propagate a false narrative of a War on Cops. A growing body of research evidence, including the present study, finds little evidence to support the War on Cops thesis.

Authors' Note

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. To be fair, the news media, specifically *The Washington Post*, has published articles that have downplayed the "War on Cops" speculation (e.g., Balko, 2015a, 2015b). In addition, *USA Today* ran a story in December of 2017 about how 2017 marked the second lowest number of police line of duty deaths in more than 50 years (Hayes, 2017).
2. Tiesman et al. (2018) examined nonfatal injuries of police officers using data from the National Electronic Injury Surveillance System-Occupational Supplement (i.e., emergency room visits) from 2003 to 2014. They found a significant increase in nonfatal issues due to assault over the broad time period

being studied. However, only 4 months "post-Ferguson" (i.e., August 2014) were included in the analysis, which is why we elected not to cover it in much detail in the literature review.

3. Law Enforcement Officers Killed or Assaulted (LEOKA) has been found to suffer from missing data problems because some agencies choose not to participate at all in some years, whereas others sometimes do not report a full 12 months of data in a given year, which results in an incompleteness/underestimation that challenges researchers' ability to draw national-level inferences (see, for example, Kuhns et al., 2016; Uchida & King, 2002, for more detailed descriptions of LEOKA's limitations).

4. Between 7,000 and 9,000 police departments reported data for a full 12 months of a given calendar year from 2010 to 2016; however, not all agencies that participated in LEOKA reported for each year that was examined. Therefore, the number of unique police departments that reported data for all 12 months of a calendar year for each year from 2010 through 2016 (i.e., 84 full months) is smaller.

5. The LEOKA program depends on voluntary monthly reporting by state and local law enforcement agencies to the Federal Bureau of Investigation (FBI). Again, any agency that failed to report data for all 84 months examined here was excluded from this study. Some agencies submitted data for all 84 months, but the data were not usable. The most striking example comes from Florida, where agencies throughout the state submit zeros for the first 11 months of every year and then annual totals in the 12th month. This practice leads to the mistaken inference that assaults against police officers peak in December. We excluded agencies that submitted data with these types of obvious errors.

6. The terminology used to describe changes in the time series as "abrupt permanent" or "gradual permanent" is derived from the interrupted time-series literature (see McCleary et al., 2017; McDowall et al., 1980). The word "permanent" in this context refers to an effect that lasts from its inception until the end of the time series.

7. In some of the time-series models, we encountered estimation problems when dropping August 2014 from the data set. In such instances, we were able to obtain valid estimates by treating August 2014 as part of the postintervention period. The findings were equivalent to supplementary analyses in which we treated August 2014 as part of the preintervention period.

References

Arthur, R., & Asher, J. (2016, April 11). Gun violence spiked—and arrests declined—in Chicago right after the Laquan McDonald video release. *FiveThirtyEight*. http://fivethirtyeight.com/features/gun-violence-spiked-and-arrests-declined-in-chicago-right-after-the-laquan-mcdonald-video-release/

Asher, J. (2016, July 29). Baton Rouge drug enforcement has plummeted since police killed Alton Sterling. *FiveThirtyEight*. http://fivethirtyeight.com/features/baton-rouge-drug-enforcement-has-plummeted-since-police-killed-alton-sterling/

Bai, J., & Perron, P. (2003). Computation and analysis of multiple structural change models. *Journal of Applied Econometrics*, *18*(1), 1–22.

Balko, R. (2015a, December 22). In the end, 2015 saw no "War on Cops" and no "national crime wave." *The Washington Post*. https://www.washingtonpost.com/news/the-watch/wp/2015/12/22/in-the-end-2015-saw-no-war-on-cops-and-no-national-crime-wave/?utm_term=.3f37d0683e71

Balko, R. (2015b, September 10). Once again: There is no "War on Cops." And those who claim otherwise are playing a dangerous game. *The Washington Post*. https://www.washingtonpost.com/news/the-watch/wp/2015/09/10/once-again-there-is-no-war-on-cops-and-those-who-claim-otherwise-are-playing-a-dangerous-game/?utm_term=.98ebddbc007e

Bellafante, G. (2019, July 25). Eric Garner, soaked officers and the tilted scales of justice. *The New York Times*. https://www.nytimes.com/2019/07/25/nyregion/police-water-bucket-garner.html?searchResultPosition=1

Bierie, D. M. (2017). Assault of police. *Crime & Delinquency*, *63*(8), 899–925.

Bloom, J., Fausset, R., & McPhate, M. (2016, July 17). Baton Rouge shooting jolts a nation on edge. *The New York Times*. https://www.nytimes.com/2016/07/18/us/baton-rouge-shooting.html

Box, G. E., & Jenkins, G. M. (1976). *Time series analysis: Forecasting and control* (Rev. ed.). Holden-Day.

Brandt, P. T., & Williams, J. T. (2001). A linear Poisson autoregressive model: The Poisson AR (p) model. *Political Analysis*, *9*(2), 164–184.

Canterbury, C. (2016, February 12). *Letter from national FOP president Canterbury to president Obama*. http://foplodge4.org/letter-from-national-fop-president-canterbury-to-president-obama/

Craven, J. (2017, December 11). 32 blue lives matter bills have been introduced across 14 states this year. *The Huffington Post*. https://www.huffingtonpost.com/entry/blue-black-lives-matter-police-bills-states_us_58b61488e4b0780bac2e31b8

Davis, A. C. (2016, July 8). The Bahamas' new travel advisory: Use "extreme caution" around police. *The Washington Post*. https://www.washingtonpost.com/news/morning-mix/wp/2016/07/09/the-bahamas-travel-advisory-for-the-u-s-use-extreme-caution-around-the-police/

DeMarche, E. (2015, September 7). Police face recruiting shortage due to war on cops. *New York Post*. http://nypost.com/2015/09/07/police-face-recruiting-shortage-due-to-war-on-cops

Dickey, D., & Fuller, W. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, *49*, 1057–1072.

Duhart, D. T. (2001). *Violence in the workplace, 1993–99*. U.S. Department of Justice, Office of Justice Programs.

Fachner, G., & Thorkildsen, Z. (2015). *Ambushes of police: Environment, incident dynamics, and the aftermath of surprise attacks against law enforcement*. Office of Community Oriented Policing Services.

Federal Bureau of Investigation. (2014). *Law enforcement officers killed & assaulted, 2013*. Criminal Justice Information Services Division.

Federal Bureau of Investigation. (2015). *Law enforcement officers killed & assaulted, 2014*. Criminal Justice Information Services Division.

Federal Bureau of Investigation. (2017a). *The assailant study—Mindsets and behaviors*. http://media.washtimes.com.s3.amazonaws.com/media/misc/2017/05/04/study.pdf

Federal Bureau of Investigation. (2017b). *Black identity extremists likely motivated to target law enforcement*. https://www.documentcloud.org/documents/4067711-BIE-Redacted.html

Federal Bureau of Investigation. (2017c). *Law enforcement officers killed & assaulted, 2016*. Criminal Justice Information Services Division.

Fernandez, M., Pérez-Peña, R., & Bromwich, J. E. (2016, July 8). Five Dallas officers were killed as payback, police chief says. *The New York Times*. https://www.nytimes.com/2016/07/09/us/dallas-police-shooting.html

Fischer-Baum, R., & Flowers, A. (2015, June 16). Charts: Baltimore crime, before and after Freddie Gray's funeral. *FiveThirtyEight*. http://fivethirtyeight.com/datalab/charts-baltimore-crime-before-and-after-freddie-grays-funeral/

Glass, G. V., Willson, V. L., & Gottman, J. M. (2008). *Design and analysis of time-series experiments*. Information Age Publishing.

Gorner, J., & Dardick, H. (2016, October 7). Citing beating of officer, Chicago's top cop says police are "second-guessing themselves." *Chicago Tribune*. http://www.chicagotribune.com/news/local/breaking/ct-citing-beating-of-officer-chicago-s-top-cop-says-police-are-second-guessing-themselves-20161006-story.html

Hattem, J. (2015, May 11). Killings of police officers on the rise. *The Hill*. http://thehill.com/policy/national-security/241594-fbi-officer-killings-on-the-rise

Hayes, C. (2017, December 28). Number of officers killed hits 2nd-lowest in more than 50 years. *USA Today*. https://www.usatoday.com/story/news/2017/12/28/number-officers-killed-2017-hits-nearly-50-year-low/984477001/

Jackson, T. (2018, December 4). Who wants to be a police officer? Job applications plummet at most U.S. departments. *The Washington Post*. https://www.washingtonpost.com/crime-law/2018/12/04/who-wants-be-police-officer-job-applications-plummet-most-us-departments/

Kaminski, R. J. (2008). Assessing the county-level structural covariates of police homicides. *Homicide Studies*, *12*(4), 350–380.

Kaminski, R. J., & Marvell, T. B. (2002). A comparison of changes in police and general homicides: 1930–1998. *Criminology*, *40*(1), 171–190.

Kent, S. L. (2010). Killings of police in US cities since 1980: An examination of environmental and political explanations. *Homicide Studies*, *14*(1), 3–23.

Knapp, A. (2016, April 2). "Walter Scott effect": North Charleston traffic stops cut in half after shooting, but is it the lasting change critics seek? *The Post and Courier*. http://www.postandcourier.com/article/20160402/PC16/160409955

Kuhns, J. B., Dolliver, D., Bent, E., & Maguire, E. R. (2016). *Understanding firearms assaults against law enforcement officers in the United States*. Office of Community Oriented Policing Services.

Ljung, G. M., & Box, G. E. P. (1978). On a measure of lack of fit in time series models. *Biometrika*, *65*, 297–303.

Mac Donald, H. (2015, May 29). The new nationwide crime wave. *The Wall Street Journal*. http://www.wsj.com/articles/the-new-nationwide-crime-wave -1432938425

Mac Donald, H. (2016). *The war on cops: How the new attack on law and order makes everyone less safe*. Encounter Books.

Maguire, E. R., Nix, J., & Campbell, B. A. (2017). A war on cops? The effects of Ferguson on the number of U.S. police officers murdered in the line of duty. *Justice Quarterly*, *34*(5), 739–758.

McCleary, R., McDowall, D., & Bartos, B. J. (2017). *Design and analysis of time series experiments*. Oxford University Press.

McDowall, D., McCleary, R., Meidinger, E. E., & Hay, R. A., Jr. (1980). *Interrupted time series*. SAGE.

McLean, K., Wolfe, S. E., Rojek, J., Alpert, G. P., & Smith, M. R. (2019). Police officers as warriors or guardians: Empirical reality or intriguing rhetoric? *Justice Quarterly*. Advance online publication. doi:10.1080/07418825.2018.1533031

Morgan, S. L., & Pally, J. A. (2016). *Ferguson, Gray, and Davis: An analysis of recorded crime incidents and arrests in Baltimore City, March 2010 through December 2015*. Johns Hopkins University. http://socweb.soc.jhu.edu/faculty/ morgan/reports.html

Morrow, W. J., Vickovic, S. G., Dario, L. M., & Shjarback, J. A. (2019). Examining a Ferguson Effect on college students' motivation to become police officers. *Journal of Criminal Justice Education*, *30*, 585–605. doi:10.1080/10511253.2 019.1619793

Mueller, B., & Baker, A. (2014, December 20). 2 N.Y.P.D. officers killed in Brooklyn ambush; suspect commits suicide. *The New York Times*. http://www.nytimes. com/2014/12/21/nyregion/two-police-officers-shot-in-their-patrol-car-in-brook- lyn.html

Nix, J., & Wolfe, S. E. (2016). Sensitivity to the Ferguson Effect: The role of managerial organizational justice. *Journal of Criminal Justice*, *47*, 12–20.

Nix, J., & Wolfe, S. E. (2017). The impact of negative publicity on police self-legitimacy. *Justice Quarterly*, *34*(1), 84–108.

Nix, J., Wolfe, S. E., & Campbell, B. A. (2018). Command-level police officers' perceptions of the "War on Cops" and de-policing. *Justice Quarterly*, *35*(1), 33–54.

Pew Research Center. (2017). *Behind the badge: Amid protests and calls for reform, how police view their jobs, key issues and recent fatal encounters between blacks and police*. http://www.pewsocialtrends.org/2017/01/11/behind-the- badge/?utm_content=buffer33b9f&utm_medium=social&utm_source=twitter. com&utm_campaign=buffer

Phillips, P. C. B., & Perron, P. (1988). Testing for unit roots in time series regression. *Biometrika*, *75*, 335–346.

Pleasance, C. (2015, August 15). Cop who was pistol-whipped unconscious with his own weapon was afraid to use force against his unarmed black attacker in the

wake of Ferguson shooting. *Daily Mail*. http://www.dailymail.co.uk/news/article-3198613/Cop-pistol-whipped-unconscious-weapon-afraid-use-force-against-unarmed-black-attacker-wake-Ferguson-shooting.html

Police Executive Research Forum. (2019). *The workforce crisis, and what police agencies are doing about it*.

Pyrooz, D. C., Decker, S. H., Wolfe, S. E., & Shjarback, J. A. (2016). Was there a Ferguson Effect on crime rates in large U.S. cities? *Journal of Criminal Justice*, *46*(1), 1–8.

Rahr, S., & Rice, S. K. (2015). *From warriors to guardians: Recommitting American police culture to democratic ideals*. National Institute of Justice. https://www.ncjrs.gov/pdffiles1/nij/248654.pdf

Ramsey, C., & Robinson, L. O. (2015). *The president's task force on 21st century policing*. Office of Community Oriented Policing Services.

Reese, S. (2014, November 27). Police say officers hesitating to use deadly force. *The Washington Times*. http://www.washingtontimes.com/news/2014/nov/27/police-say-officers-hesitating-to-use-deadly-force/

Richardson, N. J., Barrick, K., & Strom, K. J. (2019). Is policing safer today? The case for a more comprehensive definition of dangerousness. *Criminology & Public Policy*, *18*(1), 37–45.

Rosenfeld, R. (2007). Transfer the uniform crime reporting program from the FBI to the Bureau of Justice Statistics. *Criminology & Public Policy*, *6*(4), 825–834.

Rosenfeld, R. (2016). *Documenting and explaining the 2015 homicide rise: Research directions*. National Institute of Justice.

Rosenfeld, R., & Wallman, J. (2019). De de-policing cause the increase in homicide rates? *Criminology & Public Policy*, *18*(1), 51–75.

Safir, H. (2015, June 5). Police commissioner: Bad old days of crime may be back. *Time Magazine*. http://time.com/3908254/howard-safir-crime

Sanchez, R. (2015, September 4). Attacks leave police feeling under siege. *CNN*. http://www.cnn.com/2015/09/04/us/us-police-feel-under-siege

Shjarback, J. A., Pyrooz, D. C., Wolfe, S. E., & Decker, S. H. (2017). De-policing and crime in the wake of Ferguson: Racialized changes in the quantity and quality of policing among Missouri police departments. *Journal of Criminal Justice*, *50*(1), 42–52.

Sierra-Arévalo, M. (2016). *American policing and the danger imperative*. https://ssrn.com/abstract=2864104

Sierra-Arévalo, M. (2019). The commemoration of death, organizational memory, and police culture. *Criminology*, *57*(4), 632–658.

Stoughton, S. (2016). Law enforcement's warrior problem. *Harvard Law Review Forum*, *128*, 225–234.

Tiesman, H. M., Gwilliam, M., Konda, S., Rojek, J., & Marsh, S. (2018). Nonfatal injuries to law enforcement officers: A rise in assaults. *American Journal of Preventive Medicine*, *54*(4), 503–509.

Uchida, C. D., & King, W. R. (2002). Police employee data: Elements and validity. *Justice Research and Policy*, *4*(1), 11–20.

Weitzer, R. (2015). American policing under fire: Misconduct and reform. *Society*, *52*(5), 475–480.

White, M. D., Dario, L. M., & Shjarback, J. A. (2019). Assessing dangerousness in policing: An analysis of officer deaths in the United States, 1970-2016. *Criminology & Public Policy*, *18*(1), 11–35.

Wolfe, S. E., & Nix, J. (2016). The alleged "Ferguson Effect" and police willingness to engage in community partnership. *Law and Human Behavior*, *40*(1), 1–10.

Zeileis, A., Kleiber, C., Krämer, W., & Hornik, K. (2003). Testing and dating of structural changes in practice. *Computational Statistics & Data Analysis*, *44*, 109–123.

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