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The Role of Officer Attributes, Job Characteristics, and Arrest Activity in Explaining Police Use of Force

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Abstract

While numerous studies have examined the causes, correlates, and control of police use of force, many questions remain. This study contributes to the literature on police use of force by examining the role of officers' background characteristics, job characteristics (patrol area and shift assignment), and arrest activity in explaining variation in the frequency with which officers use force. Analyses were conducted on 1,084 police officers employed in a large municipal police department. Use of force data were obtained from 477 official departmental reports from 2010. Results suggest that a small proportion of officers are responsible for a large proportion of force incidents, and that officers who frequently use force differ in important and significant ways from officers who use force less often (or not at all). Policy implications and directions for future research are discussed.

Keywords

police use of force, arrest activity, police discretion

Introduction

Police use of force, defined as "acts that threaten or inflict physical harm on suspects" (Terrill, 2003, p. 56), has been an important topic of research since the 1970s when it was first argued that the use of force is the defining characteristic of policing

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(Bittner, 1970). Specifically, it is the capacity of police to use "essentially unrestricted" nonnegotiable coercive force that distinguishes police from other occupations and it is what makes the police inherently controversial (Bittner, 1970; Reiss, 1971; Scharf & Binder, 1983; Sherman, 1980; Walker & Fridell, 1993). In large part, an understanding of the complexities and dilemmas of police work depends on an understanding of police use of force. Research on the control of police use of force is also important in that police use of force may influence citizens' attitudes and behaviors toward the police (Friedrich, 1980). In particular, use of force may erode confidence in the police (Ross, 1999) and the entire criminal justice system (U.S. Department of Justice, 1987). Indeed, use of force incidents have the ability to call into question, or even destroy, the legitimacy of police organizations (e.g., see Skolnick & Fyfe, 1993).

As such, many studies have examined the causes and correlates of police use of force (e.g., Alpert, 1989; Alpert, Dunham, & MacDonald, 2004; Bayley & Garofalo, 1989; Binder & Scharf, 1980; Bittner, 1970; Black, 1980; Friedrich, 1977; Fyfe, 1988; Garner, Schade, Hepburn, & Buchanan, 1995; Jacobs & Britt, 1979; Klinger, 1995; Muir, 1977; Reiss, 1968; Terrill & Mastrofski, 2002; Worden, 1995). These studies have covered topics such as how frequently police use force (Adams, 1995; Hickman, Piquero, & Garner, 2008), type(s) of force used (Alpert & Dunham, 1997; Klinger, 1995), excessive force (Klockars, 1995; Worden, 1995), deadly force (Alpert & Fridell, 1992; Fyfe, 1979; Geller & Scott, 1991; McElvain & Kposowa, 2008), and the correlates of use of force (Alpert, Dunham, & MacDonald, 2004; McElvain & Kposowa, 2008; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002; Terrill, Leinfelt, & Kwak, 2008; Worden, 1995). Among the consistent findings of this research is that police use of force, particularly that at the more severe end of the spectrum, is a statistically infrequent event (e.g., Alpert & Dunham, 1999; Garner et al., 1995; Garner, Buchanan, Schade, & Hepburn, 1996; Klinger, 1995; National Institute of Justice, 1999; Reiss, 1971) and that a small percentage of officers are responsible for a relatively large proportion of use of force incidents (e.g., Adams, 1999; Brandl, Stroshine & Frank, 2001; Dugan & Breda, 1991; Independent Commission on the Los Angeles Police Department, 1991; Lersch & Mieczowski, 1996). Although these two findings are generally agreed on, there are many questions that remain.

In particular, as noted by Hickman et al. (2008), the existing literature " . . . does not provide a reasonable basis for estimating . . . the correlates of force" (p. 572). Additional research on the relationship between use of force and officers' personal characteristics is also needed, as is research that examines the "individual, situational, and organizational factors related to variations in use-of-force levels . . . " (Adams, 1999, p. xii). Indeed, few studies have directly tested these relationships (compare to Terrill & Mastrofski, 2002). Identifying officers who frequently use force and understanding the characteristics that they have in common is important; this type of study may lead to specific policy recommendations in the areas of officer recruitment, selection, training, and discipline. As Terrill and Mastrofski (2002) stated

> Because most efforts to control police discretion in the use of force are focused on selecting and molding individual practitioners, it matters a great deal whether some officers are more coercive than others. (p. 218)

Accordingly, this study examines the role of officers' background characteristics, job characteristics (patrol area and shift assignment), and arrest activity in explaining variation in the frequency with which officers use force. We examine the differences between officers who seldom, if ever, use force, and those who use force more frequently. Patrol officers employed in a large municipal police department were included in the analyses and represent the unit of analysis ($N = 1{,}084$). Use of force data were obtained from official reports of the police department on all use of force incidents that occurred in 2010 ($N = 477$).

Literature Review

Variations in Police Use of Force Research

Studies of police use of force vary in at least three important ways. First, researchers have used different definitions of what police actions constitute "force." A major limitation of the extant research is that ". . . scholars have failed to conceptualize fully and to measure consistently police use of force" (Engel, 2008, p. 557). Initially, researchers focused on force that was deemed excessive (Friedrich, 1980; Reiss, 1968) or lethal (Fyfe, 1988). Since 1995, force has been most often conceptualized as a dynamic rather than static process and as a continuum that ranges from minor (e.g., verbal commands) to deadly (Garner et al., 1995, 1996; Klinger, 1995). Consequently, researchers have examined all forms of force (e.g., Garner, Maxwell, & Heraux, 2002; Terrill & Mastrofski, 2002) without regard to that which is "justified" or that which is deemed "excessive." While some may criticize the literature in its failure to distinguish that which is legal and that which is excessive (Smith, 2008), this body of work is based on the premise that "understanding all forms of force, not just excessive or lethal, is crucial within the context of Bittner's (1970) assertion that the defining aspect of the police role revolves around the capacity to use force" (Terrill et al., 2008, p. 58).

Second, researchers have used varying theoretical approaches in their quest to explain police use of force. These perspectives include organizational, sociological, and psychological theories. Organizational explanations of police use of force posit that characteristics of police agencies (e.g., formal organizational structure, culture) influence the rates at which officers use force (Friedrich, 1980; Worden, 1995). Sociological theories of police use of force focus on the structural characteristics of situations and hypothesize that force varies according to "who the citizen is" and "what the citizen does" (Terrill & Mastrofski, 2002, p. 217). Finally, a psychological (individual) perspective suggests that officers with certain characteristics are more likely to use force than others, that force varies according to "who the officer is."

Finally, studies on police use of force have used a variety of methodologies and data sources (Hickman et al., 2008; Wolf, Mesloh, Henych, & Thompson, 2009). Some studies are observational in nature (Bayley & Garofalo, 1989; Klinger, 1995; Paoline & Terrill, 2007; Reiss, 1968; Terrill & Mastrofski, 2002; Worden, 1995), whereas others have relied on citizen complaints (Brandl et al., 2001; Cao, 1999; Chevigny, 1969; Cohen & Chaiken, 1972; McCluskey & Terrill, 2005), self-reports of officers or arrestees (Edwards, 2000; Garner & Maxwell, 1999; Garner et al., 1996; Pate & Fridell, 1993), or official agency records or use of force reports (Alpert & Dunham, 1997, 1999; Morabito & Doerner, 1997; Ross, 1999; Terrill et al., 2008; Wolf et al., 2009). Of course, each methodology and data source has its own strengths and weaknesses. In particular, official records and reports may limit a researcher's ability to construct ideal operational definitions of critical variables; however, they may also have significant advantages over other forms of data (Wolf, Mesloh, & Henych, 2008). Namely, official records may be a more consistent and efficient data collection strategy (Terrill, 2005), capture more incidents of force over a longer time period (Pate & Fridell, 1993), and can be linked to specific officer data (e.g., race, age, sex, and years of experience). Agency reports also potentially allow for the inclusion of many (or all) officers in the department and an examination of variation among the officers. In essence, official reports allow for the collection of data from a potentially large number of officers and provide a means of comparing officers who use force at varying rates.

Officer-Level Explanations of Police Use of Force

Studies that have adopted the individual-level approach rest on the belief that certain characteristics of officers predispose them to behave in particular and predictable ways. In examining officer characteristics, the supposition is that certain "types" of officers are more (or less) likely to engage in the use of force. While this approach is only moderately successful as an overall explanation of police behavior (Worden, 1989; 1995), it is nevertheless important and may have important policy implications (Worden, 1990). For instance, this type of information may be useful in making recruitment and selection decisions, assigning officers to particular neighborhoods or beats, the provision of training, and monitoring officer behavior. In adopting an individual level approach, it is also important to consider other characteristics of officers, such as their job assignments and their work activities, which may attenuate the relationship between officer background characteristics and use of force. In the paragraphs that follow, we review the relevant literature on officers' background characteristics, job characteristics, and work activities that may explain variation in use of force among officers.

Officers' Background Characteristics

In their review of police use of force studies conducted in the past 20 years, Klahm & Tillyer (2010) report mixed results with regard to the affect of officer characteristics

in predicting use of force. The majority of use of force studies have found no gender differences in the likelihood or type of force used (Kaminski, Digiovanni, & Downs, 2004; McCluskey & Terrill, 2005; McCluskey, Terrill, & Paoline, 2005; Paoline & Terrill, 2007; Sun & Payne, 2004; Terrill & Mastrofski, 2002; Terrill et al., 2008). A few select studies have found male officers to be significantly more likely to use force (Garner et al., 2002) or use higher levels of force against suspects (McElvain & Kposowa, 2004).

Studies examining the relationship between officer race and use of force have also produced inconsistent findings. A few studies have documented that racial/ethnic minority officers use more force (Cohen & Chaiken, 1972; Sun & Payne, 2004) or are more likely to use force against members of their own race/ethnicity (Alpert & Dunham, 1999). More commonly, studies have found no relationship between officer race and use of force (e.g., Friedrich, 1977; Garner et al., 1995; Lawton, 2007; McElvain & Kposowa, 2004; McCluskey et al., 2005; McCluskey & Terrill, 2005; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002; Worden, 1995).

Younger officers are more likely to use force (Bayley & Garofalo, 1989; Cohen & Chaiken, 1972; Croft & Austin, 1987; Garner et al., 2002; McElvain & Kposowa, 2004). Some studies of police use of force that have included officer experience have found that inexperienced officers use force more often (Bayley & Garofalo, 1987; McElvain & Kposowa, 2004; Paoline & Terrill, 2007) or that they use increased levels of force (Terrill & Mastrofski, 2002), whereas other studies have demonstrated no relationship (Lawton, 2007; McCluskey & Terrill, 2005; McCluskey et al, 2005; Sun & Payne, 2004; Terrill et al., 2008).

In conclusion, the relationship between officer characteristics and force is often unclear and dependent on the measure of force used (Klahm & Tillyer, 2010). One possible reason for the conflicting findings with regard to demographic characteristics is that only a few studies have included a wide range of officer characteristics (Klahm & Tillyer, 2010). Previous research regarding the affect of officer characteristics has also been complicated by the failure to account for job characteristics and arrest activity, important variables that might attenuate the relationships between individual characteristics and police use of force.

Officers' Job Characteristics and Arrest Activity

Prior research suggests that the location/type of patrol assignment is related to use of force (Toch, 1995). This seems logical in that "some officers may be faced with a profusion of situations requiring the lawful exercise of force. These situations may result from locally high rates of crime, or from a proliferation of suspects who could assault police officers or physically resist legitimate arrests" (Toch, 1995, p. 100). High-crime areas may foster conditions where use of force is more frequently necessary. As Adams (1999) noted, ". . . an officer's work assignment may involve a high crime area that contains a high proportion of rebellious offenders" (p. 9). The time at which work is performed may also be correlated with use of force incidents. Like officer assignment to a high crime area, an officer's assignment to a high crime time

may affect the likelihood of involvement in force incidents. Serious crime and arrests are more likely to occur during the late evening/early morning hours. As such, an officer's shift (particularly shifts that cover the hours of 9:00 p.m. to 3:00 a.m.) may be related to the frequency with which officers use force.

Most instances of force occur during the course of arrests (Adams, 1999). Officers who frequently use force "may also be highly productive and may initiate a larger-than-usual amount of enforcement activity" (Toch, 1995, p. 100). According to this perspective, involvement in use of force incidents is a byproduct of arrests. Simply stated, officers who are more active (in terms of the number of arrests made) may be more often involved in use of force situations.

While the aforementioned studies have contributed to our knowledge on the roles that officer characteristics, job characteristics, and arrest activity play in determining police use for force, they are not without their limitations. For instance, studies have very *limited* information on officer characteristics, job characteristics, and arrest activity; none have multiple measures of these variables in the same study. As Adams (1999) explained, ". . . [T]he information that is most critical for policy decisions often is not available or is very difficult to obtain" (p. 2). Consequently, previous studies have not examined the way officer characteristics may be attenuated by job characteristics and activity levels.

The current study adds to the discourse on police use of force in several important and complementary ways. First, we examine variation in police use of force, without distinguishing between that which is deemed "justified" or "excessive." Second, we adopt an individual level approach to better understand the role that officer characteristics may play in explaining the frequency with which officers use force. In so doing, we include a more complete range of officer characteristics than that offered in many previous studies. Finally, important variables (i.e., job characteristics, arrest activity) that might attenuate the relationship between officer characteristics and use of force are included.

Method

Data

The data for this study were obtained from a large municipal police department. In 2010, the department employed approximately 2,000 sworn officers and served a population of approximately 600,000, of which approximately 40% was African American and 10% was Latino.

Two data sets were constructed and analyzed in this study. Data contained in each data set were obtained from various sources within the police department and were transformed into Statistical Package for the Social Sciences (SPSS) data files for analyses. The primary database analyzed here was organized with officers as the unit of analysis. Patrol officers assigned to patrol districts in 2010 were listed in the database (n = 1,084)[1] and for each officer the following variables were included: race (White/minority), sex, age, years of service, patrol district assigned to, assigned shift, total

Table 1. Frequency of use of Force by Officer.

	Total number of officers	Percentage
Number of use of force incidents officer was involved in 2010	1,084	99.9
0	769	70.9
1	186	17.2
2	69	6.4
3	33	3.0
4	16	1.5
5	6	0.6
6	1	0.1
7	1	0.1
8	1	0.1

Note: Percentage does not total 100 because of rounding.

number of arrests made by the officer in 2010 (i.e., number of subjects arrested), number of complaints received by the officer in 2010 (i.e., internal police department complaints and citizen complaints), and number of use of force incidents in which the officer was involved in 2010.

The use of force data were based on reports that were completed by supervisory officers when a use of force incident occurred. According to the official policy of the department, a use of force report was to be completed by a supervisor when an officer (a) discharges a firearm, (b) uses a baton, (c) discharges Oleoresin Capsicum (OC), (d) deploys a Taser, (e) uses any other type of force, which results in an injury, or a complaint if an injury, to a person, or (f) when a department canine bites a participant in the performance of their duty. Clearly, this is a relatively narrow definition of force as it does not include physical force (or verbal force, see Terrill & Mastrofski, 2002) that does not result in injury to a participant (or a complaint of injury from a participant). Accordingly, it is accurate to say that this study includes weapon-based forms of force as well as serious bodily force. As such, this study examines use of force at the more severe end of spectrum, which is more uncommon than other forms of force (Adams, 1999).[2]

A second and complementary database was organized with the use of force incident as the unit of analysis and identified the number of officers who were involved in each use of force incident and the type of force that each officer used in the incident. Both data sets included only incidents where force was used against people (incidents involving dogs and other animals were not included).

Frequency of Use of Force Incidents by Officers

As a starting point, it is useful to understand the frequency with which officers were involved in use of force incidents in 2010.[3] Table 1 shows the frequency distribution

of officers and the number of force incidents in which they were involved. Of the 1,084 officers, 769 officers (70.9%) were not involved in any force incidents in 2010, 186 officers (17.3%) were involved in one incident, 69 officers (6.4%) were involved in two incidents, and 58 officers (5.4%) were involved in three or more incidents. While these 58 "high-rate" officers (those who were involved in three or more force incidents) represent less than 6% of all officers who were assigned to the police districts, they accounted for approximately 40% of all the 2010 use of force incidents in which district officers were involved (155 out of 392 incidents) and approximately 32% of all use of force incidents in 2010 in which any officers were involved (155 out of 477 incidents). Clearly, in this department, as in others, most officers are not involved in any force incidents although a few officers account for a large proportion of all the force incidents. It is also interesting to note that these 58 officers accounted for approximately 13% (47 of 357) of the formal citizen complaints filed in 2010 and approximately 8% (15 of 196) of police department internal complaints.[4] Given these findings, it is worthwhile to examine how these high-rate officers differ from other officers. It is to this issue that attention now turns.

Differences Between "High-Rate" and "Low-Rate" Officers

What do officers who frequently use force have in common? How do these officers differ from officers who seldom, if ever, use force? To address these questions, analyses were performed whereby the 1,084 district officers were divided into two groups: "low-rate" officers (those who were involved in less than three force incidents in 2010) and "high-rate" officers (those who were involved in three or more incidents in 2010).[5] Statistical differences between the two groups were identified based on chi-square and *t* tests. Table 2 shows how the two groups of officers compare on the basis of their background characteristics, job assignments, and arrest activity.

Table 2 shows that high-rate officers are significantly more likely to be younger, to be male, to patrol higher crime areas and to be assigned to certain shifts (3:00 p.m. to 11:00 p.m. and 7:00 p.m. to 3:00 a.m.) compared with the low-rate officers. There are no significant differences across the two groups of officers on the basis of race or years of experience. Table 2 also reveals that low-rate officers make significantly fewer arrests than high-rate officers. The differences in arrest activity are striking. On average, each high-rate officer made 61.7 arrests in 2010. In contrast, on average, each low-rate officer made 25.9 arrests in 2010.[6]

In analyzing the supplementary data set, the type of force used by officers in each incident could be examined along with the actual number of officers who used force in each incident. Table 3 only includes officers who used force in at least one incident and officers may be represented in the tallies more than once, depending on in how many incidents they used force. The frequencies refer to the number of incidents in which force was used by officers.[7] As seen in Table 3, there are no significant differences among low-rate officers and high-rate officers in the type of force used.[8] To the

Table 2. Background Characteristics, District Assignment, Arrest Activity, and Involvement in Use of Force Incidents: High Rate and low Rate Officers (*N* = 1084).

Variable	Low rate officers		High rate officers		Chi-square or (*t*-value)
	N	%	*N*	%	
Officer race	1021	100.0	58	100.0	
0 = White	682	66.8	43	74.1	1.34
1 = minority	339	33.2	15	25.9	
Officer sex	1026	100.0	58	100.0	
0 = female	175	17.1	1	1.7	9.48**
1 = male	851	82.9	57	98.3	
Patrol area	1026	100.0	58	100.0	
1 = lowest crime	252	24.6	2	3.4	13.69**
2 = moderate crime	280	27.3	21	36.2	
3 = highest crime	494	48.1	35	60.3	
Shift	1026	100.1	58	100.0	
1 = first 7:00 a.m. to 3:00 p.m.	322	31.4	7	12.1	21.93**
2 = second 3:00 p.m. to 11:00 p.m.	401	39.1	25	43.1	
3 = Overlap 7:00 p.m. to 3:00 a.m.	95	9.3	15	25.9	
4 = third 11:00 p.m. to 7:00 a.m.	208	20.3	11	19.0	
Officer age					
N	1026		58		
M	36.9		33.9		(3.48**)
SD	8.4		6.3		
Range	21 to 63		23 to 50		
Officer years of service					
N	1026		58		
M	9.3		8.1		(1.82)
SD	6.4		4.7		
Range	0 to 35	1 to 23			
Total arrests made					
N	1026		58		
M	25.9		61.7		(–8.16**)
SD	22.3		32.9		
Range	0 to 131		8 to 154		

Note: Missing data excluded from table; percentages may not total 100 because of rounding.
*$p < .05$. **$p < .01$.

extent that there is any difference, low-rate officers tend to more often use "bodily force" or "OC" and high-rate officers tend to more often use a Taser. Of the 58 high-rate officers, 22 of them (37.9%) were trained and authorized to carry a Taser (vs. approximately 24% of police officers in the department).[9] Of the 79 times that these

Table 3. Type of Force Used: High Rate and Low Rate Officers ($N = 532$).

	Low frequency officers		High rate officers		
Variable	*N*	%	*N*	%	Chi-square
Type of force used	318	99.9	214	99.9	
Bodily force (no ecd)	174	54.7	110	51.4	4.11
Oleoresin Capsicum (no ecd)	68	21.4	40	18.7	$p = .39$
ECD	58	18.2	54	25.2	
Firearm (no ecd)	10	3.1	5	2.3	
Other	8	2.5	5	2.3	

Note: Percentage does not total 100 because of rounding. ECD= electronic control device

Table 4. Number of Officers who Used Force in Incident: High frequency and low Frequency Officers ($N = 392$).

	Incidents that involve low rate officers		Incidents that involve high rate officers		
Variable	*N*	%	*N*	%	*t*-value
Number of officers who used force	237	100.0	155	100.0	
1	183	77.2	111	71.6	–2.08*
2	46	19.4	33	21.3	
3	8	3.4	6	3.9	
4	0	0.0	4	2.6	
5	0	0.0	1	0.6	
M/*SD*	1.26/.51		1.39/.74		

*$p < .05$.

22 officers used any force, 33 times (42%) did *not* involve the use of a Taser (not tabled). Accordingly, although officers who are authorized to use a Taser are over-represented among the high frequency officers, the analyses suggest that they are over-represented not necessarily because of their use of the Taser in force incidents but because of their more frequent use of other types of force.

Table 4 shows the findings with regard to the number of officers who used force in each incident. Here, the frequencies refer to the number of incidents where force was used. Comparisons can be made between incidents that involved low-rate and high-rate officers. It is seen that the more officers that used force in the incident, the more likely that incident involved high-rate officers. On average, 1.26 officers were involved

Table 5. Relationships Between Officers' Characteristics, Arrest Activity, Assignment, and use of Force ($N = 1084$).

	Race	Sex	Age	Years of service	Patrol area	Shift	Number of arrests made	Use of force incidents involved in
Race	1.0							
Sex	–.06*	1.0						
Age	.12**	–.01	1.0					
Years of service	.10**	–.03	.71**	1.0				
Patrol area	–.03	.04	–.12**	.08*	1.0			
Shift	–.10**	.02	–.48**	–.61**	.04	1.0		
Number of arrests made	–.10**	.18**	–.22**	–.17**	.19**	.26**	1.0	
Use of force incidents involved in	–.08**	.15**	–.14**	–.12**	.13**	.19**	.46**	1.0

*$p < .05$. **$p < .01$.

in incidents that involved low-rate officers. On average, 1.39 officers were involved in incidents that involved higher rate officers ($p < .05$). Most notable is that of the 237 incidents where low frequency officers were involved, 183 incidents (77.2%) involved just one officer. Alternatively, of the 155 incidents that involved higher rate officers, 111 incidents (71.6%) involved just one officer.

Table 5 shows the zero-order correlations between the variables of interest, with the number of use of force incidents in raw form. In Table 5 it is seen that all of the included variables are related significantly to the frequency with which officers use force. Specifically, younger, less experienced White male officers who are assigned to higher crime areas and certain shifts (second and overlap shifts)[10] and those officers who made more arrests are the most likely to be involved in force incidents.

The zero-order correlations also allow for an examination of variables that may mediate the relationship between officer background characteristics and involvement in force incidents. In this regard, Table 5 shows that there is a high correlation between the shift officers are assigned to and officers' age/years of experience, with younger, less experienced officers assigned to the "third," "second," and overlap shifts.[11] As noted above, younger, less experienced officers are more likely to be more frequently involved in force incidents. This may be because of a combination of factors including that younger, less experienced officers are more likely to be assigned to higher crime districts, certain shifts, and are more likely to make more arrests. Arrest activity is also related significantly to shift.[12] Essentially, being assigned to higher crime districts and certain shifts may provide the opportunity to make more arrests, which may in turn lead to involvement in more use of force situations.

Table 6. OLS Regression Analysis of Frequency of Force Incidents ($N = 1078$).

Variable	Unstandarized coefficient	Standard error	Beta	*t*-ratio
Race	–.05	.06	–.02	–.85
Sex	.16	.07	.06	2.23*
Age	.00	.00	.01	.16
Patrol area	.05	.03	.04	1.60
Total number of arrests	.02	.00	.42	14.47**
Shift				
Second shift	.22	.08	.09	2.68**
Overlap shift	.37	.11	.12	3.54**
Third shift	.10	.07	.05	1.37
Constant	–.36	.20	—	–1.80
R^2	.23			
Adjusted R^2	.22			
N	1078			

*$p < .05$. **$p < .01$; missing data excluded from analyses.

As noted, the analyses indicate that male officers are more likely than female officers to be involved in the sort of force situations examined here. Although male officers are also more likely to make more arrests than female officers, male officers are not more likely to be assigned to higher crime districts or certain shifts (unlike younger, less experienced officers who are more likely to be assigned to these areas and shifts) nor are male officers more likely to be younger or have fewer years of experience. In essence, it appears that the greater involvement of male officers in use of force situations is not a result of their age, patrol area, or shift.

The zero-order correlations also suggest that White officers are more likely than minority officers to be involved in force incidents. However, the analyses reveal that this may have little to do with race and more to do with other factors that are related to officer race. Specifically, minority officers are more likely to be female (and female officers are less likely to be involved in force incidents), to be older (and older officers are less likely to be involved in force incidents), and to be assigned to the "first" and "third" shift (and officers assigned to these shifts are less likely to be involved in force incidents). Further, minority officers tend to make fewer arrests, also perhaps decreasing their likelihood of being involved in force situations.

To isolate the affect of each variable independently on the frequency with which officers are involved in force incidents, an ordinary least squares (OLS) regression equation was estimated.[13] The results are presented in Table 6.[14] Like the earlier results, these results show that by far, when holding all other included variables constant, the number of arrests made is the best predictor of involvement in use of force incidents.[15] Independent of all other variables, officers who make more arrests are

significantly more likely to be involved in more use of force incidents. Also predictive of force being used is officer sex. Male officers are more likely than female officers to be involved in more force situations. Finally, shift is a significant predictor of involvement in force incidents. All else equal, officers assigned to the overlap shift (7:00 p.m. to 3:00 a.m.) and second shift (3:00 p.m. to 11:00 p.m.) are more likely than officers assigned to the first shift (7:00 a.m. to 3:00 p.m.) to be involved in force situations.

Discussion

This article casts additional light on the relationship between police officers' personal attributes, job characteristics, arrest activity and officers' involvement in force incidents. Several findings of the study are important to highlight.

First, a small percentage of officers were responsible for most use of force incidents. In this study, high-rate officers (5.4% of all officers) accounted for about 32% of all recorded use-of-force situations in which any officer was involved and more than 40% of all use of force incidents if the analyses were limited to district officers. Of course, that a relatively small proportion of officers are responsible for a relatively large proportion of force incidents (and complaints) is a common finding in use of force research (Adams, 1999).[16] However, this information is helpful in that it has an obvious and straightforward implication: If a department wishes to address the use of force issue, it is necessary to focus on the behavior of a small group of officers. As noted in the Christopher Commission report, ". . . focusing efforts on a handful of officers can eliminate roughly 1 out of 7 excessive force incidents" (Adams, 1999, p. 9). In addition, this small percentage of officers was responsible for a disproportionate number of complaints, suggesting that these officers should be well known to police supervisors and administrators for reasons other than just the relatively high rates at which they use force.

Second, arrest activity is the strongest predictor of use of force. High-rate officers make over twice as many arrests as low-rate officers. Officers who make more arrests are significantly more likely to be involved in more force incidents, specifically those incidents that involve a weapon and/or bodily force that result in an injury or a complaint of an injury. However, some officers make a lot of arrests and are not involved in a lot of force incidents. The findings of this study are not unambiguous regarding the time ordering of the "arrest—force" relationship. It cannot be ruled out here that for some officers more arrests are made to justify the use of force.

Third, officers who use force with greater frequency differ in other significant ways from officers who use force less often. In particular, the multivariate analyses revealed that officers who more often use force are more likely to be male and work certain shifts (3:00 p.m. to 11:00 p.m.; 11:00 p.m. to 7:00 a.m.; the "second" and "overlap" shifts). Officer race and years of experience were not related to use of force in the high-rate and low-rate officer comparison or in the multivariate analyses. These findings are also consistent with previous research that has examined these variables (Croft, 1985; Friedrich, 1977; Garner et al., 1995; Terrill & Mastrofski, 2002; Worden, 1995).

Fourth, officers who are authorized to carry and use a Taser are overrepresented as high-rate officers; however, these officers are not necessarily overrepresented because of their use of the Taser. High-rate officers who are authorized to use a Taser often use force other than a Taser. Although this issue needs additional investigation, it may be that officers who volunteer for Taser certification are more willing to use (any type of) force compared with the low-rate officers who do not desire such training.

Finally, the more officers present during a use of force incident, the more likely it is that high rate officers are involved. Compared with officers who seldom use force, officers who use force frequently more often use force when more officers are involved. It is not entirely clear what this means (e.g., do calls for backup or particularly resistant suspects draw the officers who are most willing to use force?). Nevertheless, this finding is concerning as prior research indicates that when more officers are present, there is an increased chance of excessive force (e.g., Worden, 1995). As such, it is possible that not only are the high-rate officers responsible for more force incidents, but they are also responsible for more *excessive* use of force incidents.

Policy Recommendations

By identifying high frequency officers and understanding the characteristics that they share, this study provides information to consider when developing policy in the areas of officer recruitment, training, job assignments, and discipline. In terms of officer recruitment, the findings of this study suggest that police departments may wish to consider directly the skills, tendencies, strengths and weaknesses of male and female officers. That female officers less often use force suggests either a true performance difference or that female officers are less likely to need to use force (e.g., female officers may encounter less resistance from participants; see below). Regardless, the " . . . integration of police agencies along . . . gender lines will do much to reduce the incidence of police violence" (Adams, 1999, p. 7). Of course, at the same time, it is also important to not lose sight of the obvious—that the use of force is sometimes necessary in the performance of the police job.

Training has long been considered essential in controlling the use of force by the police, and the results presented in this study provide additional support for that notion. Most noteworthy is training as it relates to the use of the Taser and the process by which officers are selected for this training. In the study department, officers "self-select" to be trained on use of the Taser. It may be desirable to carefully screen officers who apply for training on the Taser, as placing a Taser in the hands of an already violence-prone officer may have many negative outcomes.

The results further suggest policy implications with regard to officer assignment. The study revealed that officers assigned to certain shifts (i.e., 3:00 p.m. to 11:00 p.m. and 7:00 p.m. to 3:00 a.m.) are involved in more use of force incidents. In this department, younger officers are more likely assigned to these shifts. Police administrators may want to carefully weigh this evidence when assigning officers to shifts. While many

departments use seniority systems, which dictate that younger officers are typically assigned to the least desirable beats and shifts, the results suggest that this practice may have implications for the frequency with which force is used in the department.

Finally, the findings of this study have implications with regard to officer discipline. As demonstrated here, a small proportion of officers are responsible for a disproportionate number of force incidents. This suggests that the most effective way of addressing use of force in a department is to address the force used by a small group of officers. This study also revealed that officers who use force at "high" rates were complaint-prone generally. These two findings support the adoption of an Early Warning System. Early Warning Systems are designed to identify violence-prone or problem-prone officers whereas remedial interventions are still an option. These systems most often involve monitoring citizen complaints and disciplinary records to identify officer performance problems (Adams, 1999) but could also reasonably include officer involvement in use of force incidents. With an Early Warning System, identification of high frequency use of force officers could be done internally and corrective intervention, including training and appropriate reassignment, could be taken swiftly.

Directions for Future Research

Although this study contributes to the use of force literature in several important ways, questions remain. Broadly speaking, there is much work to be done in specifying the complex dynamics of situations in which force is used. In particular, it is critically important to examine how participant resistance is perceived and acted on by officers. Participants may interpret the characteristics and actions of officers in such a way that they may be less likely to be compliant with officers and/or officers may interpret the characteristics and actions of participants in such a way that force is more likely to be used. In any case, a more comprehensive study would include not only "who the officer is" and "what the officer does" but also "who the citizen is" and "what the citizen does" (Terrill & Mastrofski, 2002). Given that officers were the unit of analysis in this study and that the primary purpose of the study was to examine how officer characteristics related to the use of force, participant resistance (as well as other participant characteristics) was not accounted for in the analyses.

Second, we found that officers with higher arrest activity levels use force significantly more often; however, the findings of the study are not clear with regard to the temporal order of the "arrest-force" relationship. Based on the results presented here, it cannot be ruled out that for some officers, in some situations, some arrests are made to simply administratively justify their use of force. Further research is needed to examine the dynamics of arrest situations to properly specify the temporal order of arrests and the use of force.

Finally and relatedly, it would be worthwhile to examine how the characteristics and actions of officers and participants, and the interaction between officers and participants, affect the *specific* type of force use by the officer (e.g., bodily force, Taser, OC)

in force situations. Are officers with certain characteristics more likely to use certain types of force against participants with certain characteristics? Like specifying the casual order of arrests and force, this issue would involve an examination of the dynamics of particular incidents and an identification of what informational cues are collected and acted on by officers when making decisions about the type of force to be used.

Limitations of the Study

Although this study contributes to a greater understanding of police use of force, it is not without its limitations. First, as noted, our definition of force is limited to the more severe end of the spectrum, which is less common than other forms of force (Adams, 1999). The current study used departmental reports of use of force incidents, and as such, we were bound to the definition of force as defined by department policy. More specifically, incidents of force were only captured in our study when an officer discharged a firearm, used a baton, discharged OC, deployed a Taser, used any other type of force, which results in an injury, or a complaint if an injury, to a person.

Second, our study was limited to one jurisdiction. It is possible that the findings reported here are not representative of the experiences of other agencies (or officers) throughout the United States. That said, Smith (2008) persuasively argues that understanding the frequency and predictors of force are best addressed at the local level. As he articulated, "such inquiries are better left to the local level where more manageable data collection efforts can be undertaken in response to locally perceived patterns, trends, or concerns" (Smith, 2008, p. 624).

Finally, our study used official use of force report forms completed by police supervisors. As Klinger (2008) cautioned, no source of data should be embraced " . . . without fully understanding their liabilities" (p. 615). Perhaps the biggest concerns in using official records of police use of force are that (a) the officers or supervisors required to complete them will either fail to complete the forms in the first place (leading to underreporting), or (b) officers or supervisors will fudge the details so the officers involved will be portrayed in a more favorable light (bias). It stands to reason that more serious forms of force, such as those captured in the current study, are much less likely to be underreported because policy typically requires supervisory attention in these cases, and failure to report such incidents may more likely lead to discipline. In addition, as Stetser (2001) explains, the bias may be mitigated by the fact that numerous officers (and occasionally witnesses) describe the incident so the reports of each are compared, ultimately providing a less biased account than would have been produced by any one person.

Without question, police use of force is a critical and complicated issue. As demonstrated in this study, research designed to cast light on the factors that affect the likelihood of officers using force may highlight factors to consider in controlling it.

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Notes

1. These officers were responsible for approximately 82% of all the use of force incidents that occurred in the entire department in 2010 (392 incidents out of 477 incidents).
2. It is important to note that official records of use of force may be biased by the person who completes them (Alpert & Dunham, 2004), but as Stetser (2001) explains, the bias may be mitigated by the fact that numerous officers (and occasionally witnesses) describe the incident so the reports of each are compared, ultimately providing a less biased account than would have been produced by any one person. Official reports of force may also be subject to underreporting, although this may depend on the particulars of departmental policy. It stands to reason that more serious forms of force, such as those captured in the current study, are much less likely to be underreported because policy typically requires supervisory attention in these cases, and failure to report such incidents may more likely lead to discipline.
3. Once again, throughout this discussion one must consider that "use of force incidents" include weapons-based force and more serious forms of bodily force (bodily force which resulted in injury or a complaint of an injury to a participant).
4. These complaints could be for any alleged police misconduct, not just excessive use of force. As such, these officers appear to be rather complaint-prone generally speaking.
5. No question, the designation of those officers with three or more use of force incidents in 2010 as "high-rate" officers is an arbitrary one and is guided more by empirical and statistical necessity than theory. Nevertheless, the rather simple classification scheme used here is not unlike that used by others (e.g., Worden, 1995).
6. This same pattern is also evident in the number and type of charges that were related to the arrests. High frequency officers issued more than twice the number of felony, misdemeanor, and noncriminal charges in their arrests than low frequency officers (results not tabled).
7. In 91.6% of incidents where officers used force, each officer used only one type of force. In only seven instances did an officer use a Taser (i.e., ecd) and another form of force (bodily force). Most common when more than one type of force was used was bodily force and OC. In these instances, the first type of force used by the officer was coded here.
8. When using a 2 x 2 table (ecd vs. other; high frequency, low frequency), chi-square statistical significance is still not achieved.
9. At each of the police districts in this department and during each of the three main shifts, there are six to eight officers who typically carry a Taser while on patrol.
10. On average, officers assigned to the first shift were involved in .26 force incidents, third shift officers were involved in .49 incidents, second shift officers were involved in .57 incidents, and overlap shift officers were involved in .95 incidents. Accordingly, for these analyses, shift is ordered as 1 = first (7:00 a.m. to 3:00 p.m.), 2 = third (11:00 p.m. to 7:00 a.m.), 3 = second (3:00 p.m. to 11:00 p.m.), 4 = overlap (7:00 p.m. to 3:00 a.m.).

11. On average, first shift officers are 43.3 years of age with 15.92 years of experience, third shift officers are 34.6 years of age with 6.6 years of experience, second shift officers are 34.1 years of age with 6.46 years of experience, and overlap shift officers are the youngest and least experienced at 31.8 years of age with 5.4 years of experience.
12. On average, officers assigned to the first shift made 20.9 arrests, third shift officers made 21.8 arrests, second shift officers made 33.6 arrests, and overlap shift officers made 38.3 arrests in 2010.
13. Given the skewed distribution of values of the "use of force" variable (Table 1), it was necessary to examine the standardized residuals. The corresponding histogram approximated a normal distribution as assumed by an OLS regression procedure. However, for the sake of comparison, a negative binomial regression equation was also estimated. The variables identified as significant in that equation were the same as the OLS regression results reported here. For these reasons, as well as for a straightforward interpretation of the results, the OLS regression results are presented here. The negative binomial regression results are available on request.
14. To avoid multicollinearity issues, length of service was not included in the regression equation. For the sake of comparison, the equation was run with length of service included instead of age and the results were virtually identical. None of the other bivariate correlation coefficients exceeded .48. To check for multicollinearity caused by the combination of two or more variables, variation inflation factors (VIFs) were examined. None of the VIFs obtained from the model were greater than 1.83, a value well below the generally accepted limit (Neter et al., 1996,p. 387).
15. In light of the finding that the number of arrests made by officers is the best predictor of involvement in force situations, additional analyses were conducted on this issue. In 2010 there were 109 officers who made 60 or more arrests over the course of the year. These 109 officers represent the top 10% of all officers in the department in terms of arrests made. Interestingly, only 26 of the high-rate force officers were among the 109 top arrest officers. Of the 58 high-rate force officers, 26 of them made 60 or more arrests during the course of the year. As such, although "arrests made" is the best predictor of involvement in force situations, it would be an error to conclude that high-rate force officers are the only officers who make a high number of arrests.
16. In the Christopher Commission report, 5% of the officers in over the 1987 to 1991 study period accounted for 20% of use of force reports (Independent Commission on the Los Angeles Police Department, 1991).

References

Adams, K. (1995). Measuring the prevalence of police abuse of force. In W. A. Geller & H. Toch (Eds.), *And justice for all: Understanding and controlling police abuse of force* (pp. 61-98). Washington, DC: Police Executive Research Forum.

Adams, K. (1999). What we know about police use of force. In K. Adams (Ed.), *Use of force by police: Overview of national and local data* (pp. 1-14). Washington, DC: National Institute of Justice.

Alpert, G. P. (1989). Police use of deadly force: The Miami experience. In R. G. Dunham & G. P. Alpert (Eds.), *Critical issues in policing*. (pp. 480-496). Prospect Heights, IL: Waveland Press.

Alpert, G. P., & Dunham, R. G. (1997). *The force factor: Measuring police use of force relative to suspect resistance*. Washington, DC: Police Executive Research Forum.

Alpert, G. P., & Dunham, R. G. (1999). The force factor: Measuring and assessing police use of force and suspect resistance. In K. Adams (Ed.), *Use of force by the police: Overview of national and local data*. (pp. 45-60). Washington, DC: National Institute of Justice.

Alpert, G. P., & Dunham, R. G. (2004). *Understanding police use of force: Officers, suspects, and reciprocity*. New York, NY: Cambridge University Press.

Alpert, G. P., Dunham, R. G., & MacDonald, J. (2004). Interactive police-citizen encounters that result in force. *Police Quarterly, 7*, 475-488.

Alpert, G. P., & Fridell, L. (1992). *Police vehicles and firearms: Instruments of deadly force*. Prospect Heights, IL: Waveland Press.

Bayley, D. H., & Garofalo, J. (1987). Patrol officers' effectiveness in managing conflict during police-citizen encounters. In *Report to the New York State Commission on criminal justice and the use of force* (Vol. III, May, pp. B1-B88). Albany: New York State Commission on Criminal Justice and the Use of Force.

Bayley, D. H., & Garofalo, J. (1989). The management of violence by police patrol officers. *Criminology, 27*(1), 1-27.

Binder, A., & Scharf, P. (1980). The violent police-citizen encounter. *Annals of the American Academy of Political and Social Science, 452*, 111-121.

Bittner, E. (1970). *The functions of police in modern society*. Washington, DC: U.S. Government Printing Office.

Black, D. (1980). *Manners and customs of the police*. New York, NY: Academic Press.

Brandl, S. G., Stroshine, M. S., & Frank, J. (2001). Who are the complaint-prone officers? An examination of the relationship between police officers' attributes, arrest activity, assignment, and citizens' complaints about excessive force. *Journal of Criminal Justice, 29*, 521-529.

Cao, L. (1999). *Curbing police brutality: What works? A reanalysis of citizen complaints at the organizational level, final report*. Washington, DC: National Institute of Justice.

Chevigny, P. (1969). *Police power: Police abuses in New York city.* New York, NY: Pantheon Books.

Cohen, B., & Chaiken, J. M. (1972). *Police background characteristics and performance*. New York, NY: Rand.

Croft, E. B. (1985). *Police use of force: An empirical analysis*. Unpublished doctoral dissertation, University of Michigan.

Croft, E. B., & Austin, B. A. (1987). Police use of force in Rochester and Syracuse, New York 1984 and 1985. In *Report to the New York State Commission on criminal justice and the use of force* (pp. C1-C128). Albany: New York State Commission on Criminal Justice and the Use of Force.

Dugan, J. R., & Breda, D. R. (1991). Complaints about police officers: A comparison among types and agencies. *Journal of Criminal Justice, 19*, 165-171.

Edwards, A. (2000). *Reported use of force by Queensland police: Findings from the 1999 Queensland Defendants Survey*. Brisbane, AUS: Queensland Criminal Justice Commission.

Engel, R. S. (2008). Revisiting critical issues in police use-of-force research. *Criminology & Public Policy, 7*, 557-561.

Friedrich, R. J. (1977). *The impact of organizational, individual, and situational factors on police behavior*. Unpublished doctoral dissertation, University of Michigan.

Friedrich, R. J. (1980). Police use of force: Individuals, situations, and organizations. *Annals of the American Academy of Political and Social Science, 452*, 82-97.

Fyfe, J. J. (1979). Administrative interventions on police shooting discretion: An empirical examination. *Journal of Criminal Justice, 7*, 302-323.

Fyfe, J. J. (1988). Police use of deadly force: Research and reform. *Justice Quarterly, 5*, 165-205.

Garner, J. H., Buchanan, J., Schade, T., & Hepburn, J. (1996). *Understanding the use of force by and against the police*. Washington, DC: National Institute of Justice.

Garner, J. H., & Maxwell, C. D. (1999). Measuring the amount of force used by and against the police in six jurisdictions. In K. Adams (Ed.), *Use of force by police: Overview of national and local data* (pp. 25-44). Washington, DC: National Institute of Justice.

Garner, J. H., Maxwell, C. D., & Heraux, C. G. (2002). Characteristics associated with the prevalence and severity of force used by and against the police. *Justice Quarterly, 19*, 705-746.

Garner, J., Schade, T., Hepburn, J., & Buchanan, J. (1995). Measuring the continuum of force used by and against the police. *Criminal Justice Review, 20*, 146-168.

Geller, W. A., & Scott, M. (1991). *Deadly force: What we know—A practitioner's desk reference on police-involved shootings in the United States.* Washington, DC: Police Executive Research Forum.

Hickman, M. J., Piquero, A. R., & Garner, J. H. (2008). Toward a national estimate of police use of nonlethal force. *Criminology & Public Policy, 7*, 563-604.

Independent Commission on the Los Angeles Police Department. (1991). *Report of the independent commission on the Los Angeles police department*. Los Angeles, CA: Author.

Jacobs, D., & Britt, D. (1979). Inequality and police use of deadly force: An empirical assessment of conflict hypothesis. *Social Problems, 26*, 403-412.

Kaminski, R., Digiovanni, C., & Downs, R. (2000). The use of force between the police and persons with impaired judgment. *Police Quarterly, 7*, 311-338.

Klahm, C. F., & Tillyer, R. (2010). Understanding police use of force: A review of the evidence. *Southwest Journal of Criminal Justice, 7*, 214-239.

Klinger, D. A. (1995). The micro-structure of nonlethal force: Baseline data from an observational study. *Criminal Justice Review, 20*, 169-186.

Klinger, D. A. (2008). On the importance of sound measures of forceful police actions. *Criminology & Public Policy, 7*, 605-617.

Klockars, C. B. (1995). A theory of excessive force and its control. In W. A. Geller & H. Toch (Eds.), *And justice for all: Understanding and controlling police abuse of force* (pp. 11-29). Washington, DC: Police Executive Research Forum.

Lawton, B. (2007). Levels of nonlethal force: An examination of individual, situational, and contextual factors. *Journal of Research in Crime and Delinquency, 44*(2), 163-184.

Lersch, K. M., & Mieczowski, T. (1996). Who are the problem-prone officers? An analysis of citizen complaints. *American Journal of Police, 15*, 23-44.

McCluskey, J. D., & Terrill, W. (2005). Departmental and citizen complaints as predictors of police coercion. *Policing: An International Journal of Police Strategies and Management, 28*, 513-529.

McCluskey, J. D., Terrill, W., & Paoline, E. A. (2005). Peer group aggressiveness and the use of coercion in police-suspect encounters*Police Practice and Research: An International Journal, 6*(1), 19-37.

McElvain, J. P., & Kposowa, A. J. (2004). Police officer characteristics and internal affairs investigations for use of force allegations. *Journal of Criminal Justice, 32*, 265-279.

McElvain, J. P., & Kposowa, A. J. (2008). Police officer characteristics and the likelihood of using deadly force. *Criminal Justice and Behavior, 35*, 505-521.

Morabito, E., & Doerner, W. (1997). Police use of less-than-lethal force: Oleoresin Capsicum (OC) spray. *Policing: An International Journal of Police Strategies and Management, 20*, 680-697.

Muir, W. K., Jr. (1977). *Police: Streetcorner politicians*. Chicago, IL: University of Chicago Press.

National Institute of Justice (1999). *Use of force by police: Overview of national and local data*. Washington, DC: U.S. Department of Justice.

Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman W., (1996). *Applied linear statistical models*. Chicago, IL: Irwin.

Paoline, E. A., & Terrill, W. (2007). Police education, experience, and the use of force. *Criminal Justice and Behavior, 34*(2), 179-196.

Pate, A. M., & Fridell, L. A. (1993). *Police use of force: Official reports, citizen complaints, and legal consequences*. Washington, DC: Police Foundation.

Reiss, A. J., Jr. (1968). Police brutality—Answers to key questions. *Trans-Action, 5*, 10-19.

Reiss, A. J., Jr. (1971). *The police and the public*. New Haven, CT: Yale University Press.

Ross, D. L. (1999). Developing and implementing a use-of-force policy. In C. Hemmens & E. Atherton (Eds.), *Use of force: Current practice and policy* (pp. 91-111). Lanham, MD: American Correctional Association.

Scharf, P., & Binder, A. (1983). *The badge and the bullet: Police use of deadly force.* New York, NY: Praeger.

Sherman, L. W. (1980). Causes of police behavior: The current state of quantitative research. *Journal of Research in Crime and Delinquency, 17*, 69-100.

Skolnick, J. H., & Fyfe, J. J. (1993). *Above the law: Police and the excessive use of force*. New York, NY: Free Press.

Smith, M. R. (2008). Toward a national use-of-force data collection system: One small (and focused) step is better than a giant leap. *Criminology & Public Policy, 7*, 619-627.

Stetser, M. (2001). *The use of force in police control of violence: Incidents resulting in assaults on officers.* New York, NY: LFB Scholarly Publishing LLC.

Sun, I., & Payne, B. (2004). Racial differences in resolving conflicts: A comparison between Black and White police officers. *Crime and Delinquency, 50*, 516-541.

Terrill, W. (2003). Police use of force and suspect resistance: The micro process of the police-citizen encounter. *Police Quarterly, 6(1)*, 51-83.

Terrill, W. (2005). Police use of force: A transactional approach. *Justice Quarterly, 22*(1), 107-138.

Terrill, W., Leinfelt, F. H., & Kwak, D. H. (2008). Examining police use of force: A smaller agency perspective. *Policing: An International Journal of Police Strategies and Management, 31*(1), 57-76.

Terrill, W., & Mastrofski, S. D. (2002). Situational and officer-based determinants of police coercion. *Justice Quarterly, 19*(2), 215-248.

Toch, H. (1995). The "violence-prone" police officer. In W. A. Geller & H. Toch (Eds.), *And justice for all: Understanding and controlling police abuse of force* (pp. 99-112). Washington, DC: Police Executive Research Forum.

U.S. Department of Justice. (1987). *Principles of good policing: Avoiding violence between police and citizens*. Washington, DC: Author.

Walker, S., & Fridell, L. (1993). Forces of change in police policy: The impact of Tennessee v. Garner on deadly force policy. *American Journal of Police, 11*, 97-112.

Wolf, R., Mesloh, C., & Henych, M. (2008). Cumulative force factor: Examining resultant suspect and officer injuries. *Law Enforcement Executive Forum, 8*, 65-79.

Wolf, R., Mesloh, C., Henych, M., & Thompson, L. F. (2009). Police use of force and the cumulative force factor. *Policing: An International Journal of Police Strategies and Management, 32*, 739-757.

Worden, R. E. (1989). Situational and attitudinal explanations of police behavior: A theoretical reappraisal and empirical assessment. *Law and Society Review, 23*, 667-711.

Worden, R. E. (1990). A badge and a baccalaureate: Policies, hypotheses, and further evidence. *Justice Quarterly, 7*, 565-592.

Worden, R. E. (1995). The "causes" of police brutality: Theory and evidence on police use of force. In W. A. Geller & H. Toch (Eds.), *And justice for all: Understanding and controlling police abuse of force* (pp. 31-60). Washington, DC: Police Executive Research Forum.

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