National Institute of Justice

R e s e a r c h   i n   B r i e f

Issues and Findings

Discussed in this Brief: An NIJ-sponsored study of 1,585 adult custody arrests in Phoenix, Arizona, the eighth largest city in the United States, to determine the use of force both by and against the police.

Key issues: The research conducted by Rutgers University and Arizona State University was prompted by a perceived need on the part of the Phoenix Police Department and NIJ to gather information about arrest situations, tactics, policy, training, and practices. The study surveyed police officers over a 2-week period in June 1994 and interviewed 185 suspects.

Key findings: Force was used infrequently by the police and even less frequently by suspects. Suspects interviewed reported levels of police force similar to those obtained from officer self-reports.

Among the other findings:

● Police used some physical force in about one of every five arrests. Suspects used some physical force in about one of every six arrests.

● Phoenix police officers are required to restrain only felony or belligerent suspects. In 20 percent of all adult custody arrests studied, officers opted to use no restraints.

Understanding the Use of Force By and Against the Police

By Joel Garner, John Buchanan, Tom Schade, and John Hepburn

The Phoenix Police Department, in conjunction with Rutgers University and Arizona State University, designed and implemented a study of the use of force by and against Phoenix police officers. Conducted during a 2-week period in June 1994, the research was prompted by the need to generate systematic information on the role of force in arrest tactics policy, training, and practice. This study, sponsored by the National Institute of Justice (NIJ), was concerned with determining the characteristics of arrest situations, suspects, and officers associated with the use of force, as well as the amount of force actually used.

Research results showed that, during the study period, the Phoenix police employed some degree of physical force in 22 percent of adult custody arrests and that suspect use of physical force was even less frequent. Further, in situations where members of either group did employ force, the levels typically were low. Despite a policy that requires the routine use of restraints in arrests of felons and belligerent suspects, officers did not restrain suspects

Exhibit 1: **Consistent Predictors of Force**
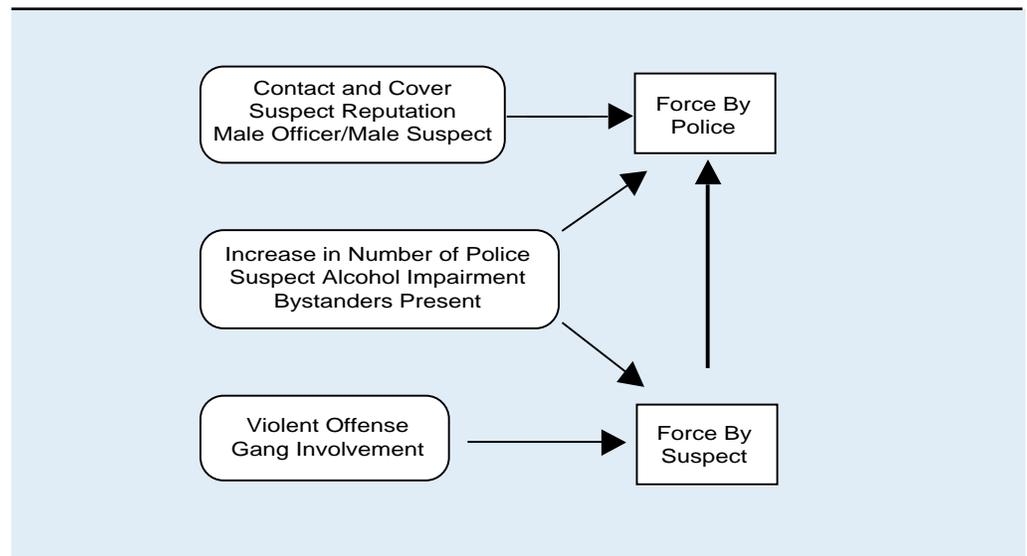
Issues and Findings

continued . . .

● When force was used by the police or suspects, it was typically at the low end of the severity scale.

● Weapons were used by the police in 2 percent of all arrests. The weapon most frequently used by the police was a flashlight (12 times in 1,585 arrests).

● Of 41 factors examined, only 9 consistently contributed to the prediction of police use of force.

● The single best predictor of police use of force was suspect use of force.

● Two-thirds of the variation in the amount of force used by police remains unexplained.

Target audience: Law enforcement policymakers, practitioners, and police trainers.

in one-fifth of all custody arrests involving adults. Finally, a number of factors—most notably, suspect use of force—were found to predict police use of force (see exhibit 1).

This Research in Brief explains the methodology used to measure the use of force, discusses study results, and presents the implications of these findings for future policy and research.

Study method

The research was designed to address some of the more important limitations of prior research on use of force. First, measures were developed to capture the range of force used within the Department's standard force continuum. Measures of the simple dichotomy between force and no force (or excessive and reasonable force) neither capture the full range of police or suspect behavior nor recognize the great variety of force-related behavior in law enforcement. Second, rather than focusing exclusively on situations that involved severe uses of force such as firearm discharges, serious injuries, or deaths, data were collected from a representative sample of arrests to permit examination of the range of instances where some degree of force could be used.

A third aim of the study was to determine the correlates of force. Although helpful, descriptive data on arrest situations or force levels do not provide, by themselves, an appropriate basis for developing arrest tactics training. Therefore, researchers sought to understand the specific circumstances and situations where more or less force is used to accomplish an arrest and to use that information to improve training and practice in arrest tactics.

Obtaining the information. The primary source of data was a one-page

(front and back) survey completed by Phoenix police officers after arrests were made during a 2-week period in June 1994 (see exhibit 2). This form was used to record specific behavioral aspects of the arrests and gather information on police mobilization, the nature of the offense, and officer and suspect characteristics.

From these surveys, detailed information was compiled about the frequency of specific officer and arrestee behaviors along five dimensions:

• Voice (officer/suspect spoke in a conversational tone, articulated threats, issued commands, shouted, or cursed).

• Motion (mode of officer pursuit/suspect flight).

• Restraints (mechanical devices used by police to control arrestee, e.g., handcuffs, body cuffs, hobble).

• Weaponless tactics (officer/suspect grabbing, twisting, pushing, shoving, punching, kicking, biting, scratching, wrestling, scuffling, and use of control holds or pressure points).

• Weapons (suspect possession or officer/suspect threatened use, or actual use of martial arts or a baton, flashlight, knife, blunt instrument, chemical agent, canine, handgun, rifle, or shotgun; includes use of a motor vehicle as a weapon).

The detailed survey responses were used to construct three measures of force—physical force, continuum of force, and maximum force. These measures were designed to capture the full range of force used, including low levels of force not traditionally examined by police use-of-force research. Multivariate statistical models also were developed to evaluate the extent to which officer, suspect, and

Exhibit 2: **Use-of-Force Survey Form**

Arizona State University/Rutgers University Use-of-Force Research Project

This form is to be completed by the officer who fills out the DR and the arrest report. This officer will respond as the 1st officer. Complete one form for each arrest and include the actions of all officers involved. The practice of including in the DR all information relevant to the possible guilt or innocence of suspects should be continued.

1. Your Assignment (✓)

Patrol division ☐	Other ☐

2. Suspect's Custody Status Upon Your Arrival and Prior to Arrest (✓)

Already in custody of police/court/jail ☐
Already in custody of private security/citizen ☐
Not in custody ☐

3. Your Approach (✓)

Did you use "contact and cover" when approaching the suspect?
Yes ☐   No ☐   N/A ☐

4. Voice (✓ all that apply for officer(s) and suspect)

1st	2nd Officer		Suspect
		Conversational	
		Command	
		Verbal threats	
		Shouting/cursing	

5. Suspect Response (✓ all that apply)

Immediate compliance with officer's orders
Passive resistance (go limp, etc.)
Evade, hide, flee
Impede officer movement
Resist cuffing
Resist placement in car
Assaultive

6. Officer Pursuit/Suspect Flight (✓ all that apply)

1st	2nd Officer Pursuit		Flight by Suspect
		No pursuit/flight	
		On foot or bike	
		Car	
		Helicopter	

7. Restraint Technique (✓ all that apply)

		No restraint used	
		Speed cuffing	Cuffing
		Suspect kneeling	
		Suspect standing	
		Suspect prone	
		Hobble	
		Leg cuff	Soft restraints
		Body cuff	
		Other restraints (specify)	

8. Weaponless Tactic (✓ all that apply)

1st	2nd Officer		Suspect
		Not applicable/compliant	
		Grab, twist	
		Push, shove	
		Hit, punch, kick	
		Wrestle, scuffle	
		Bite, scratch	
		Pressure point	
		Carotid hold	
		Control hold (specify)	

9. Weapons Possessed (✓ all that apply)

1st	2nd Officer			Suspect
		No weapon possessed		
		Straight baton	Stick/blunt instrument	
		Expandable baton	Knife/edged weapon	
		Sidehandle baton	Household item	
		Flashlight	Martial arts	
		Motor vehicle (as weapon)		
		Canine		
		Punch II/other chemical agent		
		Handgun		
		Rifle/shotgun		
		Other weapon		

10. Weapons Used (*circle U*) or Threatened (*circle T*) During Contact

1st	2nd Officer			Suspect
		No weapons used or threatened (✓)		☐
U T	U T	Straight baton	Stick/blunt instrument	U T
U T	U T	Expandable baton	Knife/edged weapon	U T
U T	U T	Sidehandle baton	Household item	U T
U T	U T	Flashlight	Martial arts	U T
U T	U T	Motor vehicle (as weapon)		U T
U T	U T	Canine		U T
U T	U T	Punch II/other chemical agent		U T
U T	U T	Handgun		U T
U T	U T	Rifle/shotgun		U T
U T	U T	Other weapon		U T

11. Effectiveness (✓)

Was a particular tactic or weapon ineffective in making the arrest?
Yes ☐   No ☐
If yes, what was it and why ineffective?

12. Injuries (✓ all that apply)

1st	2nd Officer		Suspect
		None apparent	
		Complaint of pain	
		Bruise, abrasion, scratch	
		Puncture, cut	
		Concussion/loss of consciousness	
		Broken bone	
		Temporary chemical irritation	
		Other	

13. Medical Attention (✓ most serious)

1st	2nd Officer		Suspect
		None	
		Offered and refused	
		First aid at scene	
		Hospital treatment and released	
		Hospital admission	
		Other medical attention	

14. Dispatch and Booking

Radio call type On-View	
Arrest charge	
CLD	
Booked by arresting officer	
Booked by other officer	

15. Time of Arrest (✓)

0001–0400 ☐	1201–1600 ☐
0401–0800 ☐	1601–2000 ☐
0801–1200 ☐	2001–2400 ☐

16. Day of Arrest (✓)

Sun ☐	Mon ☐	Tue ☐	Wed ☐	Thu ☐	Fri ☐	Sat ☐

17. Part of Shift (✓)

Early ☐	Middle ☐	Late ☐

18. Grid in Which Arrest Took Place (✓)

19. Location of Completed Arrest (✓)

Inside			Outside
	Suspect's residence	Major cross street	
	Other residence	Secondary street/alley	
	Club/bar	Parking lot	
	Restaurant	Suspect's yard	
	Retail store	Other yard	
	Other		

20. Officer's Prior Knowledge of Location (✓ all that apply)

No prior knowledge of location
Location known to be nonthreatening
Location known for criminal activity
Location known to be hazardous to police

21. Visibility at Arrest Location (circle most accurate number)

10	9	8	7	6	5	4	3	2	1
Excellent		Good			Moderate			Poor	

22. Arresting Officer Characteristics

Number of arrests in last 30 days
Number of years as Phoenix police officer

23. Year of Last Arrest Tactics Training

Last arrest tactics training at *Academy* (circle)		92	93	94
Describe	1.	92	93	94
non-*PPD* arrest	2.	92	93	94
tactics training	3.	92	93	94

24. Officer Injuries
At any time *in the past,* did you need medical attention
as a result of making an arrest? (✓ **most serious**)

No medical attention needed
First aid at scene
Private doctor
Transported to hospital
Overnight stay at hospital

25. Number of Persons, Including Yourself, Present at Arrest Scene

Number Present	Initial Contact	Completion of Arrest
# of Officers		
# of Suspects		
# of Bystanders		

26. Suspect's and Bystanders' Attitude Toward Police (✓ predominant)

Suspect		Witnesses/Bystanders	
		None	
	Civil	Supportive	
	Angry	Neutral	
	Aggressive	Antagonistic	

27. Suspect's Relationship to Victims and Bystanders (✓ all that apply)

Victims		Witnesses/Bystanders	
	No victim	No witnesses/bystanders	
	Unknown		
	No relationship/strangers		
	Acquaintance/friend		
	Family/intimate		

28. Characteristics of Officers and Suspect

1st Officer		2nd Officer				Suspect	
	yrs.		yrs.	Age			yrs.
ft.	in.	ft.	in.	Height	ft.		in.
	lbs.		lbs.	Weight			lbs.
Wh. Bl. His. Oth.		Wh. Bl. His. Oth.		Race	Wh. Bl. His. Oth.		
M	F	M	F	Gender	M		F

29. Officer's Prior Knowledge of Suspect (✓ all that apply)

	No prior knowledge
	Compliant
	Resistive
	Assaultive
	Carry weapons
	Criminal record

30. Suspect's Gang Membership (✓)

	Verified
	Associate
	No association
	Unknown

31. Suspect's Impairment (✓ all that apply)

	Don't know	Yes	No
Drugs			
Alcohol			
Other			

32. Suspect's Prior Criminal Record (from Phoenix P.D. PACE System)

	Code	No Code (✓)
Primary Offense Code (1–24)		☐
Violence Potential Code (1–X)		☐
Current warrant on suspect (✓ if no)		
Warrant charge		

Thank you for your time and cooperation in helping with this research project. *Federal statute [42 U.S.C. § 3789(g)] states that these research data are "immune from legal process" and shall not be "used for any purpose in any action, suit, or other judicial, legislative or administrative proceedings."*

arrest situation characteristics consistently predicted the amount of force used.

The reliability of the police survey was assessed by interviewing a sample of suspects booked in the Maricopa County Jail; 185 interviews were matched to officer surveys. Both the officer surveys and suspect interviews were voluntary and anonymous.

Overview of survey results

Of the 1,777 surveys obtained during the 2-week period covered by the study, 1,585 pertained to adults who were booked by Phoenix police officers at the Maricopa County Jail (noncustody and juvenile arrests were excluded). The Department's automated information system (PACE) recorded 1,826 arrests in which an adult suspect was booked. Thus, surveys were obtained for more than 85 percent of arrests involving detained adults.

The surveys revealed that, in making these 1,585 adult custody arrests, officers:

• Used threats or shouts less than 4 percent of the time.

• Pursued a fleeing suspect 7 percent of the time.

• Placed cuffs or restraints on 77 percent of the suspects.

• Used a weaponless tactic (holding, hitting, etc.) in 17 percent of the arrests.

• Threatened to, but did not, use a weapon 3.7 percent of the time.

• Used a weapon in 2 percent of the arrests.

Surveyed officers also reported that the weapon most frequently used by

them against a suspect was a flashlight (12 arrests). They also noted that no restraints were used in 20 percent of the surveyed cases (3 percent of completed surveys did not indicate whether restraints were used). According to survey data, use of force was reported rarely by either police officers or suspects; when some form of force was used, it was typically at the low end of the study's measures.

The three measures of force

Physical force. "Physical force" was defined as officer or suspect use of any weaponless tactic (such as kicking or shoving) or the threatened or actual use of any weapon. In addition, police use of physical force included the application of severe restraints, including cuffing suspects while they were prone, hobbling (hog-tying a suspect's legs), leg cuffing, and body restraint (e.g., a straitjacket). The possibility that suspects would use restraints on police officers was excluded from consideration. Suspect possession of a weapon, even if not used or threatened, was included as an example of physical force by suspects. Officer possession of a weapon was not considered use of physical force by officers.

In 349 of the 1,585 surveyed arrests (22 percent), the police reported using

some form of physical force. In nearly four out of every five adult custody arrests, police officers used no physical force at all. The surveys indicated that suspects used physical force in 228 (14.4 percent) of the 1,585 incidents. In roughly five out of every six adult arrests, suspects reportedly used no physical force.

Continuum of force. The study's second measure of force was based on two six-step rankings used by the Phoenix Police Department (see exhibit 3), which are similar to those used in many other jurisdictions to locate degrees of force in a progression. The rankings are independent; a "3" on the police scale (control and restraint) is not necessarily equivalent to a "3" on the suspect scale (passive resistance). The measurement of this "continuum of force" was intended not only to reflect the official policies of the Phoenix Police Department but also to incorporate the widely held notion that the force/no force dichotomy is inadequate to capture all important variations in the ways police handle encounters with the public.

Exhibits 4 and 5 show the highest level of force used by police and suspects in terms of the force continuum. In 918 (57.9 percent) arrests, the highest level of force used by the police

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Exhibit 3: *Phoenix Police Department Continuum of Force Categories*

Police	*Suspects*
0. No Force	0. No Resistance
1. Police Presence	1. Psychological Intimidation
2. Verbal Commands	2. Verbal Noncompliance
3. Control and Restraint (handcuffs)	3. Passive Resistance
4. Chemical Agents	4. Defensive Resistance
5. Tactics and Weapons*	5. Active Aggression
6. Firearms/Deadly Force	6. Firearms/Deadly Force

* Includes all physical tactics and weapons used except chemical agents and firearms.

was some form of restraint; in another 350 (22.1 percent), no restraints were used. Chemical weapons were the highest level of force employed by the police in 2 (.01 percent) arrests; although not discharged, firearms were threatened or somehow used in 54 (3.4 percent) arrests. Other weapons and

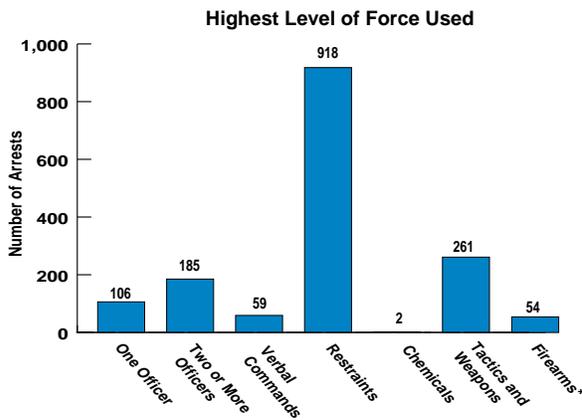weaponless tactics were used in 261 (16.5 percent) arrests.

In 977 (61.6 percent) arrests, suspects offered no resistance to officers. In another 196 (12.4 percent), the forms of resistance were either psychological or verbal. In 136 (almost 9 percent) arrests, suspects used or threatened to

use a physical tactic or a weapon; in 11 (0.7 percent) of those arrests, the weapon was a firearm (see exhibit 5).

Maximum force. A measure of maximum force was constructed by identifying the single most severe use of force employed by the police, based on a ranking of 80 different types of police statements, physical restraints, tactics, and weapon use. These rankings ranged on a scale of 0 to 100 (with 100 denoting maximum force). The severity of behaviors was weighed according to the judgment of 11 experienced and currently active Phoenix patrol officers, whose opinions were solicited for this purpose. In a similar exercise, a measure of the maximum amount of force used by suspects was developed (see exhibits 6 and 7).
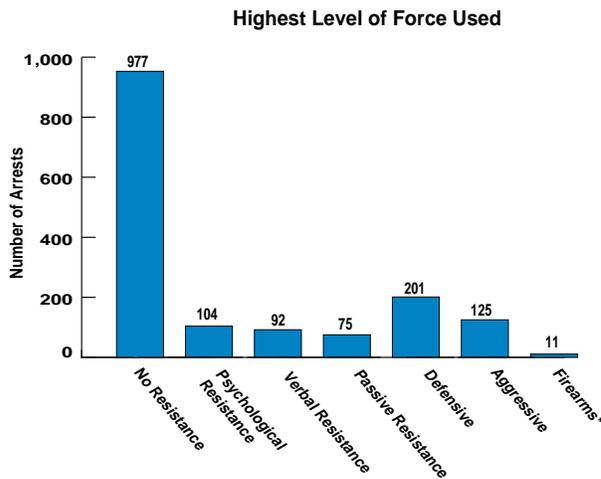
Suspects' views on use of force. In order to assess the reliability of the study's force measures, results of interviews with suspects from a sample of 185 adults taken into custody during the 2-week period were matched to corresponding police surveys. Interviewers from Arizona State University asked detainees about the force used by police in the course of their arrests, as well as the force that they themselves exhibited. The interviews resulted in findings that were comparable to those of the police surveys (see exhibit 8).

Influences on use of force

In addition to developing three measures of force, the study team compiled detailed information on how the police were mobilized, the nature of each offense, the location of each offense, the personal characteristics of officers, the personal characteristics of suspects, and any associations that could be made between police and

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*Exhibit 4: **Measure of Continuum of Force Used By Police***

Highest Level of Force Used

* This category includes any use or threatened use of a firearm. During the 2-week period, one suspect discharged a firearm. During this same period, there is no indication that the police discharged a firearm.

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*Exhibit 5: **Measure of Continuum of Force Used By Suspects***

Highest Level of Force Used

* This category includes any use or threatened use of a firearm. During the 2-week period, one suspect discharged a firearm. During this same period, there is no indication that the police discharged a firearm.

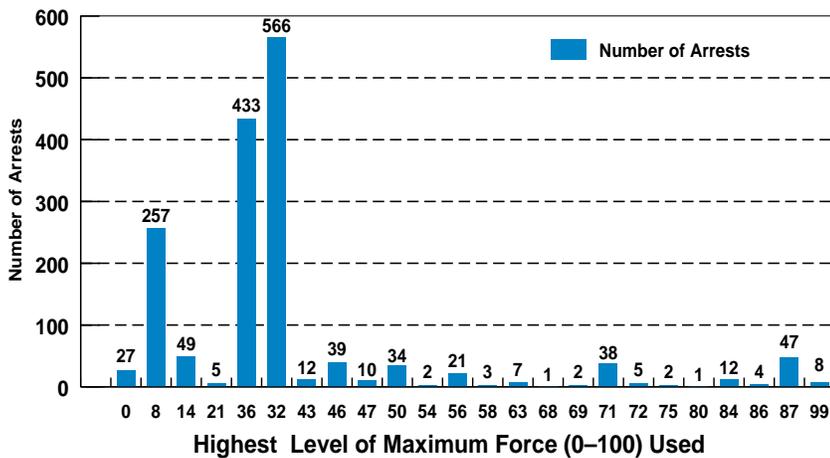Exhibit 6: **Measure of Maximum Force Used By Police**
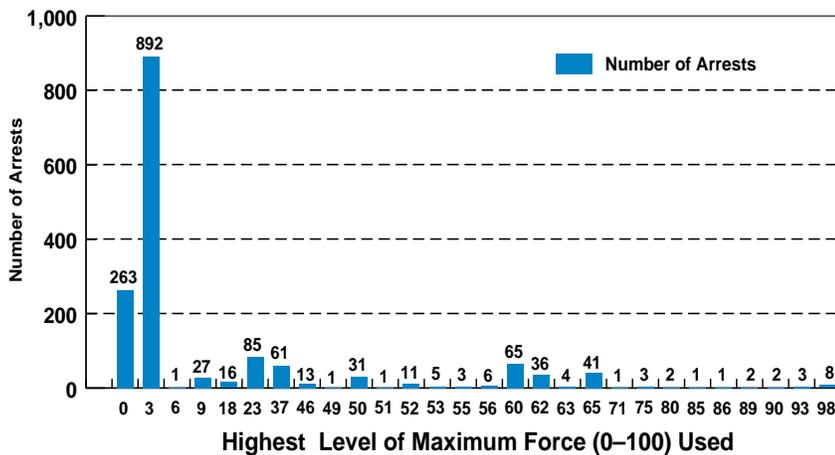

Exhibit 7: **Measure of Maximum Force Used By Suspects**

Exhibit 8: **Summary Measures From Police Survey and Suspect Screens**

Type of Force By Police	Police Survey		Suspect Interview	
	Number	**Percent**	**Number**	**Percent**
No Force	152	82.2	147	79.5
Hit or Push	4	2.2	10	5.4
Other Weaponless Tactic	18	9.7	18	9.7
Use or Threatened Use of Weapon	11	5.9	10	5.4
Total	**185**	**100.0**	**185**	**100.0**

suspect characteristics. Information about each arrest was collected on 41 specific items thought to influence the use of force.

Analyses of these variables in relation to each measure of force identified 16 consistent nonpredictors, 16 inconsistent predictors, and 9 consistent predictors of force.

Consistent nonpredictors. More than one-third (16) of the 41 factors examined did not predict any of the three measures of police or suspect use of force. These factors were:

Mobilization of the police

Custody status of arrestee
Dispatch or on-view arrest
Night time
Weekends
Weekend nights

Nature of the offense situation

Number of suspects at initial contact
Number of suspects at arrest completion
Victim and suspect friends or same family
Bystander and suspect friends or same family

Nature of the arrest location

Inside a residence
Location known for criminal activity

Personal characteristics of the police

Number of arrests in past 30 days
Years since last training

Personal characteristics of suspects

Known to have criminal record

Associated suspect and officer characteristics

Height
Weight

Given the size and representative nature of the sample of adult arrests from which various measures of potential predictors were obtained and the strength of the multivariate analyses employed, these findings of "no effect" cannot be attributed to either the research design or its implementation. Although generalization of these findings awaits replication, future discussions of police use-of-force policies and practices (and designs for additional research on police use of force) should consider this study's evidence that these 16 factors consistently failed to predict police or suspect use of force.

Inconsistent predictors. Sixteen of the 41 factors considered in the study predicted only one or two of the three measures of force used by and against police. These factors retain their candidacy as predictors of force and warrant inclusion in subsequent research. Each predicted some measure of force but failed to meet this study's conservative standard of predicting all three measures.

In the following list of inconsistent predictors, the minus (-) signs indicate a negative relationship. Thus, as a predictor (such as visibility) increases in value, the use of force decreases. The negative sign on the race variable is based on the finding that Hispanic suspects on average use less force against the police than non-Hispanic suspects.

Mobilization of the police

Patrol division (-)
Early, middle, or late phase of shift
Number of police at initial contact

Nature of the offense situation

Traffic offense
Property offense

Vice offense
Domestic call
Bystander's demeanor

Nature of the arrest location

Visibility (-)
Inside a nonresidential building (-)
Location known to be hazardous

Personal police characteristics

Length of service
Past injury

Personal suspect characteristics

Drug impaired

Associated suspect and officer characteristics

Age
Race (-)

Because suspect use of force influences police use of force, this list of inconsistent predictors includes any factor that predicted one measure of suspect use of force. For instance, prior injury to an officer did not predict police use of force directly, but it did predict one of the three measures of suspect force. Similarly, the race of officers and suspects played no role in predicting police use of force, but because Hispanic suspects used less force than other suspects on one measure, race was listed as an inconsistent predictor of force.

Age is one of the most consistent predictors of participation in and frequency of criminal behavior, and we were surprised that age was not a substantial and consistent predictor of the use of force. In fact, at least one of the various components of "age"—officer age, suspect age, and the interaction of the two—was found to be associated with all three measures of force em-

ployed in the study, but the direction of the effects changed with different measures and components.

Consistent predictors. The analyses identified nine characteristics that consistently predicted police use of force:

Mobilization of the police

Use of contact and cover tactics
Increased number of police

Nature of the offense

Arrest for a violent offense

Nature of the location

Presence of bystanders

Personal police characteristics

None

Personal suspect characteristics

Use of force
Gang involvement
Alcohol impairment
Known to be resistive, assaultive, or to carry a weapon

Associated suspect and officer characteristics

Both male

Some predictors affected police use of force directly; others affected it through their influence on suspect use of force. Some characteristics predicted both.

Among the predictors of police use of force, suspect use of force had the largest impact on each of the three measures of police use of force. This remained true when controlling for the possibility that some suspect use of force could be a reaction to police use of force. This finding supports the

perspective that underlies use-of-force policies and arrest tactics training in the Phoenix Police Department and in many other departments around the country: Police use force (and are authorized to do so) in response to suspects' levels of resistance.

However, suspect use of force does not explain all or even a large proportion of the variation in the amount of force used by the police. This finding supports the perspective that response to suspect force, although significant, is not the only situation in which the police use force (see exhibit 1).

Implications of study findings

Policy implications. This research has specific implications for police policy, training, and practice in the use of force. First, it provides systematic evidence that the use of force in Phoenix is infrequent; when used, force was typically at the lower end of the measures of force. In addition, no evidence was found to show that force was applied unevenly or in discriminatory ways against racial minorities.

The findings did raise some issues for further consideration. For instance, the single most frequent weapon used when arrests were made in Phoenix was the flashlight. At the time of this study (June 1994), the Phoenix Police Department's arrest tactics training program provided limited guidance regarding the use of a flashlight as a weapon. Officers are currently receiving enhanced training in the use of the flashlight as a weapon. The same rules that apply to the use of batons apply to flashlights.

A second area of concern is that the widely promoted "contact-and-cover" tactic was consistently associated in

this study with increased use of force. Contact and cover is a tactic whereby one of two officers makes contact with the suspect(s) or complaining citizen(s), while the second officer takes a position a short distance away to maintain a view of the entire situation and "cover" the contact officer. No assertion can be made on the basis of available evidence that the use of this tactic caused the police in Phoenix to use more force. However, the research design included controls for some of the characteristics of the arrest situation that might lead officers to use contact and cover—suspect use of force, violent offense, number of suspects and bystanders, low visibility—but these characteristics cannot explain the consistent association between use of contact and cover and all three measures of force. In addition, the contact-and-cover tactic is intended to provide officers with a tactical advantage should a physical confrontation occur. That advantage, some might assume, should reduce the amount of force used by police and suspects, but no evidence was found to support this assumption. A thorough examination of all aspects of the use of contact and cover, beginning with a more indepth review of the data collected in this study, is recommended.

The third implication for policy stems from the finding that the gender of the suspect and the police officer directly affected the amount of force used by the police. More force was used by police when both officer and suspect were male than when both officer and suspect were female or their gender was unreported. However, male suspects were not found to use more force against the police than female suspects when all of the predictors were considered. For most officers and re-

searchers, this is counterintuitive. Statistical controls for the height and weight of officers and suspects, as well as for the suspect's use of force, were included, and these controls (or other factors not included in the research) may account for the absence of an effect for suspect sex on suspect use of force. Since most arrests (1,059, or 67 percent) involved a male officer and a male suspect, we interpreted these findings to mean that arrests of female suspects by female officers involved less force than the typical arrest.

A fourth area of concern is use of restraints and the possibility that Phoenix police officers are using too little force when they make custody arrests. In more than 20 percent of arrests, the police officers asserted that they had used no handcuffs or other restraints; in another 3 percent of the arrests, this item was not filled in on the officer survey. The available data do not provide a basis for determining the soundness of the current policy, which authorizes and encourages officers to restrain any custody arrestee but requires them to do so only with felons and belligerent suspects. The concern is based on the seemingly high frequency with which the discretion to not use restraints is exercised.

The last issue raised by this research is the generic and imprecise quality of some of the 12 categories of suspect resistance and officer response that are central to the department's use-of-force policies. Behavioral indicators for each of these categories were developed, with difficulty, and it is suspected that officers may have similar problems determining whether, for instance, flight in a 2,000-pound automobile belongs in category 4, "defensive resistance," or category 5, "active

aggression." Similarly, the policy groups together all weapons except chemical agents and firearms, which are placed in separate categories. We do not suggest the use of more than six categories or the kind of detailed ranking distinguishing weapon possession, threat, and use that was helpful for this research. However, the policy could be more clearly stated and the relative rankings based more explicitly on the relative severity of officer and suspect behaviors. Finally, as new weapons and tactics become available, the review of the continuum-of-force categories is inevitable.

Research implications

We used a representative sample of police behavior, developed a variety of measures of police and suspect use of force, and employed explicit models and appropriate multivariate statistical procedures to assess the strength of individual predictors of force. Previous research has not used these standards, but future research could benefit from using and improving on them.

The sampling was representative but not systematic. We used one 2-week period in June 1994 and were unable to discern if seasonal variation played a role in the amount or distribution of force used. Other sampling schemes need to be developed and implemented that will provide a more formal statistical basis from which to make inferences about all arrests in a particular jurisdiction.

Data collection was anonymous, and understanding the behavior of individual officers or suspects over time was thus precluded. Anonymity also complicated the matching of officer

surveys and suspect interviews. Federal protections of research-subject confidentiality are strong, even for police officers. Future research could attempt to better integrate survey, interview, and official records of police and suspect behavior.

The measures of force are improvements over simple dichotomies of the past, but, as ordinal or interval measures, they are simply illustrative. At best, they should be early prototypes of measurement models that reflect true scales or the full extent of harm caused by different forceful actions.

The data collection instrument included many items thought to be important in the study of police use of force. The length of the form was a burden to participating police officers and reflected the fact that the researchers could not match officer responses to official records about the arrest, the suspect's prior record, or the officer's career. Improved data on weapon possession and use are essential, and the sequencing of officer and suspect behaviors should be a high priority in future research.

The use of multivariate statistical models improved the rigor of this study, but the available methods were only a small subset of approaches to assessing causal influences. Most police professionals and researchers believe that community context is an important consideration in how much force is used. This research does not incorporate contextual models to account for such influences.

Because this is only one study in one jurisdiction at one point in time, the results may not generalize to other jurisdictions and their relationships between

citizens and police. There is no substitute for replication.

Conclusion

All prior assessments of police use of force that employed a systematic sample of police behavior as a foundation report that use of force is infrequent and that many of the factors commonly thought to influence it do not. Limitations in prior research left the validity and reliability of those findings uncertain. This research implemented a design to overcome some of these limitations, and the researchers reached the same conclusion: Using three alternative measures of force, the survey of adult custody arrests in Phoenix revealed that no force, or only low levels of force, was used in a large proportion of cases.

In addition, the results did not support the notion that the race of officers or suspects directly or indirectly affects the amount of force used in adult custody arrests. The popular focus on racial factors in use of force seems to be unsupported by this study and other research evidence. Subsequent research must be attentive to the low base rate for use of force by police and the even lower base rate by suspects.

On the other hand, official policy and training on the use of force do not indicate an awareness of the common absence of force. Recognition that force is rare and, when used, varies along a continuum has implications for law enforcement policy, training, and street behavior.

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The complete report is available through the National Criminal Justice Reference Service on interlibrary loan or, for a fee, photocopy reproduction. Call 1–800–851–3420. Ask for NCJ 158614.

Dr. Garner discussed his work with an audience of researchers and criminal justice professionals and practitioners. A 60-minute videotape, *Understanding Use of Force*, is also available for $19 ($24 in Canada and other foreign countries). Ask for NCJ 159739.

Points of view expressed in this report are those of the authors and do not necessarily represent the official position or policies of the Phoenix Police Department, the Maricopa County Sheriff's Department, or the U.S. Department of Justice.

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