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POLICE EDUCATION, EXPERIENCE, AND THE USE OF FORCE

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Police researchers have devoted a considerable amount of empirical attention to testing the impact college education has on police performance. The counterargument to the education debate is that experience, in learning the police craft, is what contributes to differences in performance. The current study adds to both lines of research by examining the impact of education and experience on one of the core features of the police role: the use of coercion. The findings indicate that varying levels of education and experience are related to differences in the use of coercion in encounters with citizens. Encounters involving officers with any college education result in significantly less verbal force compared to those with a high school education. However, only those encounters involving officers with a 4-year degree result in significantly less physical force. Finally, encounters involving officers with greater experience result in less verbal and physical force.

Keywords: police; college education; experience; coercion; use of force

Educating police officers beyond a high school diploma has been a focal point of discussions about police since the beginning of the professional reform movement in the early 1900s. The supposition is that, in some way, college education relates to better police performance. Thus, for more than 30 years, researchers have attempted to disentangle the impact that college education has on police officers. This work has documented noteworthy differences between college-educated officers and their less educated peers, especially in terms of the way they relate to citizens (Cascio, 1977; Cohen & Chaiken, 1973; Kappeler, Sapp, & Carter, 1992), their attitudinal approaches to police work (Dalley, 1975; Roberg, 1978; Shernock, 1992; Smith, Locke, & Fenster, 1970), their communication skills (Carter, Sapp, & Stephens, 1989; Sterling, 1974; Worden, 1990), their daily commitment to policing (Cascio, 1977; Cohen & Chaiken, 1973), and their evaluations from supervisors (Carter et al., 1989; Finnegan, 1976). College education continues to be a focus of police research, despite the fact that a 2-year or 4-year degree is currently not required by most municipal police departments in the United States (Roberg & Bonn, 2004).

Countering the education argument is the contention that experience is the greatest teacher for a police officer. The notion here is that policing is best learned “on the job,” and necessary performance skills are developed by handling the various situational aspects of policing

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over time. Proponents of this line of reasoning, such as Bayley and Bittner (1997), explain that “policing is more like a craft than a science, in that officers believe that they have important lessons to learn that are not reducible to principle and are not being taught through formal education” (pp. 128-129). This suggests that differences in police performance are attributable to variation in experience.

The current study seeks to shed light on both lines of research by examining the relative impact of education and experience on an area that has yet to be a centerpiece of previous empirical inquiries, despite the fact that it is one of the central features of policing—the use of coercion.¹ Moreover, unlike previous research that has primarily examined physical and/or inappropriate force based on official data, we use observational data and concentrate on the full range of force (i.e., levels and types) that officers are likely to use in the course of their day-to-day duties. In highlighting the merits of observational research, Worden and Catlin (2002) state:

Direct observation enables researchers to examine incidents of the sort that may never or seldom appear in official records and to construct measures of key variables based on information that is recorded systematically (i.e., with respect to every incident, using the same criteria) by a neutral party. (p. 93)

THE HISTORY OF COLLEGE EDUCATION IN POLICING

The initial push toward a college education requirement for police was spearheaded by August Vollmer at the beginning of the professional reform era of policing (Walker, 1977). Vollmer’s attempt to single-handedly upgrade educational levels of ineffective and inefficient police officers progressed slowly (Shernock, 1992), and his national influence was not fully recognized until his work done as part of the National Commission on Law Observance and Enforcement (1931; also known as the Wickersham Commission; Walker, 1977). The Wickersham Commission suggested, in increasing the standards of police officers, that personnel should be equipped with a college education. However, as pointed out by Carter et al. (1989), the suggestion to educate police officers was just that, a suggestion for dealing with the complexities of crime, lacking a strong follow-up by police departments. Nonetheless, police reformers, police practitioners, and politicians alike continued to advocate for the merits of a college education for police personnel.

Some 30 years after the work of the Wickersham Commission, the issue of a college education was revisited by the 1967 President’s Commission on Law Enforcement and the Administration of Justice, which examined crime and criminal justice in American society. In addressing ways to improve all components of the criminal justice system, the commission made the following recommendation for police departments: “The ultimate aim of all police departments should be that all personnel with general enforcement powers have baccalaureate degrees” (President’s Commission on Law Enforcement and the Administration of Justice, 1968, p. 279). This recommendation differed from previous ones in that a course of action soon followed with the passage of the Omnibus Crime Control and Safe Streets Act of 1968 (Shernock, 1992), which in turn provided monies to fund criminal justice students in the form of the Law Enforcement Education Program (LEEP; Eskridge, 1989). LEEP was a major boost to the educational reform started some 60 years before, as it provided federal loans and scholarships to practitioners of criminal justice to attend college (Carter & Sapp, 1990).

Soon after, the National Advisory Commission on Criminal Justice Standards and Goals (1973) chartered a course of action for law enforcement educational standards and LEEP funds by setting a rough 2-year (2 years of college work requirement), 5-year (3 years of college work requirement), and 10-year (a 4-year baccalaureate degree requirement) plan for entry-level policing employees. Although these goals established a plan for police departments to improve the numbers of college-experienced officers, the quality of such education was beginning to be scrutinized (Roberg & Bonn, 2004). The National Advisory Commission on Higher Education for Police Officers criticized the fact that many college courses were nothing more than the technical training found in police academies (Sherman and the National Advisory Commission on Higher Education for Police Officers, 1978). Moreover, this commission recommended that education should be broader than simply police science, focusing more on social science education that could be applied to the policing occupation. In short, the commission wanted a more traditional approach to college education and less of a technical police focus.

Although there has been a long history of advocacy for educating American police officers, it has yet to become a bona fide occupational qualification (Carter & Sapp, 1990; Carter, Sapp, & Stephens, 1988; Roberg & Bonn, 2004). Much of this has to do with discussions that such a requirement would possibly discriminate against minority candidates (i.e., non-Whites), despite evidence to the contrary (i.e., non-White officers nationally have higher levels of education compared to White officers; Carter et al., 1989). Hickman and Reaves (2003), in a Bureau of Justice Statistics study of local law enforcement agencies, report that nationally only 1% of police agencies require a 4-year college degree to be hired as a police officer, whereas 6% require some college, and 8% require a 2-year degree. Nonetheless, many police departments have made college experience an informal requirement for hiring and advancement (Carter & Sapp, 1990). Finally, contemporary community policing philosophies that stress the need for officers to embrace a broader role orientation and work collaboratively with citizens (and other local government agencies that are responsible for community problems) have been hypothesized to be best suited for those with a college education (Carter & Sapp, 1992; Paoline, Myers, & Worden, 2000; Sherwood, 2000).

COLLEGE EDUCATION AND POLICE PERFORMANCE

The push for higher education in policing has always rested on the assumption that college experience would result in a "better" police officer. This was especially true during the professional reform of police when much scrutiny was placed on the corrupt and inefficient officer (Walker, 1977). The exact connection between college education and a better police officer was never clearly delineated, although it was implied that those with college experience would be more responsible and better suited for the complex problem of crime (Carter et al., 1989). It was not until the LEEP era in the 1970s that researchers began to empirically examine the impact (i.e., potential benefits) of college education in policing.

A series of police studies conducted primarily in the 1970s, using a number of different research strategies, have documented some of the differences that exist between college-educated officers and their less educated counterparts. This work has produced a few noteworthy performance-related differences between those with and without a college education. For example, college-educated officers have been found to have higher levels of citizen satisfaction ratings, as well as fewer citizen complaints, compared to their less educated peers

(Cascio, 1977; Cohen & Chaiken, 1973; Kappeler et al., 1992). College-educated officers have also been found to receive higher ratings from their superiors (Carter et al., 1989; Finnegan, 1976), as well as fewer injuries, preventable accidents, and fewer sick days (Cascio, 1977; Cohen & Chaiken, 1973). With respect to their approaches in the field, college-educated officers have been noted to be less authoritarian (Dalley, 1975; Smith et al., 1970), place a higher value on ethical behavior (Shernock, 1992), have more open belief systems (i.e., be less dogmatic) (Roberg, 1978), and be better verbal communicators (Carter et al., 1989; Sterling, 1974; Worden, 1990). The results of these studies tend to suggest that there are noticeable differences, and potentially positive policing attributes, associated with college education.

The debate over the virtues of college education, as well as the need for police departments to make it a formal requirement for hiring and promotion, are still receiving scholarly attention (Baro & Burlingame, 1999; Carlan & Byxbe, 2000; Decker & Huckabee, 2002; Eskridge, 1989; Kakar, 1998; Krimmel, 1996; Polk & Armstrong, 2001; Roberg & Bonn, 2004; Shernock, 1992). In disentangling the impacts of college experience more clearly, researchers have argued for more rigorous explorations of education, as well as the dependent variable of interest (i.e., usually an attitude, behavior, or both; Eskridge, 1989; Hudzik, 1978; Sherman & The National Advisory Commission on Higher Education for Police Officers, 1978; Worden, 1990). Other police researchers have pointed out some of the methodological flaws in past studies of education and performance, as they have relied on official departmental data, supervisory assessments, citizen evaluations, or individual officer perceptions (Eskridge, 1989; Shernock, 1992). Worden (1990) criticizes prior studies for their inconsistent findings, as well as their small sample sizes. In a different vein, others, such as Baro and Burlingame (1999), argue that college education is really not needed for police officers because of the way that most police departments operate (i.e., military model). The authors also note that preservice and in-service training may be more effective than a college education. Furthermore, Eskridge (1989) points out that college-educated officers are more susceptible to on-the-job boredom, as well as hostility from noneducated senior officers. These points clearly illustrate that the college education debate is still very much a part of police inquiries.

THE OTHER SIDE OF THE COIN: POLICE EXPERIENCE

The counterargument to the college education debate is that experience is what really matters. In fact, this is not just reserved for policing circles, as the “book smarts” versus “street smarts” dichotomy cuts across many disciplines and occupations. Proponents of experience, and the “policing as a craft” argument (Bayley & Bittner, 1997), focus on the benefits of repetitive exposure to the various situational contingencies of policing. Given that the most powerful explanatory factors of police behavior are the situational characteristics of police-citizen encounters (Riksheim & Chermak, 1993), it makes sense that varying levels of situational experiences will result in differences in the way encounters are handled by officers. The overall notion is that policing cannot be taught in a classroom (either college or a training academy) but must be learned on the streets over time. Bayley and Garofalo (1989), in a study of New York City patrol officers, found that experienced officers were identified by their peers as being the most skilled at dealing with conflict in encounters with citizens. The authors even contend that to the extent that

police departments teach officers ways to manage violence, “skilled” officers should be the ones that conduct the training. What proponents of police experience have not done, mainly because more experienced (and older) officers historically have not been college educated, is to examine the extent to which education plus experience translates into differences in performance.

THE CURRENT INQUIRY

The current study seeks to add to this body of knowledge by empirically examining the impact of education on one of the most central features of the police role—the use of coercion (Bittner, 1970). Although past studies have noted that college-educated officers are more likely to use “reasonable” force (Worden, 1996), are less likely to receive citizen complaints for inappropriate policing (Cascio, 1977; Cohen & Chaiken, 1973), and are less likely to fire their weapons (Fyfe, 1988), much less attention has been paid to the routine use of coercion in day-to-day encounters with citizens. Moreover, within studies of coercion, most have concentrated on physical and/or inappropriate force and have only recently begun to consider the verbal aspect of coercion (see, e.g., Klinger, 1995; Terrill, 2001, 2005). This is critical considering Muir’s (1977) seminal ethnographic study of what determines a “good” (i.e., professional) police officer. Muir explained that a good police officer was a function of one’s ability to effectively manage the use of coercion, much of which is verbal. According to Muir (1977), “coercion is a means of controlling the conduct of others through threats to harm” (p. 37). Muir further noted that in using coercion over citizens, “the professional response depended heavily on talk” and this “characteristically involved teaching through talk” (pp. 144-145). It is interesting that in the most comprehensive national study of police education, Carter et al. (1989) found that college-educated officers have better communication skills in dealing with the public.

The current inquiry, using observational data, captures the variation in the use of both verbal and physical coercion in daily encounters with citizens as it relates to varying levels of education and experience. Following the lead of past researchers (Hudzik, 1978; Kappeler et al., 1992; Shernock, 1992; Worden, 1990) who acknowledge the disadvantages of a dichotomous “college” or “no college” measure, or a continuous education measure (by year) that assumes that each year contributes equally to more education, we distinguish among officers with no college experience, some college experience, and those that have a baccalaureate degree and higher. In addition, this study examines the impact and potential interactive effects that police experience plays in the use of force encounter. As Bayley and Bittner (1997) point out, “experience sharpens the ability to read potential violence in an encounter,” and “the experienced officer has learned when to relax and when to attack” (p. 121). This strongly suggests that experience affects the types and levels of coercion used by police. The extent to which coercion is a function of education or experience, as well as education plus experience, will be the focus of the current empirical inquiry. In sum, this study examines (a) whether the impact of attending college versus obtaining a baccalaureate degree are the same (compared to those with only a high school education) with respect to the levels and types of force that officers use in encounters with citizens and (b) what role officer experience plays within this process.

METHOD

This study uses two data sets (i.e., systematic social observation [SSO] of patrol officers and in-person interviews of those officers) from the Project on Policing Neighborhoods (POPEN), which examined policing in Indianapolis, Indiana, and St. Petersburg, Florida, during the summers of 1996 and 1997, respectively.² Patrol observation was conducted in 12 patrol beats in each city. The sample of beats was matched as closely as possible across the two sites according to the degree of socioeconomic distress (measured as the sum of the percentages of families with children headed by a single female, the adult population that is unemployed, and the population below 50% of the poverty level)—an index similar to one used by Sampson, Raudenbush, and Earls (1997). The sample excluded those beats with the lowest socioeconomic distress (i.e., the most affluent areas); observations were concentrated in areas where police citizen interactions are most frequent.

Observation was conducted according to a SSO methodology. SSO systematizes field methods for teams of researchers who observe the object of study (e.g., police) in its natural setting. Researchers are trained to record events as they see and hear them and not rely on others to describe or interpret events. In effect, SSO involves the development of well-specified procedures that can be duplicated by many individuals rather than relying on the observations of a single researcher. Observers are trained to rely on similar cues when measuring varying forms of behavior (e.g., suspect demeanor) in an attempt to ensure consistency (see Mastrofski et al., 1998, for a detailed description).

Field observers were graduate students and honors undergraduates with a semester's training in systematic observation of the police. As part of this training, observers pretested the protocol in the field while conducting five training rides with a local department willing to permit observation. In addition to the training received at the home universities, observers conducted a training ride on arriving at each research site to acclimate themselves to the city, beat boundaries, and the organizational structure of the department.

POPEN field observers accompanied officers throughout a matched sample of work shifts in each of the selected beats (approximately 240 hr per beat). Busier times of the day and week were oversampled. Observers took brief field notes and spent the next day transcribing them into detailed accounts and coding them according to a SSO protocol. These researchers noted officers' encounters with the public, defined as face-to-face communication between officers and citizens that was more than a passing greeting. In total, field observers recorded contact with approximately 6,500 citizens in Indianapolis and 5,500 citizens in St. Petersburg, with events ranging from less than a minute to several hours. The current study focuses on the 3,356 encounters with people whom police or other citizens present placed in the role of suspect (wrongdoers, peace disturbers, or persons about whom complaints were received).

Data on officer characteristics were taken from in-person interviews that were conducted during officers' regular shifts at each district station in Indianapolis (i.e., north, south, east, and west) and at central headquarters in St. Petersburg. Trained researchers, who did not conduct field observations, were responsible for administering the structured survey instrument that was designed to obtain information on officers' personal characteristics, training and education, work experience, perceptions of their beats, and attitudes toward the police role. The interview consisted of a mix of questions posed by interviewers and checklists completed by respondents in the interviewers' presence. For example, when queried about

the relative importance of the law enforcement role, officers were provided with a checklist that contained response categories, such as *agree strongly*, *agree somewhat*, *disagree somewhat*, and *disagree strongly*. Participation was voluntary, and identification numbers were assigned for each respondent to ensure confidentiality. Of the 426 officers assigned to patrol in Indianapolis, 398 were surveyed, producing a completion rate of 93%. In St. Petersburg, 240 out of a possible 246 patrol officers were interviewed, a completion rate of 98%.

MEASURES

Dependent variable. From an outcome perspective (i.e., dependent variable), we were primarily interested in the routine use of coercion in day-to-day encounters with citizens, as opposed to the inappropriate application of force. That is, we wished to better understand the manner in which the police resolve conflicts with citizens by relying on varying forceful tactics, which include both verbal and physical actions. Within this context, force was defined as acts that threaten or inflict physical harm on citizens. Verbal force included commands and threats. A command involved a statement by an officer that was in the form of an order (e.g., wait right here, drop the knife, leave now); threats involved a command followed by an explicit or implicit intended consequence for not complying (e.g., drop the knife or you are going to get maced, if I have to tell you again you are going in). Physical force included any form of physical restraint or application, including pat down searches, firm grips, handcuffing, pain compliance techniques, takedown maneuvers, and impact methods. Pat downs involved instances when an officer physically touched a suspect as part of a cursory search; handcuffing involved placing restraints on a suspect's wrists; a firm grip included an officer grabbing a suspect in a forceful manner with a tight grip; pain compliance techniques involved holds that cause pain to a specific body part (e.g., hammerlock, wristlock, finger grip, carotid control, and bar arm control); takedown maneuvers included instances when suspects were thrown, pushed, or shoved to the ground, against a wall, against a car or any other surface (leg sweeps also included); and impact methods included hitting a suspect with the hands, fists, feet, legs, or any other part of the body (e.g., slapping, punching, kicking), as well as the use of any item that was not part of the body (e.g., flashlights, batons, police radios, stun guns, macing).³

For each analysis, we use the highest level of force applied in each encounter. Furthermore, there is no attempt to distinguish whether the application of force satisfied a particular standard (e.g., excessive versus not excessive). Although certainly worthwhile, such an inquiry is an entirely different research endeavor (see, for instance, Adams, 1996). By limiting the analysis in this way, no judgment is made as to whether police overused or underused force in any instance. We can, however, characterize patterns in the distribution of force and speak to questions about economy in the use of force, which Bittner (1970) noted as the defining value of contemporary Western society for good policing.

Independent variables. Several different control variables are considered in the multivariate analyses that follow so as to isolate the effects of the primary variables of interest: education and experience. To ensure a properly specified, yet parsimonious, model, we include those variables that have most consistently been found to be predictors of force in previous studies and those that have garnered the greatest theoretical interest (see Adams, 1996; Garner, Maxwell, & Heraux, 2002; Terrill, 2005). Three variable clusters are included in the

analytical model. The first involves officer characteristics, which includes the two primary variables of interest (i.e., education, experience), as well as gender and race. We hypothesize that greater levels of education and experience will lead to less force. Conversely, male officers are expected to resort to higher levels of force. The hypothesized effect for officer race is unspecified given the inconsistency of prior research in this area (see Terrill, 2001).

The second grouping contains suspect presentation measures (i.e., displays of resistance, conflict with other citizens on the scene, possession of a weapon, evidence present,⁴ arrest occurrence, alcohol use, and demeanor) and sociodemographic characteristics (i.e., gender, race, age, and wealth). With the exception of age and wealth, each of these measures is coded so as to predict a positive relationship. For instance, it is hypothesized that officers will be more coercive toward suspects who are resistant, arrested, male, non-White, and disrespectful, as well as those who show conflict toward others at the scene, have a weapon, display evidence of wrongdoing, and display signs of alcohol or drug use. Conversely, suspect age and wealth are coded so as to posit an inverse relationship; officers are expected to use less force on older suspects and those with a higher level of wealth.

The final cluster contains general encounter characteristics, including the number of individuals on the scene (officers and bystanders), the initiating party, problem type, and site. Both the number of officers and citizen bystanders present on the scene of an encounter can influence the likelihood or level of police force, although the direction of the effect is open to interpretation. In one respect, additional officers may lead to increased force, as the observed officer may be inclined to raise the level knowing he or she has sufficient backup should the suspect ultimately resist. Conversely, backup support from fellow officers may lower the level of force as the observed officer may feel less of a need to take control of the suspect, as others are on the scene to help out should the suspect increase the level of resistance. Similar effects may take shape in terms of bystanders. As the number of citizens increase, an officer may feel the need to demonstrate being in control by applying more force. However, additional bystanders also mean an increased number of potential witnesses to the force being applied.

Furthermore, it was hypothesized that when the encounter was officer initiated, police legitimacy would be lower than when the officer was invited or called on (Reiss, 1971). Consequently, in officer-initiated situations, police may be quicker to assert their authority and to do it more forcefully. The type of problem is included to account for those cases most often associated with an increased likelihood of force (see Bayley & Garofalo, 1989; Fyfe, 1988). Finally, differences between the two departments were hypothesized. Indianapolis management stressed an aggressive get-tough policy designed around crackdowns and aggressive stops. By contrast, St. Petersburg officials emphasized problem solving and community organizing to a greater extent. As a result, it was expected that Indianapolis officers would resort to force more readily. Variable descriptions and coding schemes are offered in Table 1, followed by descriptive statistics in Table 2.

RESULTS

The first set of analyses examines the distribution of force across varying levels of education. Simple cross-tabulations detail how often officers of different educational levels (high school, some college, and bachelor's degree and higher) used any type of force

TABLE 1: Description of Variables Predicting the Use of Force

<i>Variable</i>	<i>Hypothetical Effect</i>	<i>Definition</i>
Officer characteristics		
Education	-	Level of education: 0 = <i>high school</i> , 1 = <i>some college, but no bachelor's degree</i> , 2 = <i>bachelor's degree or higher</i>
Experience	-	Years of experience
Male	+	1 = <i>male</i> , 0 = <i>female</i>
Non-White	+/-	1 = <i>non-White</i> , 0 = <i>White</i>
Suspect characteristics		
Resistance	+	Level of suspect resistance: 1 = <i>none</i> , 2 = <i>passive</i> , 3 = <i>verbal</i> , 4 = <i>defensive</i> , 5 = <i>active</i>
Conflict	+	Suspect in conflict with another citizen on scene: 1 = <i>none</i> , 2 = <i>calm verbal</i> , 3 = <i>agitated verbal</i> , 4 = <i>threatened assault</i> , 5 = <i>assault</i>
Weapon	+	1 = <i>suspect has weapon</i> , 0 = <i>all other</i>
Evidence	+	Summative index (0 to 7), evidence of the target's or requester's violation of the law
Arrest	+	1 = <i>suspect is arrested</i> , 0 = <i>not arrested</i>
Male	+	1 = <i>male</i> , 0 = <i>female</i>
Non-White	+	1 = <i>non-White</i> , 0 = <i>White</i>
Age	-	1 = 0 to 5 years, 2 = 6 to 12 years, 3 = 13 to 17 years, 4 = 18 to 20 years, 5 = 21 to 29 years, 6 = 30 to 44 years, 7 = 45 to 59 years, 8 = 60 or more years
Wealth	-	Observed level of wealth: 1 = <i>chronic poverty</i> , 2 = <i>low</i> , 3 = <i>middle</i> , 4 = <i>above middle</i>
Drug/alcohol	+	1 = <i>suspect shows behavioral effects of drug/alcohol</i> , 0 = <i>all other</i>
Demeanor	+	1 = <i>suspect disrespectful to police in language or gesture</i> , 0 = <i>all other</i>
Encounter characteristics		
Number of officers	+/-	Number of officers on scene
Number of bystanders	+/-	Number of citizen bystanders on scene
Proactive encounter	+	1 = <i>officer initiates encounter</i> , 0 = <i>all other</i>
Problem type	+	1 = <i>problem involves a dispute, traffic incident, or suspicious person</i> , 0 = <i>all other</i>
Site	+	1 = <i>Indianapolis</i> , 0 = <i>St. Petersburg</i>

(verbal and/or physical). At this simple bivariate level, there is a significant difference in force usage by educational level ($\chi^2 = 22.706$, $p = .000$). As seen in Table 3, the primary difference lies between the high school and college categories. Although 67.8% of the encounters involving officers with a high school education resulted in a forceful outcome, the percentage dropped to 55.9 and 56.7 for those with some college and those with a 4-year degree, respectively. Table 4 breaks force down into the specific types used. Once again, the chi-square shows a significant difference among varying education levels ($\chi^2 = 27.440$, $p = .000$). The key difference is found when looking across educational levels in relation to verbal force. Although the verbal force percentages are nearly identical (35%) for those encounters involving officers with some college or a bachelor's degree, the percentage increases (46.6%) for those encounters involving officers with a high school education. It is interesting that the rate of physical force is steady across all education levels.

Tables 5 and 6 present a similar force breakdown to those found in Tables 3 and 4, with experience levels replacing education. For illustrative purposes, experience was coded into a categorical variable based on extant research that has noted critical time periods in officer development (Brown, 1988; Van Maanen, 1974). As Table 5 indicates, force is used least

TABLE 2: Descriptive Statistics of All Model Variables

<i>Variable</i>	<i>Range</i>	<i>M</i>	<i>SD</i>
Dependent variable			
Force	0 to 2	0.787	0.764
No force, <i>n</i> = 1,411			
Verbal, <i>n</i> = 1,246			
Physical, <i>n</i> = 699			
Officer characteristics			
Education	0 to 2	1.275	0.699
Experience	0 to 32	7.732	5.968
Male	0 to 1	0.847	0.359
Non-White	0 to 1	0.207	0.405
Suspect characteristics			
Resistance	1 to 5	1.208	0.655
Conflict	1 to 5	1.133	0.566
Weapon	0 to 1	0.015	0.122
Evidence	0 to 8	1.323	1.699
Arrest	0 to 1	0.110	0.313
Male	0 to 1	0.720	0.448
Non-White	0 to 1	0.632	0.482
Age	1 to 8	5.243	1.349
Wealth	1 to 4	2.236	0.561
Drug/alcohol	0 to 1	0.211	0.408
Demeanor	0 to 1	0.096	0.294
Encounter characteristics			
Number of officers	1 to 26	2.214	1.609
Number of bystanders	1 to 99	4.204	5.627
Proactive encounter	0 to 1	0.447	0.497
Problem type	0 to 1	0.474	0.499
Site	0 to 1	0.560	0.496

TABLE 3: Distribution of No Force/Force by Education

	<i>High School</i>		<i>Some College</i>		<i>Bachelor's Degree</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
No force	157	32.2	644	44.1	610	43.3
Force	330	67.8	815	55.9	800	56.7
<i>N</i>	487		1,459		1,410	

Chi-square = 22.706, *p* < .001

frequently (51%) in encounters involving officers with the most experience (11 or more years). Somewhat surprising, though, force was most frequently used in encounters involving officers with 3 to 5 years of experience, not those involving the most inexperienced officers (2 or less years on the job; 65.3% vs. 59.0%, respectively). A further examination of these two less experienced groups in terms of verbal and physical force (Table 6) reveals a similar pattern to the general force/no-force finding. Here, however, we see that the distinction is primarily at the verbal force level (41.9% vs. 36.6%). All experience groups use physical force at a similar percentage (22% to 23%), except for the most experienced group (i.e., those with more than 10 years on the job), where force is used 15% of the time.

TABLE 4: Distribution of Force Types by Education

	<i>High School</i>		<i>Some College</i>		<i>Bachelor's Degree</i>	
	n	%	n	%	n	%
No force	157	32.2	644	44.1	610	43.3
Verbal	227	46.6	520	35.6	499	35.4
Physical	103	21.1	295	20.2	301	21.3
<i>N</i>	487		1,459		1,410	
Chi-square = 27.440, $p < .001$						

TABLE 5: Distribution of No Force/Force by Experience

	<i>0 to 2 Years</i>		<i>3 to 5 Years</i>		<i>6 to 10 Years</i>		<i>11 or More Years</i>	
	n	%	n	%	n	%	n	%
No force	282	41.0	249	34.7	472	42.3	408	49.0
Force	406	59.0	469	65.3	645	57.7	425	51.0
<i>N</i>	688		718		1,117		833	
Chi-square = 22.706, $p < .001$								

TABLE 6: Distribution of Force Types by Experience

	<i>0 to 2 Years</i>		<i>3 to 5 Years</i>		<i>6 to 10 Years</i>		<i>11 or More Years</i>	
	n	%	n	%	n	%	n	%
No force	282	41.0	249	34.7	472	42.3	408	49.0
Verbal	252	36.6	301	41.9	393	35.2	300	36.0
Physical	154	22.4	168	23.4	252	22.6	125	15.0
<i>N</i>	688		718		1,117		833	
Chi-square = 43.135, $p < .001$								

We turned next to a set of multivariate analyses to examine the impact of education and experience on force, while controlling for a host of other factors posited or previously shown to influence force. Although bivariate analyses (i.e., cross-tabulations) provide an initial assessment of those factors related to force, they do not allow for an assessment of independent effects. In other words, it is quite possible that other factors, such as the extent to which college-educated officers versus non-college-educated officers encounter resistant suspects, may account for why education appears to matter. Properly accounting for such potential influences requires a multivariate approach, which serves to isolate the effects of each variable on force while statistically controlling other factors. In this sense, should the bivariate findings remain (i.e., more education and experience reduces force usage) in the multivariate analyses, one can have confidence that such a reduction in force usage can be attributed to education and experience as opposed to some alternative factor (i.e., suspect resistance).

TABLE 7: Ordered Probit of Police Use of Force—Main Effects

Variable	Main Effects		Interaction Effects	
	b	SE	b	SE
Officer characteristics				
Education				
Some college	-0.166*	.063	-0.143*	.066
BA/BS	-0.273*	.065	-0.239*	.067
Experience				
Some College X Experience	-0.014*	.004	-0.014*	.004
BS/BA X Experience			0.014	.008
			0.001	.010
Male	0.072	.058	0.072	.058
Non-White	0.047	.051	0.039	.051
Suspect characteristics				
Resistance	0.244*	.038	0.244*	.038
Conflict	0.131*	.038	0.131*	.038
Weapon	0.784*	.170	0.791*	.170
Evidence	0.063*	.012	0.063*	.012
Arrest	1.364*	.075	1.365*	.075
Male	0.259*	.047	0.258*	.047
Non-White	0.139*	.044	0.144*	.044
Age	-0.095*	.016	-0.095*	.016
Wealth	-0.144*	.037	-0.141*	.037
Drug/alcohol	0.362*	.053	0.365*	.053
Demeanor	-0.040	.076	-0.039	.076
Encounter characteristics				
Number of officers	0.065*	.015	0.064*	.015
Number of bystanders	-0.002	.004	-0.002	.004
Proactive encounter	0.217*	.044	0.212*	.044
Problem type	0.043	.042	0.043	.042
Site	0.192*	.044	0.183*	.044
Threshold 1	0.044	.175	0.066	.175
Threshold 2	1.272	.176	1.294	.177
N		3,356		3,356
Pseudo R ²		.253		.254

Note. *b* represents the regression coefficient; *SE* represents the standard error of each coefficient.

* $p < .05$.

In each of these models, education is a categorical variable (coded high school, some college, 4-year degree), whereas experience is an interval measure (coded by years of experience on the job). The first analysis uses an ordinal-level dependent measure of coercion and assesses the role of education and experience both independently and jointly. McKelvey and Zavoina (1975) have demonstrated the inherent weakness of using linear regression techniques with ordinal ranked dependent measures. Specifically, they note that such models underestimate the effects of independent variables on the dependent measure. As a result, the preferred model for an ordinal ranked dependent measure is the ordered probit (Jarjoura, 1993). As shown in Table 7, two models are presented: a main effects model where the effects of education and experience are examined separately and a model that includes interaction terms to test whether a combination of education and experience affect the level of coercion applied.

Beginning with the main effects model in Table 7, we see that the educational variables and the experience measure are both statistically significant ($p < .05$). More specifically, using high school as the reference category, encounters involving officers with some college

education, as well as encounters involving officers with a 4-year degree, are significantly less likely to involve higher levels of force ($b = -.166$ and $b = -.273$, $p < .05$, respectively). In addition, we see that encounters handled by officers with greater experience are also less likely to lead to enhanced levels of force ($b = -.014$, $p < .05$). Turning to the interaction effects model, we see that the joint effect of education and experience is not statistically significant and offers virtually nothing to the overall model in terms of explained variance.⁵ It is not surprising that given previous use of force study findings (see, e.g., Garner et al., 2002; Terrill & Mastrofski, 2002), a large number of the situational variables in the model are statistically significant.

Although the use of an ordinal measure of coercion taps into the levels of forcefulness within a given individual encounter, it does not distinguish the effects of the independent variables on the specific type of force used. As a result, we estimated a series of multinomial logistic models, using no force as the reference category, to assess whether the impact of education and experience differs by verbal and physical force. Because this variable takes on more than two discrete values that cannot be naturally ordered, a multinomial logit model is the appropriate statistical technique (Aldrich & Nelson, 1984; Long, 1997). Similar to the ordered probit model, we estimated a main effects and interaction effects model.

As shown in the main effects model of Table 8, differing effects with respect to the role of education and type of force used are uncovered. Although encounters involving officers with either some college ($b = -.555$, $p < .05$) or a 4-year degree ($b = -.728$, $p < .05$) resulted in significantly less verbal force than those with a high school education, only those encounters involving officers with a bachelor's degree ($b = -.527$, $p < .05$) resulted in significantly less physical force.⁶ In other words, in terms of verbal force, officers with any college education, ranging from a single class to a 4-year degree, rely on verbal commands and threats less often (holding all else constant) than officers with a high school education. However, it is only those officers with a 4-year degree that derive the potential benefit of handling police-suspect encounters with less physical force. Such a finding illustrates the importance of conducting multivariate analyses and ensuring adequate control of alternative influences on forceful behavior. Examining force at the bivariate level only (Table 4) shows that encounters involving officers with a 4-year degree were more likely to result in physical force when compared to those involving officers with some college or a high school degree (although the differences are small). However, by introducing and statistically accounting for a host of additional factors posited to influence force, the effect of having a 4-year degree reduces officer reliance on the use of physical force.

Finally, similar to the findings from the ordered probit analysis, experience is also a significant predictor of force. In this instance, encounters involving officers with greater experience leads to both less verbal and less physical force ($b = -.021$ and $b = -.041$, $p < .05$, respectively). In addition, a test for interaction effects between education and experience (see interaction effects model in Table 8) found neither term to be statistically significant and neither added to the overall explained variance of the model.

DISCUSSION

The findings herein indicate that both college education and experience matter with respect to police use of force. In terms of education, the effect varies depending on the type of force used. For example, simple exposure to higher education (i.e., from attending college through

TABLE 8: Multinomial Logit of Police Use of Force—Main and Interaction Effects

Variable	Main Effects				Interaction Effects			
	Verbal		Physical		Verbal		Physical	
	b	SE	b	SE	b	SE	b	SE
Officer characteristics								
Education								
Some college	-0.555*	.130	-0.308	.179	-0.548*	.138	-0.275	.187
BA/BS	-0.728*	.134	-0.527*	.183	-0.710*	.140	-0.441*	.190
Experience								
Some College	-0.021*	.007	-0.041*	.011	-0.018*	.008	-0.040*	.012
X Experience					0.002	.017	0.043	.026
BA/BS X Experience					-0.008	.021	-0.004	.029
Male	0.058	.115	0.189	.163	0.059	.116	0.189	.163
Non-White	0.169	.104	0.046	.143	0.167	.104	0.046	.143
Suspect characteristics								
Resistance	0.767*	.111	0.773*	.124	0.769*	.111	0.775*	.124
Conflict	0.491*	.093	0.292*	.125	0.491*	.093	0.294*	.125
Weapon	0.976*	.461	2.117*	.471	.976*	.461	2.139*	.471
Evidence	0.172*	.026	0.116*	.034	0.172*	.026	0.118*	.034
Arrest	-1.469*	.297	2.474*	.172	-1.468*	.297	2.482*	.172
Male	0.164	.091	0.917*	.145	0.165	.091	0.912*	.145
Non-White	0.169	.088	0.407*	.125	0.167	.088	0.418*	.126
Age	-0.107*	.032	-0.271*	.044	-0.108*	.032	-0.274*	.045
Wealth	-0.232*	.075	-0.370*	.104	-0.231*	.075	-0.364*	.104
Drug/alcohol	0.423*	.114	0.980*	.140	0.424*	.114	0.986*	.140
Demeanor	0.054	.162	-0.188	.215	0.052	.162	-0.190	.216
Number of officers	-0.158*	.038	0.200*	.038	-0.159*	.038	0.196*	.038
Number of bystanders	-0.002	.010	-0.013	.011	-0.002	.010	-0.014	.011
Proactive encounter	0.283*	.089	0.461*	.118	0.278*	.089	0.445*	.119
Problem type	0.164	.084	0.052	.115	0.166*	.084	0.051	.116
Site	0.425*	.088	0.377*	.121	0.419*	.089	0.352*	.121
Intercept	-0.381	.370	1.832	.502	-0.396	.371	1.853	.504
N			3,356				3,356	
Pseudo R ²			.332				.332	

Note. *b* represents the regression coefficient; *SE* represents the standard error of each coefficient.

**p* < .05.

obtaining a 4-year degree) may offer police officers a greater appreciation or understanding for the underlying coercive nature of varying forms of verbal force (i.e., ordering and threatening suspects). Clearly, such behavior is a necessary element of police work, but as shown here, officers with some form of college education are able to go about their day-to-day activities with less reliance on such coercive actions than their high school-educated counterparts. However, the findings further indicate that exposure alone, in the form of just attending college, is not enough in relation to the use of physical force. That is, only officers receiving the benefit of a 4-year degree were significantly less likely to rely on physical forms of force in their daily encounters with the public. In other words, it appears that simply attending college is not enough when it comes to less reliance on physical force. In this respect, actually completing a 4-year program is most beneficial.

The findings also indicate that experience on the job is important when it comes to reducing force usage in everyday encounters. Officers with more experience relied less

often on both verbal and physical force. Hence, regardless of the educational level of the officer, more experience leads to less force, both verbal and physical. However, although having education and experience both affect force usage, there is no added value in having both as the interaction models show. In other words, having either education or experience leads to less force.

From a policy perspective, the findings indicate that police departments should consider adopting some form of a college education requirement and perhaps even a 4-year degree requirement. Furthermore, given the effect of experience on force uncovered in this study, departments may wish to consider assigning patrol officers based on experience levels. Of course, this may be difficult in light of union contracts and a natural tendency for officers to move away from patrol work (and particularly certain shifts) as their seniority increases. Nonetheless, some well-placed veterans across varying areas and shifts, especially the later shifts in higher crime areas where increased levels of force often occur, may help produce better results in terms of less force. The coordination of senior and junior officers may help to teach the craft to less experienced peers in ways that training facilities can not. In doing so, departments might work to provide incentives (e.g., pay) to more experienced officers who might normally opt out of such higher crime areas and/or later shifts.

Although the current study finds important differences in the use of coercive force, based on varying educational and experience levels, it is not without its limitations. First, the departments chosen for this research are representative of most medium-sized police agencies, and both employ officers with a wide range of education and experience. In that sense, the findings from this study would generalize to many police departments in the United States, but perhaps not to rural or large metropolitan police departments where the demographics of officers, as well as the types of citizens and problems encountered, might differ. Future research should seek to replicate these findings across a wide array of departments in other geographical areas and of varying size and complexity.

Second, although our education measure takes into consideration previous recommendations to distinguish between officers with some college and those who have completed a 4-year degree, the data do not afford us the opportunity to determine the type of degree obtained or the institution that the officer attended. As others have noted (see, e.g., Hudzik, 1978; Sherman & The National Advisory Commission on Higher Education for Police Officers, 1978), it is reasonable to suppose that both of these factors could produce variation in the educational experience and thus differentially affect the influence of education on behavior. Related to this matter, we were unable to determine the temporal ordering of education, which could work to potentially blur the relative influence of education and experience. Although we control for experience, we do not know if one's length of service is mediating what one learned in college, as some researchers (e.g., Van Maanen, 1974) have discussed with respect to other individual characteristics and their impact on police behavior. In-depth interviews with officers would certainly address this issue and assist in disentangling the influence of education and experience.

Third, as with any study relying on observational data, reactivity to the presence of observers is a concern. To reduce potential reactive effects, a field research director was sent to each site approximately 6 months prior to the start of the project to conduct ride-alongs with patrol officers in an attempt to familiarize them with the project and help attenuate fears that researchers were there to judge or report on force usage to superiors. In addition, field researchers were trained in rapport building and other ways to make officers as comfortable

as possible with their presence during ride-alongs. For example, officers were allowed to examine observer field notes if they so desired. Furthermore, researchers guaranteed officers that their identity and behavior would be protected. Attempts to capture reactivity show that in only about one half of 1% of the officers' encounters with the public did observers detect evidence suggesting that officers had changed their behavior because of the researcher's presence. Additionally, observers characteristically reported cordial relations with officers during ride-alongs. Observers noted that only 12% of their observation sessions began with the officer having a negative attitude about the observer's presence, and this dropped to only 2% of the officers demonstrating that view by the end of the observation session. Finally, field researchers observed many instances of police behavior that could have been cause for disciplinary action, a phenomenon noted in previous observational field studies of patrol officers (Reiss, 1971)—suggesting that officers are not reluctant to engage in risky or questionable forms of behavior in the presence of observers.

Finally, we propose a recommendation for the study of coercion, especially with respect to the verbal components of the police-citizen encounter. In the current study, we find that there is less verbal coercion in encounters with officers who have some college work, 4-year degrees, and more experience, compared to encounters with high school and/or less experienced peers. This is a finding that could certainly use greater empirical attention, especially given that previous research has noted that more educated officers (Carter et al., 1989), and those with greater levels of experience (Muir, 1977), are better communicators. The current inquiry examined commands and threats as manifestations of verbal force, though it would be interesting to compare other types of verbalization in police citizen encounters that might be precursors or alternatives to coercion (e.g., suggestions, persuasions, mediation, counseling). These types of encounters might also illuminate additional differences between officers of varying levels of education and experience than that which was found in the present examination.

NOTES

1. One exception involves a study conducted by Terrill and Mastrofski (2002) using observational data that examined the effect of a number of situational and officer determinants on everyday use of force behavior. The present inquiry builds on their previous work by offering a much more detailed exploration concerning the role of education and experience on use of force behavior, as well as a more definitive or appropriate set of analyses to more readily identify the varying effects of these constructs.

2. The two departments used in this study are good sites for examining the behavior of college-educated police officers. Comparisons of officers with 4-year degrees to the 22.6% found by Carter et al.'s (1989) Police Executive Research Forum national study reveal that Indianapolis Police Department and St. Petersburg Police Department representation were both higher (35.6% and 26.4%, respectively).

3. We simplify the outcome measure into verbal and physical force. Our primary emphasis is found in the distinction of using one's voice in relation to using some form of physical application so as to control a suspect. We are interested in learning whether education and experience operate differently in terms of "commanding" a suspect to do something in comparison to "making" him or her do something via physical means. It is also important to note that simply making the distinction between verbal and physical force, as done here, is still relatively rare (see Terrill & Mastrofski, 2002).

4. For the evidence measure, a summative index (0 to 8) was used. Points were assigned for each factor present and summed: officer observed suspect perform an illegal act (3), suspect gave officer a full confession (2), suspect gave officer a partial confession (1), officer observed physical evidence implicating suspect (1), and officer heard testimony from other citizens implicating the suspect (1).

5. To reduce the effects of multicollinearity, the education and experience measures were centered (i.e., each value within the variable was subtracted from its mean) prior to creating the interaction variables.

6. It should be reemphasized that the reference category here is high school. Additional analyses were performed using BA/BS as the reference category to determine whether there is a difference uncovered between those with some college and those with a 4-year degree. Results failed to find a statistically significant difference between these groupings in this respect.

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