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<center>**Measuring and Explaining Police Use of Force: A Tale of Two Cities**</center>

Introduction

Collecting and interpreting information on police use of force is a persistent

problem for police managers and researchers. Although these data are critical to both the

police and the public, the data remain difficult to collect, measure, and interpret

objectively. The Violent Crime Control and Law Enforcement Act of 1994 (sect.

210402), requires the U. S. Attorney General to collect information on law enforcement

officers' use of force. This act has led to an energetic effort to collect data on all police

use-of-force incidents, including excessive force, by various groups and methods

(McEwen 1996 and Greenfeld et al., 1997). The problems with data collection on such

organizationally sensitive and controversial acts suggest the need for reliable, valid, and

standard measures of force. To date, the various data collection methods include

observational studies (Worden 1995); surveys (Pate and Fridell 1993); information

collection from citizen complaints (Independent Commission on the Los Angeles Police

Department 1991); in-depth assessments of arrests with information from both officers

and arrestees (Garner et al., 1995 and 1996; Toch 1969) and the aggregation of official

agency data (Adams, 1995). Tom McEwen (1996:82) has discussed the strengths and

weaknesses of each method and has concluded that a beginning step is to establish

"standard definitions (of levels of force) and uniform data sources." Until those goals are

achieved, researchers and practitioners will grapple with the numerous types of data that

are currently available. This report will review what is currently known about police use

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of force and then present information that was collected from the Metro-Dade Police Department in Miami and from the sister cities of Eugene and Springfield, Oregon.

Assessing What We Know

The research literature includes a variety of studies on the use of force by police. One recent theoretical study (Lanza-Kaduce and Greenleaf, 1994:613) suggests that "members of groups which are most unlike the dominant white middle class, whose norms are reflected most clearly in law, will be most likely to be in conflict with legal authorities." They make the argument that a suspect's social or class status can explain the variance in resistance and police use of force. Attempts have been made empirically to link police use-of-force with the class, cultural and individual characteristics (Sykes and Clark, 1975 and Peterson and Bailey, 1988). Taft (1991) discovered the need for knowledge of cultural and ethnic values for police assigned to immigrant ghettos. He reported that misunderstandings between police and members of ethnic minorities often escalate normal events into situations that require the use of force. Cohen and Chaiken (1987) have reported that shorter officers were more likely to be assaulted than their taller counterparts. Research results also suggest that race and community are important variables to be considered when discussing force used by police (Meyer, 1980, Alpert, 1989). While these are all important studies, the findings are difficult to interpret or to compare. What we know about the use of force is limited to several estimates of prevalence.

It is difficult to obtain information on the use of force, and the data that are available are difficult to interpret (Pate and Fridell, 1993, Adams, 1995 and Klockars,

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1995). One of the reasons for the problem of interpretation is the lack of meaningful information. Many or most agencies do not keep use-of-force information, and others maintain reports only if there are injuries, potential injuries, or verbal complaints (of involved suspects or citizens) as a result of a confrontation. At that general level, information on rates of force used can be compared to calls for service, arrests, arrests for violent crimes, citizen complaints, number of sworn officers or other considerations. However, caution must be used in the interpretation of these data, as reporting procedures and events that trigger the completion of reports vary across agencies. Similarly, observational studies suffer from inadequate training of observers and problems of inter-rater reliability. Although problems exist, research has been conducted.

Reiss (1967), analyzing data from eight precincts in Boston, Chicago and Washington, DC, estimated that approximately 9% of offenders are handled with gross force. These same data were re-analyzed by Friedrich who reported that approximately 5% of encounters with suspected offenders involved some level of force (1980). Bayley and Garofalo (1989) observed force in approximately 8% of the situations in their study that were potentially violent, and Fyfe (1995) reported that 10% of the encounters observed by his research team involved force. Our best estimate from these studies is that force is used in approximately 8% of police-citizen contacts. The level of force used is very difficult to capture and is dependant on the method by which the data are gathered. Bayley and Garofalo (1987) report that the vast majority (84%) of forcible incidents included only grabs, pushes and shoves and that injuries were very infrequent. In fact, they concluded (1987: B-21) that "violence, more accurately conflict during patrol

encounters was very rare ..." and most of it was verbal. However, Croft and Austin (1987) reported that more than 35% of police use of force incidents result in an injury to a citizen. Of course, it may be that these use-of-force reports were filed only for serious situations compared to other studies which analyzed all uses of force, no matter how minor. In his recent re-analysis of the Police Services Study, which included data collected in the late seventies, Worden (1995) found that during 5,688 police-citizen encounters, officers from 24 police departments used reasonable force (as judged by a civilian observer) in 37 encounters and used force judged to be unreasonable in 23 encounters. In encounters with suspects, reasonable force was used in 2.3 percent of encounters and unreasonable force was used 1.3 percent of the encounters.

In a recent study of police non-lethal force in Phoenix, Arizona, police officers completed a use of force questionnaire following every arrest that was made during a two week period in the Summer of 1994 (Garner, Buchanan, Schade and Hepburn, 1996). From these surveys, interviews were conducted with both officers and suspects involved in use of force incidents. The study was designed to capture the entire range of police use of force behavior (not merely "serious" incidents) and to determine what factors were correlated with the use of force by and against the police. The researchers found that in course of making 1,585 adult custody arrests, Phoenix officers used threats or shouts less than 4 percent of the time, used weaponless tactics (such as holding, wrestling, striking, etc.) 17 percent of the time, and used some type of weapon in 2 percent of the arrests.

It is important to note that the definitions and reporting procedures can influence results drastically. Adams has reviewed the previous research and makes two important

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observations. First, "... the average police officer will use force from between one to three times a year" (1995: 71). Second, "... observational research suggests that police use of force occurs at least twice as often as suggested by official use-of-force reports ... because they provide for a more generous definition of force than that used by police to trigger the filing of a use-of-force report" (1995:71). He confirms what the police have known for years; that the use of force by police is a relatively infrequent event.

The majority of the data that are available are being collected by individual agencies and associations. Of course, many agencies that collect data only require minimal information and others will not share their data with researchers. The discouraging trend of this data collection throughout the country has been reported by Pate and Fridell (1993). Fortunately, there are exceptions to the rule. Some larger departments not only maintain use-of-force statistics but would welcome an analysis of the information. For example, the Virginia Association of Chiefs of Police (VACOP) has initiated a Use of Force Survey for its member agencies (1994). While they report a meager 23% response rate for 1993, they are encouraged by the cooperation of the 58 agencies that returned the survey instruments. As of March 1997, almost 400 police agencies nationwide have requested the data entry software that they developed (Greenfeld et al., 1997). Hopefully, more departments will provide information for analysis. The VACOP reported that their reporting agencies were involved in two and a half million calls for service and one and a half million motor vehicle stops, which resulted in 1.1 million arrests (criminal and traffic). These police-citizen contacts resulted in 1,697 use of force reports and 144 complaints.

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The recent national study conducted by Pate and Fridell (1993) provides a large set of data on many aspects of aggregate reports on use of force and the various reporting procedures. Although they report a vast amount of information, their study demonstrated the lack of empirical knowledge on the use of force. In fact, they suggest that the next generation of research on police use of force attempt to identify the prevalence of specific incidents and the analysis "of the relationships between the rates of reported use of various types of force and the multitude of factors hypothesized to be related to such use" (Pate and Fridell, 1993: 165). Unfortunately, there even exists a void in information concerning the calls for service that result in the use of force (Hirschel et al., 1994). Before turning to the analysis of force and resistance in our sites, we will first present some background information on the agencies' size and workloads.

Most recently, The Bureau of Justice Statistics and the National Institute of Justice sponsored a Police-Public Contact Survey. This survey, administered by the Census Bureau, included interviews with 6,421 persons age 12 or older. Highlights of the report include that (Greenfeld et al., 1997: 12):

... no one alleged that they had been kicked, hit with a flashlight, attacked by a police dog, or shot at by police. The specific types of force that were alleged to have occurred were: hit, held, pushed, choked, threatened with a flashlight, restrained by a police dog, threatened or actually sprayed with chemical or pepper spray, threatened with a gun or used some other force against them. Altogether, 14 respondents, representing 500,000 persons nationwide (or 0.2% of the total population age 12 or older), alleged that one of the aforementioned types of force occurred.

Most of those who alleged force were males (87%), whites (48%) or Hispanics (28%) and between the ages of 12-19 (51%). Interestingly, ten of the fourteen respondents who

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alleged that force was used against them, indicated that they may have provoked the police by engaging in one or more of the behaviors: threatening an officer, assaulting an officer, arguing with an officer, interfering with an officer, resisting an officer, trying to protect another from an officer, inciting others, possessing a weapon, or drinking or using drugs at the time of contact with an officer (Greenfeld et al., 1997).

The data from this survey complement results from other studies and suggest that " use of force (by police) is rare in police-citizen contacts and it is often accompanied, according to the self-reports of respondents, by some possibly provocative behavior" (Greenfeld et al., 1997: 14). Unfortunately, the survey's sample size was too small to draw firm conclusions concerning the nature and extent of police use of force or the extent and type of citizen provocation or resistance.

A Description of the Sites

The Metro-Dade Police Department (MDPD) is located in Dade County, Florida. The agency is responsible for all law enforcement activities in the unincorporated areas of the county (it was formerly known as the Dade County Sheriff's Department). In addition, MDPD also contracts with many of the municipal agencies within Dade County to perform specialized services. In any case, in 1995, the unincorporated areas of Dade County had a population of approximately 2,000,000 and the county included 1,840 square miles. The Department had 2,725 sworn officers, 845 of whom were assigned to patrol. The data from Metro-Dade were collected from 1993-1995. The sites of Eugene and Springfield, Oregon, which are located in the Willamette valley, had a combined population of 178,000 and covered 52 square miles. The agencies had 204 officers of

whom 110 were assigned to patrol duties. The data were collected from the Oregon sites in April 1995.

	Metro-Dade	Eugene	Springfield
Population	2,000,000	129,000	49,000
Square Miles	1,840	39	13
Sworn Officers	2,725	150	54
Patrol Officers	845	78	32

Workload Analysis

The police departments in Oregon had a combined total of 150,841 citizen contacts during 1995. Together there were only 7 complaints of excessive force, 31 complaints of discourtesy, and 2 lawsuits filed. The agencies' data are presented below.

1995

	Eugene	**Springfield**
Citizen Contacts (calls for service)	95,594	55,247
Number of Arrests;	19,967	5,852
Number of Complaints from Citizens of Excessive Force;	5	2
Number Sustained;	1	0
Number of Complaints of Verbal Abuse (discourtesy)	21	10
Number Sustained; and	3	1
Law Suits Claiming Use of Force (both pending).	2	0

The information from Metro-Dade Police shows that there were more than 1,000,000 reported contacts during the three-year period. During that period, there were 133 complaints of excessive force, 243 complaints of discourtesy and 18 law suits filed.

	1993	1994	1995
Reports Issued (reports with case #)	577,561	477,340	579,490
"No Report" (no contact, wrong address, no one there, etc).	199,299	160,397	193,752
REPORTED CONTACTS	**378,262**	**316,943**	**385,738**
Excessive Force Complaints	51	41	41
Sustained Complaints	7	2	0
Discourtesy Complaints	63	77	103
Sustained Complaints	8	7	13
Law Suits in Litigation (1996 -1)	3	2	1
Law Suits Tried/ Settled (Closed)	9	5	0
Law Suits Filed (1996 -1)	11	7	1

Dollar Amounts
Force -   1. $25,000
           2. $ 5,000
Brutality 1. $ 9,500
           2. $ 7,500

These police departments differ from each other on important characteristics. The obvious geographical differences between the areas of the country and including a large metropolitan and smaller city departments will make the findings relevant to a wide audience. Further, the differences in the social and ethnic environments of the cities studied provide an interesting context in which to analyze police use of force. The next section reports the major findings concerning the use of force, including circumstances of the incident and officer and suspect characteristics. Within this section, the Oregon findings will be discussed first, followed by those from Metro-Dade.

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Chapter II

Findings From Eugene and Springfield, Oregon Police Departments

The Eugene and Springfield data set was created from items in the Police Officers'

Essential Physical Work Report Form, which was completed by members of the Eugene and

Springfield, Oregon police departments during April 1995. These data are unique because they

include a broad range of police work, and because they were not collected to evaluate force used

by the police. This data set was part of a larger effort to identify the requisite physical abilities

for police work (Farenholtz et al., 1995). The data included all police-citizen contacts, rather than

being limited to the use-of-force situations captured by the Metro-Dade data. As a result, an

unobtrusive measure of police use of force was available.

The findings from the Eugene and Springfield police departments are reported in the

following order: First, the circumstances surrounding the incidents are described, followed by

information on the suspects' characteristics and actions. Next, the arresting officers'

characteristics and actions are described. Analyses of the officer's actions include cross-

tabulations with suspect resistance to compare the interaction of police use of force and suspect

resistance.

TABLE 1. HOW THE POLICE ACTION WAS INITIATED		
	Frequencies	**Percent**
Officer Observed/Reacted	183	33%
Dispatched Call	319	57%
Planned Investigation	27	5%
Officers Waited for Backup	20	4%

TABLE 1. HOW THE POLICE ACTION WAS INITIATED		
Other	13	2%
Total	562	100%

Most of the police action was initiated by dispatched calls (57%), although 33% of the

incidents were initiated by the officer who observed a situation and reacted (see Table 1).

TABLE 2. DEFINITION OF CRITICAL INCIDENT		
	Frequencies	**Percent**
Motor Vehicle Accident	43	9%
Family Violence	63	14%
Street/Social Violence	117	25%
Resisting Investigation	63	14%
Warrant Arrest	31	7%
Other	149	32%
Total	466	100%

In Table 2 we can see that the most common type of critical incident responded to was

street or social violence (25%). However, 14% of the incidents were for domestic violence, and

another 14% were for resisting an investigation. Thirty-two percent of the incidents did not fall

into one of the pre-defined categories.

TABLE 3. REASONS FOR POLICE ACTION		
	Frequencies	**Percent**
Catch/Control Person	418	76%
Protect Property	13	2%

TABLE 3. REASONS FOR POLICE ACTION		
Assist Another Officer	36	7%
Assist Another Person	29	5%
Assist Other Department	6	1%
Attend Motor Vehicle Acc.	2	<1%
Other	47	9%
Total	551	100%

Most of the police action was taken to catch or control a person (76%)(see Table 3).

Seven percent of the situations involved assisting another officer, and 5% involved the officer

assisting another person.

SUSPECT CHARACTERISTICS

Suspects range in age from 12 years to 86 years. The average age of suspects is between

28 and 29 years. Eighty-four percent of the suspects are males. There is no ethnicity

information on suspects. The perceived mental state of the suspects is detailed in Table 4.

TABLE 4. PERCEIVED MENTAL STATE OF SUSPECT		
	Frequencies	Percent
Calm, Reasonable, Cooperative	289	52%
Emotionally Upset, Abusive	92	17%
Mentally Unstable, Unpredictable	60	11%
Under the Influence - Drugs/Alcohol	106	19%
Violent	10	2%
Total	557	100%

Fifty-two percent of the suspects were calm, reasonable, and cooperative. However, 19% were under the influence of drugs or alcohol, and 17% were emotionally upset or abusive. Eleven percent of the suspects were mentally unstable and unpredictable, and only 2% were violent (see Table 4).

TABLE 5. PERCEIVED PHYSICAL ABILITIES OF SUSPECT		
	Frequencies	**Percent**
Poor	45	8%
Below Average	112	20%
Average	303	55%
Above Average	83	15%
Excellent	8	2%
Total	551	100%

Most of the suspects were average (55%) or below average in physical abilities (20%)(see Table 5). However, 15% were above average, and 2% were perceived to be in excellent physical shape.

TABLE 6. AMOUNT AND TYPE OF SUSPECT RESISTANCE		
	Frequencies	**Percent**
None	338	61%
Slight	102	18%
Moderate	59	11%
High	21	4%
Violent	12	2%
Explosive	5	1%

TABLE 6. AMOUNT AND TYPE OF SUSPECT RESISTANCE		
Suspect Ran Away	14	3%
Suspect Threw Object	1	<1%
Total	553	100%

The majority of suspects did not resist the officer (61%), and 18% put up only slight resistance (see Table 6). Very few resisted strenuously: 4% were characterized as having high resistance, 2% were violent, and 1% explosive.

TABLE 7. TYPE OF RESISTANCE USED BY SUSPECT		
	Frequencies	**Percent**
Grasped Object to Resist Control (i.e. door)	26	23%
Pushed or Pulled on Officer to Resist or Escape	41	36%
Grasped Officer's Clothing to Resist Control	4	4%
Wrestled Officer (i.e. body, neck or limb holds)	4	4%
Struck Officer (i.e. used punches, kicks, elbows)	1	<1%
Used or Threatened with Club	1	<1%
Used or Threatened with Knife	6	5%
Used or Threatened with Gun	5	4%
Other	26	23%
Total	114	100%

Table 7 details the actual type of resistance. The most common type is for the suspect to push or pull the officer to resist or escape (36%). Twenty-three percent grasped some object (i.e. door or rail) to resist the officer. Four percent grasped the officer's clothing to resist control, and another 4% wrestled the officer with body, neck or limb holds. Less than 1% struck the officer,

but 5% threatened the officer with a knife, and 4% with a gun.

TABLE 8. HOW RESTRAINING DEVICES WERE APPLIED		
	Frequencies	**Percent**
Standing Cooperatively	373	72%
Standing with Resistance	52	10%
Kneeling	10	2%
Prone Cooperative	29	6%
Prone with Resistance	48	9%
Other	4	<1%
Total	516	100%

The data in Table 8 indicate that most restraining devices were applied to the suspect while the suspect was standing cooperatively (72%). Ten percent of the time the suspect was standing but giving some resistance. Nine percent of the suspects had restraining devices applied in a prone position while failing to cooperate.

OFFICER CHARACTERISTICS

The age of the officers ranged from 25 to 60 years, with a mean of 37 years. The length of service as an officer ranged between three-quarters of a year to nearly 34 years. The average years of service was 12. Eighty-six percent of the officers were males. Most of the officers were patrol officers (91%), some were detectives (4%) and sergeants (5%). Most worked alone all of the time (87%) or most of the time (13%). Shift length ranged from 8 to 11 hours, with an average of 8.7 hours.

The data in Table 9 summarizes the types of control tactics used by the officers and their level of severity. It is apparent that in the vast majority of incidents, the officer talked to the suspect (96%) and handcuffed the suspect (91%). In addition, nearly all officers searched the suspect (87%). Beyond these three tactics, the numbers begin to fall sharply. In only 38% of the incidents did the officer use a "wrist-arm lock" technique to subdue the suspect. In 8% of the cases, the officers used a "take-down," and the officers wrestled the suspect with body or neck holds in only 4% of the incidents . Pepper spray was used in only 3% of the cases. Very few officers used firearms to subdue the suspect (2%).

TABLE 9. CONTINUUM OF FORCE: TYPES OF CONTROL TACTICS USED BY OFFICERS IN ORDER OF SEVERITY							
	Tactic 1	**Tactic 2**	**Tactic 3**	**Tactic 4**	**Tactic 5**	**Tactic 6**	**Total**
Talk to Suspect	523 96%	-----	-----	-----	-----	-----	523 96%
Handcuff Suspect	16 3%	480 88%	-----	-----	-----	-----	496 91%
Search Suspect	1 .2%	22 4%	449 83%	-----	-----	-----	472 87%
Use Wrist-Arm Lock	1 .2%	3 .6%	20 4%	183 34%	-----	-----	207 38%
Use Take-Down	1 .2%	1 .2%	1 .2%	24 4%	18 3%	-----	45 8%
Block, Punch-Kick	-----	1 .2%	-----	2 .4%	9 2%	-----	12 2%
Strike Suspect	1 .2%	-----	-----	2 .4%	5 1%	4 1%	12 2%
Wrestle Suspect	-----	2 .4%	2 .4%	1 .2%	10 2%	7 1%	22 4%

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TABLE 9. CONTINUUM OF FORCE: TYPES OF CONTROL TACTICS USED BY OFFICERS IN ORDER OF SEVERITY							
Pepper Spray	-----	-----	1 .2%	2 .4%	2 .4%	10 2%	15 3%
Use Baton	-----	-----	1 .2%	-----	-----	4 1%	5 1%
Use Firearm	-----	1 .2%	-----	9 2%	1 .2%	1 .2%	12 2%
Other Tactic	-----	-----	1 .2%	-----	-----	4 1%	5 1%
Multiple Tactics	1 .2%	-----	-----	-----	-----	-----	1 .2%

N = 544

The next analysis involved comparing the control tactics used with varying amounts of suspect resistance. The purpose of this analysis is to determine how many officers deviate from the normal tactics used for the level of the suspect's resistance.

TABLE 10. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 1)				
	No Resistance by Suspect	**Slight Resistance**	**Moderate/High Resistance**	**Violent or Explosive Beh.**
Talk to Suspect	298 (98%)	95 (100%)	68 (87%)	15 (88%)
Handcuff Susp.	6 (2%)	------	9 (12%)	------
Search Suspect	1 (>1%)	------	------	------
WristArmLock	------	------	------	1(6%)
Take-Down	------	------	1 (1%)	------
Mult. Tactics	------	------	------	1 (6%)
Total	305 (62%)	95 (19%)	78 (16%)	17 (3%)

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Only 2.3% of the officers deviated from talking to the suspect when there was no

resistance by the suspect (see Table 10). Deviating from this normal process increased when

suspect resistance was moderate or high (13%), violent or explosive (12%).

TABLE 11. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 2)				
	No Resistance by Suspect	Slight Resistance	Moderate/High Resistance	Violent or Explosive Beh.
Handcuff Susp.	292 (96%)	92 (97%)	65 (84%)	16 (100%)
Search Suspect	9 (3%)	3 (3%)	7 (9%)	------
WristArmLock	1 (>1%)	------	2 (3%)	------
Take-Down	------	------	1 (1%)	------
Block/Punch/ Kick	------	------	1 (1%)	------
Wrestle Susp.	------	------	1 (1%)	------
Use Firearm	1 (>1%)	------	------	------
Total	303 (62%)	95 (19%)	77 (16%)	16 (3%)

Only 3% of the officers deviated from handcuffing the suspect during the encounter when

there was no or slight resistance by the suspect (see Table 11). Deviating from the normal

control process increased to almost 16% when suspect resistance was moderate to high. No

deviation occurred when suspect resistance was violent or explosive, which was unusual.

TABLE 12. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 3)				
	No Resistance by Suspect	Slight Resistance	Moderate/High Resistance	Violent or Explosive Beh.

TABLE 12. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 3)				
Search Suspect	277 (99%)	86 (96%)	59 (81%)	14 (88%)
WristArmLock	1 (>1%)	4 (4%)	9 (12%)	2 (13%)
Take-Down	------	------	1 (1%)	------
Wrestle Susp.	------	------	2 (3%)	------
Pepper Spray	------	------	1 (1%)	------
Use Baton	------	------	1 (1%)	------
Total	278 (61%)	90 (20%)	73 (16%)	16 (4%)

Only .4% deviated from searching the suspect when there was no resistance (see Table 12). A little more than 4% of the officers deviated from this normal process when resistance was slight, 19% when resistance was moderate or high, and 13% when resistance was violent or explosive. These results may be influenced by the high level of resistance experienced by the officer or the involvement of more than one officer in a confrontation.

TABLE 13. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 4)				
	No Resistance by Suspect	Slight Resistance	Moderate/High Resistance	Violent or Explosive Beh.
WristArmLock	84 (98%)	42 (82%)	47 (76%)	6 (38%)
Take-Down	------	3 (6%)	11 (18%)	7 (44%)
Block/Punch/K	------	------	1 (2%)	1 (6%)
Strike Suspect	------	1 (2%)	------	1 (6%)
Wrestle Susp.	------	------	1 (2%)	------
Pepper Spray	------	------	2 (3%)	------
Use Firearm	2 (2%)	5 (10%)	------	1 (6%)

TABLE 13. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 4)				
Total	86 (40%)	51 (24%)	62 (29%)	16 (7%)

TABLE 14. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 5)				
	No Resistance by Suspect	Slight Resistance	Moderate/High Resistance	Violent or Explosive Beh.
Take-Down	------	------	14 (45%)	3 (27%)
Block/Punch/ Kick	------	------	4 (13%)	4 (36%)
Strike Suspect	------	------	4 (13%)	1 (9%)
Wrestle Susp.	------	------	8 (26%)	2 (18%)
Pepper Spray	------	------	1 (3%)	1 (9%)
Use Firearm	------	1 (100%)	------	------
Total	------	1 (2%)	31 (72%)	11 (26%)

It is obvious from the data in Table 13, representing what control measures were used as tactic four of the encounter, that more deviation from a normal process takes place the more tactics are used. In fact, after four tactics, any pattern breaks down. Most suspects requiring this many tactics are resisting strongly, and officer tactics seem to be explained best by "what ever works." For example, firearm use is reserved mostly after more than three tactics are required to subdue the suspect (see Tables 13-15).

TABLE 15. CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE (TACTIC 6)				
	No Resistance by Suspect	Slight Resistance	Moderate/High Resistance	Violent or Explosive Beh.
Strike Suspect	------	------	2 (11%)	2 (18%)
Wrestle Susp.	------	------	6 (32%)	1 (9%)
Pepper Spray	------	------	6 (32%)	4 (36%)
Use Baton	------	------	2 (11%)	2 (18%)
Use Firearm	------	------	1 (5%)	------
Other	------	------	2 (11%)	2 (18%)
Total	------	------	19 (63%)	11 (37%)

Highest Level of Force Used

The next analysis involved determining the highest level of officer force used in each incident compared with the level of resistance of the suspect. This analysis provides another way to determine if the level of the officer force is consistent with the level of the suspect's resistance. When there is no resistance by the suspect, most officers used only talking (8%), handcuffing (65%), and wrist-arm-locks (27%) (see Table 16). However, three officers used a firearm. When the suspects used slight resistance there were a few deviations, but most officers used talking, handcuffing, or wrist-arm-locks (altogether 90%). There were a few takedowns (3%), one striking of a suspect, and six uses of a firearm (6%). However, when suspects resisted at a level determined as moderate or high, less than half of the officers only used talking, handcuffing, or wrist-arm-locks as their highest level of force (48%). Finally, when suspect resistance was violent or explosive, all officers went beyond talking, and handcuffing. Only four officers listed wrist-arm-lock as the highest level of force used against the suspect (24%). The

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most frequently used type of force was a take-down (29%). This was followed by striking the

suspect (18%), wrestling the suspect (12%), and using a baton (12%). Only one officer used a

firearm (6%).

TABLE 16. MOST SEVERE CONTROL TACTICS USED BY THE OFFICER BY LEVEL OF SUSPECT'S RESISTANCE				
	No Resistance by Suspect	**Slight Resistance**	**Moderate/High Resistance**	**Violent or Explosive Beh.**
Talk to Suspect	26 (8%)	7 (7%)	3 (4%)	-----
Handcuff Susp.	211 (65%)	41 (41%)	6 (8%)	-----
WristArmLock	87 (27%)	42 (42%)	29 (36%)	4 (24%)
Pepper Spray	-----	------	2 (5%)	------
Block/Kick/Pun	-----	-----	1 (1%)	-----
Take-Down	------	3 (3%)	14 (18%)	5 (29%)
Strike Suspect	------	1 (1%)	4 (5%)	3 (18%)
Wrestle Susp.	------	------	16 (20%)	2 (12%)
Use Baton	------	------	4 (5%)	2 (12%)
Use Firearm	3 (1%)	6 (6%)	1 (1%)	1 (6%)
Total	327 (62%)	100 (19%)	80 (15%)	17 (3%)

Chapter III

Findings From Metro-Dade Police Department

The Metro-Dade data set includes 882 official Metro-Dade Police Department Control of

Persons Reports from the last quarter of 1993, and all of 1994 and 1995. These data are reported

by the officer's supervisor after talking to the officer, suspect and available witnesses. The

Department's computerized information data base was used to create our data set.

The findings from the Metro-Dade police department are reported in the following order.

First, information on the suspects' characteristics and actions is described, followed by the

arresting officers' characteristics and actions. This is followed by analyses of the interaction

patterns between officers and suspects. Finally, a series of analyses on the role of officer and

suspect ethnicity are discussed.

TABLE 1. YEAR OF INCIDENT		
Year	Frequency	Percentage
1993	88	10%
1994	447	51%
1995	347	39%
Total	882	100%

The number of incidents for 1993 represent only the last quarter of the year. The cases

for 1994 and 1995 are for the entire year.

SUSPECT CHARACTERISTICS

Suspects ranged in age from 12 years old to 90 years of age. The mean age was 28.6

years. Forty-seven percent of the suspects were Black, 35% were Hispanic, and 54% were White. Eighty-nine percent of the suspects were male, and 11% were female. Forty-two percent of the suspects were impaired only by alcohol or drugs at the time of the incident. Twenty-four percent were impaired with alcohol, and the remaining were impaired with a variety of illegal drugs.

TABLE 2. BEHAVIOR OF THE SUSPECT		
Behavior	Frequency	Percent
Calm	194	23%
Visibly Upset	149	18%
Erratic	203	24%
Highly Agitated	272	33%
Baker Act/Exparte[1]	20	2%
Total	838	100%

[1] Refers to persons who were mentally ill or who were taken into custody under a temporary restraining order.

A majority of suspects were highly agitated or at least erratic in their behavior during the encounter with the police officer. When reporting the behavior of the suspects, officers reported that suspects were highly agitated more than any other category of behavior (33%). They reported erratic behavior 24% of the time. However, 23% of the time suspects were calm when interacting with the officer.

TABLE 3. RESISTANCE BY SUSPECT		
	Frequency	Percent
No Resistance	28	3%

TABLE 3. RESISTANCE BY SUSPECT		
Passive Resistance	86	10%
Attempted Escape/Flee	175	21%
Actively Resisted Arrest	306	36%
Resisted Arrest/Incited	42	5%
Assaulted Officer	207	25%
Total	844	100%

Since these cases all involved some degree of use of force by the officer, it was not surprising that almost all cases involved suspects who showed some degree of resistance (97%). The category of resistance reported most often was actively resisting arrest (36%). The next largest category of suspect resistance was assaulting the officer (25%). Twenty-one percent attempted to escape or flee the scene.

TABLE 4. TYPE OF SUSPECT INJURY		
	Frequency	Percentage
Bruise/Abrasion	306	48%
Sprain/Strain	21	3%
Laceration	154	24%
Bite	45	7%
Puncture	3	<1%
Broken Bone/Fracture	5	<1%
Internal Injury	2	<1%
Gunshot	28	4%

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TABLE 4. TYPE OF SUSPECT INJURY		
Soreness	2	<1%
Injury Not Related	66	10%
Total	632	100%

The most common type of suspect injury was a bruise or abrasion (48%). The next most common was lacerations (24%). Ten percent of the suspects had injuries not related to the incident with the police, and another 7% had bite injuries. Four percent had injuries from gunshots.

TABLE 5. TYPE OF FORCE USED BY SUBJECT		
	Frequency	**Percent**
Hands/Arm	461	65%
Fist	96	14%
Foot/Leg	82	12%
Teeth	13	2%
Blunt Instrument	8	1%
Cutting Instrument	7	1%
Handgun	21	3%
Rifle	1	<1%
Shotgun	6	1%
Vehicle	10	1%
Total	705	100%

Most of the use of force incidents involved hands and arms only (65%). An additional 14% used their fist against the officer, and 12% used their foot or leg. Less than 5% used a gun

of some type (handgun, rifle or shotgun). One percent used a vehicle to assault the officer. In addition, one percent used a cutting instrument.

TABLE 6. HOW FORCE WAS USED BY SUSPECT		
	Frequency	**Percentage**
Threaten	51	8%
Grab/Hold	129	20%
Push/Pull	181	27%
Strike/Hit	229	44%
Bite	6	1%
Throw	2	<1%
Slash	2	<1%
Discharge a Weapon	11	2%
Restraint	1	<1%
Total	682	100%

The most common type of force used by the suspect was to strike or hit the officer (44%). In 27% of the incidents, the suspect pushed or pulled the officer, and another 20% grabbed or held the officer. Eight percent of the incidents involved only threatening the officer.

OFFICER CHARACTERISTICS

The age of the officers ranged from 21 years old to 66 years of age. The mean age was 34 years. Most officers were Anglo (54%), but 31% were Hispanic, and 14% were Black. Eighty-nine percent of the officers were male, and 11% were female. Most of the officers were assigned to patrol (92%), and 5% were Sergeants. The majority of the officers were assigned to the Uniform Unit (73%), 9% were assigned to General Investigation, and 8% to K-9 Patrol. The

remaining 10% was scattered throughout a number of other units.

TABLE 7. LEVEL OF FORCE USED BY THE OFFICER		
	Frequency	**Percent**
No Force Used- but Officer Injured	8	1%
No Force Used-Subject Complained of Injury	28	3%
Minimum Physical Contact - Officer Injured	25	3%
Minimum Force to Guide or Control Suspect.	167	20%
Forcibly Subdued Suspect with Hands	415	49%
Force Other Than Hands were used to Subdue	208	24%
Total	851	100%

The most common level of force used by officers against suspects was to forcibly subdue

the suspect with hands (49%). Another 24% were subdued by the officer with force other than

hands. Twenty percent of the incidents involved just minimal force, and the remainder required

either minimal contact with the suspect (3%), or no force (4%).

TABLE 8. TYPE OF FORCE USED BY OFFICER		
	Frequency	**Percent**
Hands/Arms	621	77%
Fist	21	3%
Foot/Leg	9	1%
Handgun	60	8%
Shotgun	5	<1%
Radio	3	<1%
Flashlight	6	<1%
Pr-24	11	1%

TABLE 8. TYPE OF FORCE USED BY OFFICER		
K-9	53	7%
Chemical Agent	4	<1%
Special Weapon	9	1%
Lateral Neck Restraint	1	<1%
Total	803	100%

The most common type of force used by officers was hands and arms (77%). Eight percent used handguns, and another 7% used police canines. In 3% of the incidents, officers used their fists.

TABLE 9. HOW FORCE WAS USED BY OFFICER		
	Frequency	Percentage
Threaten	3	<1%
Grab/Hold	529	64%
Push/Pull	38	5%
Strike/Hit	79	10%
Bite	48	6%
Throw	2	<1%
Discharge	65	8%
Restraint	57	7%
Total	821	100%

In the majority of the incidents, officers used force to grab or hold the suspect (64%). The next most common use of force was to strike or hit the suspect (10%). In 8% of the incidents, the officer discharged his or her weapon, and in 7% the officer used some type of

restraint. Officers bit the suspect in 6% of the cases, and pushed or pulled them in 5% of the incidents.

TABLE 10. TYPE OF OFFICER INJURY		
	Frequency	Percentage
Bruise/Abrasion	197	64%
Sprain/Strain	46	15%
Laceration	45	15%
Bite	6	2%
Puncture	1	<1%
Broken Bone/Fracture	5	2%
Internal Injury	1	<1%
Gunshot	3	1%
Soreness	1	<1%
Injury Not Related	3	1%
Total	308	100%

The most common injury to officers was bruises or abrasions (64%), followed by sprains or strains (15%) and lacerations (15%). Two percent of the officers were bitten by the suspect, and another 2% suffered broken or fractured bones. Only 1% of the officers was injured by a gunshot.

TABLE 11. TREATMENT OF OFFICER		
	Frequency	Percentage
None	670	76%
Refused	2	<1%

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TABLE 11. TREATMENT OF OFFICER		
First Aid	101	12%
Fire Rescue	53	6%
Hospital	1	<1%
Personal Physician	1	<1%
Total	878	100%

The vast majority of officers received no treatment (76%). However 12% were given first aid, and 6% were treated by paramedics at the scene. Fewer than 1% were treated at a hospital or by their personal physician.

INTERACTION PATTERNS BETWEEN OFFICER AND SUSPECT

Now we will turn to the analysis of two variables at one time to examine important relationships between variables. The focus of the analyses in this section is on the interaction patterns between the officer and the suspect. In other words, was there a relationship between the suspect's initial behavior and the officer's response? The data reported in Table 12 show that there is a relationship between these two variables. Even though calm suspects are the least likely of all suspects to resist the officer, 92% did resist, 31% attempted to flee, 23% actively resisted the officer, and 17% assaulted the officer. While calm suspects were the least likely to actively resist the officer or assault the officer, they were the **most** likely to attempt to flee, even more so than the "Baker Act" suspects (see Table 12).

TABLE 12. INITIAL SUSPECT BEHAVIOR BY RESISTANCE						
	No Resistance	Passive Resistance	Attempted to Flee	Actively Resisted	Resisted Arrest/Incite	Assaulted Officer

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TABLE 12. INITIAL SUSPECT BEHAVIOR BY RESISTANCE						
Calm	15 (8%)	39 (20%)	61 (31%)	44 (23%)	3 (2%)	32 (17%)
Visibly Upset	4 (3%)	17 (11%)	27 (18%)	71 (48%)	4 (3%)	26 (17%)
Erratic	7 (3%)	15 (7%)	46 (23%)	78 (38%)	8 (4%)	49 (24%)
Highly Agit.	1 (<1%)	13 (5%)	34 (13%)	104 (38%)	27 (10%)	92 (34%)
Baker Act			6 (30%)	8 (40%)		6 (30%)
Total	27 (3%)	84 (10%)	174 (21%)	305 (36%)	42 (5%)	205(25%)

Sign. = .000

Further, the suspects who initially acted in a calm manner were the most likely to resist the

officer with a gun or use a vehicle to assault the officer (see Table 13).

TABLE 13. INITIAL SUSPECT BEHAVIOR BY TYPE OF SUSPECT FORCE USED				
	Own Body	**Blunt/Cutting Instrument**	**Gun**	**Vehicle**
Calm	112 (93%)		6 (5%)	3 (3%)
Visibly Upset	124 (97%)		3 (2%)	1 (<1%)
Erratic	154 (92%)	3 (2%)	7 (4%)	4 (2%)
HighlyAgitated	232 (92%)	9 (4%)	8 (3%)	2 (<1%)
Baker Act	17 (85%)	3 (15%)		
Total	639 (93%)	15 (2%)	24 (4%)	10 (1%)

Sign. = .010

The initial behavior of the suspect did not influence whether or not the suspect was

injured during the arrest, but it did influence the level of force used by the officer (see Table 14).

Apparently, suspects who were initially calm were the least likely to have force used against

them. Still 91% of the suspects had force used to apprehend them. They were no more likely

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than other suspects to have minimal force used against them, but less likely than other suspects to be forcibly subdued by the officer's hands. However, they were among the top two groups to be forcibly subdued by the officer using some method other than the hands (see Table 14).

TABLE 14. INITIAL SUSPECT BEHAVIOR BY LEVEL OF OFFICER FORCE				
	No Force	Minimal Force	Forcibly Subd./Hands	Force Other Than Hands
Calm	18 (9%)	51 (26%)	71 (37%)	53 (28%)
Visibly Upset	4 (3%)	36 (25%)	81 (55%)	26 (18%)
Erratic	5 (3%)	52 (26%)	89 (44%)	56 (28%)
HighlyAgitated	5 (2%)	46 (17%)	162 (60%)	57 (21%)
Baker Act	1 (5%)	4 (20%)	10 (50%)	5 (25%)
Total	33 (4%)	189 (23%)	413 (50%)	197 (24%)

Sign. = .000

An analysis of the initial behavior of the suspect and officer injury resulted in two interesting differences, in spite of the overall relationship slightly missing the usual cut-off for statistical significance. The statistical significance is .09 instead or .05 or lower. However, suspects who were described as visibly upset or highly agitated inflicted more officer injuries than other suspects (39% and 40% respectively), and Baker Act suspects inflicted fewer injuries than others (20%) (see Table 15).

TABLE 15. INITIAL SUSPECT BEHAVIOR BY OFFICER INJURY		
	No Injury	Injury
Calm	131 (68%)	63 (33%)
Visibly Upset	91 (61%)	58 (39%)
Erratic	140 (69%)	63 (31%)
Highly Agitated	163 (60%)	109 (40%)

TABLE 15. INITIAL SUSPECT BEHAVIOR BY OFFICER INJURY		
Baker Act/Expart	16 (80%)	4 (20%)
Total	541 (65%)	297 (35%)

Sig. = .089

Another interesting issue is how the subject's resistance affected the level of force the officer chose. Table 16 indicates that the level of subject resistance is highly related to the level of force used by the officer (see Table 16). Further, it appears that there are not many cases of obvious mismatches between the two.

TABLE 16. TYPE OF SUSPECT RESISTANCE BY LEVEL OF OFFICER FORCE				
	No Force	Minimal Force	Forcibly Subd./Hands	Force Other Than Hands
No Resistance	17 (71%)	5 (21%)		2 (8%)
Passive Resist.	6 (7%)	52 (61%)	11 (13%)	17 (20%)
Attempted-Flee	5 (3%)	42 (24%)	69 (40%)	58 (33%)
Active Resist.	2 (1%)	59 (19%)	184 (60%)	61 (20%)
Res. Arr./Incite		1 (2%)	33 (79%)	8 (19%)
Assaulted Off.	3 (2%)	33 (16%)	116 (56%)	54 (26%)
Total	33 (4%)	192 (23%)	413 (49%)	200 (24%)

Sig. = .000

There was a strong relationship between the level of officer force used and the chances of an officer injury (see Table 17). Increasing levels of officer force correspond with higher probabilities of officer injury. When no force is called for or used, only 2% of officers are injured. However, minimal force situations result in 15% of officers being injured, and situations involving officers forcibly subduing suspects with their hands resulted in 69% of officers being

injured. However, when officers used force other than their hands, injuries were lowered to 15% (see Table 17).

TABLE 17. OFFICER FORCE LEVEL BY OFFICER INJURY		
	No Injury	Injury
No Force	30 (6%)	6 (2%)
Minimal Force	147 (27%)	45 (15%)
Forcibly Subdued w/Hands	206 (38%)	209 (69%)
Forcibly Subdued - Other	164 (30%)	44 (15%)
Total	547 (64%)	304 (36%)

Sig. = .089

It is clear that as levels of suspect resistance increased, the chances of an injury to the attending officer also increased (see Table 18). No resistance or passive resistance seldom resulted in an officer injury. However, when the suspect attempted to flee or actively resisted arrest, the chances of an officer injury is increased dramatically. The chances of an officer injury increased even more when the suspect incited others or actually assaulted the officer.

TABLE 18. TYPE OF SUSPECT RESISTANCE BY OFFICER INJURY		
	No Injury	Injury
No Resistance	27 (96%)	1 (4%)
Passive Resist.	81 (94%)	5 (6%)

TABLE 18. TYPE OF SUSPECT RESISTANCE BY OFFICER INJURY		
Attempted- Flee	119 (68%)	56 (32%)
Actively Resist	192 (63%)	114 (37%)
Res. Arrest/Incite	22 (52%)	20 (48%)
Assault Officer	106 (51%)	101 (49%)
Total	547 (65%)	297 (35%)

Sig. = .000

THE ROLE OF ALCOHOL OR DRUG IMPAIRMENT ON THE SUSPECTS' BEHAVIOR

Another important question is the influence of alcohol or drugs on the arrest situation.

Does being intoxicated affect the suspect's level of resistance or the officer's level of force?

Further, how does subject intoxication affect the chances of injury to the suspect or the officer?

In Table 19, the information on suspect impairment and the suspect's initial behavior were

compared. Suspects who were under the influence of alcohol or drugs were far less likely to be

calm, and less likely to be visibly upset than sober suspects (see Table 19). Furthermore,

impaired suspects were more likely to be erratic, highly agitated, or emotionally unstable.

TABLE 19. SUSPECT IMPAIRMENT BY SUSPECT INITIAL BEHAVIOR					
	Calm	Visibly Upset	Erratic	Highly Agitated	Baker Act
Sober	157 (32%)	106 (22%)	79 (16%)	141 (29%)	8 (2%)
Impaired	37 (11%)	43 (13%)	124 (36%)	129 (37%)	12 (4%)
Total	194 (23%)	149 (18%)	203 (24%)	270 (32%)	20 (2%)

Sig. = .000

Suspects who were intoxicated were no more or less likely to resist the officer than sober

suspects. However, when they resisted, they resisted in different ways. First, they were less

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likely to resist passively, and second, they were less likely to attempt to flee the officer than

suspects not under the influence. They were more likely to resist actively or to directly assault

the officer than those not under the influence (see Table 20). In spite of this, suspects who were

impaired were no more likely to have force used on them by the officer, or to be injured during

the arrest than sober subjects.

TABLE 20. SUSPECT IMPAIRMENT BY TYPE OF RESISTANCE					
	No Resistance	**Passive Resistance**	**Attempted - Flee**	**Active Resistance**	**Res. Arr. & Incite**
Sober	16 (3%)	58 (12%)	124 (25%)	166 (34%)	26 (5%)
Impaired	12 (3%)	28 (8%)	51 (15%)	140 (40%)	16 (5%)
Total	28 (3%)	86 (10%)	175 (21%)	306 (36%)	42 (5%)

Sig. = .000

Even though the overall significance of the relationship between impairment and type of

resistance by the suspect was not statistically significant, there was a fairly large difference in

resisting by use of a gun. Impaired suspects were twice as likely than sober suspects to use a gun

to resist the police (see Table 21). It is interesting to note that suspect impairment by drugs or

alcohol was not related to whether or not the officer received an injury during the incident.

TABLE 21. SUSPECT IMPAIRMENT BY TYPE OF FORCE USED BY SUSPECT				
	Own Body	**Blunt/Cut Instrument**	**Handgun**	**Vehicle**
Sober	360 (94%)	8 (2%)	10 (3%)	5 (1%)
Impaired	281 (90%)	7 (2%)	18 (6%)	5 (2%)
Total	641 (92%)	15 (2%)	28 (4%)	10 (1%)

Sig. = .198

OFFICER CHARACTERISTICS AND BEHAVIOR

In a perfect police department, with perfect officers and perfect training, officer characteristics would not be related to officer behavior. All officers would respond to the same situations in the same way, according to the rules, the regulations, and the policies of the department. In the real world, however, officer characteristics often make a difference in how they respond to situations. Nevertheless, in the cases examined in the present study, officer characteristics did not make much of a difference in whether or not force was used, nor in the level of force used. There were no statistically significant differences in the level of force used by male and female officers. Further, the ethnicity of the officer did not affect whether force was used or the level of force used. Officer age differences were statistically significant (see Table 22), but the differences may simply reflect the differences in assignments of younger versus older officers. As the level of force increased, the average age of the officers involved decreased. However, at the highest level of force (subduing the suspect with force other than one's hands), the average age is higher than any other level of force used (35 years of age).

TABLE 22. AVERAGE AGE OF OFFICERS BY LEVEL OF FORCE USED			
	Mean	Standard Deviation	Number of Cases
No Force	35.03	9.77	34
Minimal Force	33.78	8.26	182
For. Subd. w/Hands	32.84	7.88	398
For. Subd.-Other	34.77	7.62	206
Total	33.63	7.98	820

Sig. = .028

OFFICER AND SUSPECT ETHNICITY

The data presented in Table 23 show the relationship between the ethnicity of the officer and that of the suspect in force situations. Officers and suspects with the same ethnic background were most likely to use force against one another. For example, white officers used force against white suspects more than Black or Hispanic officers. Black officers used force against Black suspects more than White or Hispanic officers. And, Hispanic officers used force against Hispanic suspects more than White or Black officers. The differences were the least pronounced for White officers and the most pronounced for Black officers. This could be due to a tendency to deploy officers in areas with a preponderance of citizens of their own ethnicity. However, with the greater diversity of neighborhood ethnicity in recent years, this finding may reflect a real proclivity on the part of officers to respond differently to the various ethnic groups. If this is true, each ethnic group may feel more comfortable using force on suspect from their own group (see Table 23).

TABLE 23. THE ETHNICITY OF OFFICERS AND SUSPECTS IN FORCE SITUATIONS				
Officer's Ethnicity	White	Suspect's Black	Ethnicity Hispanic	Total
White	84 (19%)	201 (46%)	155 (35%)	440 (55%)
Black	11 (10%)	82 (75%)	17 (16%)	110 (14%)
Hispanic	45 (18%)	93 (37%)	111 (45%)	249 (31%)
Total	140 (18%)	376 (47%)	283 (35%)	799(100%)

Sig. = .000

The data in Table 24 compare officer/offender ethnic matches with the degree of resistance of the offender. While there was not any relationship between ethnic matches and

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whether the offender offers resistance, there were differences in the levels of resistance. For example, the ethnic match resulting in the greatest likelihood of the offender assaulting the officer is when a Black officer is arresting a White suspect (46%). Contrast this with the likelihood of assault when a White officer is arresting a White suspect (14%) or when a Black officer is arresting a Black suspect (17%).

TABLE 24. OFFICER/SUSPECT ETHNIC MATCHES AND RESISTANCE BY SUSPECT						
	No Resistance	Passive Resistance	Attempted to Flee	Actively Resisted	Resisted Arr./Incite	Assaulted Officer
Ang/Ang	2 (2%)	7 (8%)	13 (16%)	48 (57%)	2 (2%)	12 (14%)
Ang/Blk	7 (4%)	15 (8%)	46 (23%)	64 (32%)	16 (8%)	51 (26%)
Ang/Hisp	4 (3%)	20 (13%)	28 (18%)	58 (37%)	2 (1%)	43 (28%)
Blk/Ang	------	------	2 (18%)	4 (36%)	------	5 (46%)
Blk/Blk	2 (3%)	9 (11%)	17 (21%)	30 (37%)	9 (11%)	14 (17%)
Blk/Hisp	------	1 (6%)	6 (35%)	6 (35%)	------	4 (24%)
Hisp/Ang	2 (4%)	6 (13%)	5 (11%)	18 (40%)	1 (2%)	13 (29%)
Hisp/Blk	3 (3%)	7 (8%)	24 (26%)	32 (35%)	9 (10%)	16 (18%)
Hisp/Hisp	5 (5%)	14 (13%)	24 (22%)	33 (30%)	2 (2%)	33 (30%)
Total	25 (3%)	79 (10%)	165 (21%)	293 (37%)	41 (5%)	191 (24%)

Sig. = .006

In Table 25, officer ethnicity matches are compared with the level of force used by the officer. Force was used most often when the officer was Black and the suspect was White (100%) or Hispanic (100%). Force was used less often when the officer was Hispanic and the suspect Black (93%). Force with hands was used most often when the officer was Black and the suspect was either White (73%) or Hispanic (77%). Force, other than hands, was used most often when the officer was White and the suspect Black (32%).

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TABLE 25. OFFICER/SUSPECT ETHNIC MATCHES AND LEVEL OF FORCE USED BY THE OFFICER				
	No Force	Minimal Force	Force w/Hands	Force Other
Ang/Ang	1 (1%)	21 (25%)	45 (54%)	17 (20%)
Ang/Blk	7 (4%)	42 (21%)	88 (44%)	63 (32%)
Ang/Hisp	8 (5%)	38 (25%)	71 (46%)	38 (25%)
Blk/Ang	------	2 (18%)	8 (73%)	1 (9%)
Blk/Blk	3 (4%)	15 (18%)	41 (50%)	23 (28%)
Blk/Hisp	------	2 (12%)	13 (77%)	2 (12%)
Hisp/Ang	1 (2%)	13 (29%)	19 (42%)	12 (27%)
Hisp/Blk	6 (7%)	13 (14%)	48 (52%)	25 (27%)
Hisp/Hisp	7 (6%)	33 (30%)	57 (51%)	14 (13%)
Total	33 (4%)	179(23%)	390 (49%)	195 (25%)

Sig. = .030

Chapter IV
The Force Factor

Prior research on use of force by the police has focused on the most force used or the highest level reached in an encounter. The present analysis differs from previous ones as its focus is on the level of force used by the police **relative** to the suspect's amount of resistance, which we call the force factor.

To calculate the force factor, one must measure both the suspects' level of resistance and the officers' level of force, scaled in the same manner. Even though the force factor is a relative measure of force, in situations where the level of police force is greater than the level of resistance, there is no implication that the level of force was excessive or improper. For example, an officer may justifiably use more force than a suspect to gain control of the situation. Similarly, it is possible that a suspect's resistance may exceed the level of force used by the officer. A force factor representing such a disparity does not necessarily mean that the officers' level of force was too weak or improper. A weaker police use of force could represent an incident in which a suspect shoots an officer who was unable to respond. Similarly, a negative number could represent a suspect who attacked an officer but who was controlled with a minimum of police force. Additionally, measurement error may exist in cases which include multiple officers and/or multiple suspects. In any case, it is the Force Factors that reflect the greatest differences in use of force and that are the most interesting.

Oregon Use-of-Force Data

Using the Oregon data, we measured the level of resistance in four ordinal categories which are similar to the Metro-Dade analysis: 1) no resistance, 2) slight resistance, 3) moderate

or high resistance, and 4) violent or explosive resistance. **No resistance** means the suspect was cooperative and followed all verbal instructions given by the officer. **Slight resistance** means the suspect resisted the officer's actions and the officer had to use strong directive language and/or minimal physical force (skills) to encourage the suspect to cooperate and follow directions. **Moderate or high resistance** involved a suspect impeding the officer's movement, resisting cuffing, or resisting placement in the car. This level of resistance required the officer to use arm/wrist locks and/or distracting techniques or fighting skills to gain compliance and control. **Violent or explosive resistance** was the most extreme level of resistance. In these cases, suspects struggled or fought violently and required the officer to: (1) use fighting skills to disengage or (2) use a spray, baton or firearm, or (3) continue fighting to gain control. In some of these cases, the officer decided he or she needed to use weapons or other special tactics to gain control instead of engaging the suspect directly.

The corresponding categories for levels of force are 1) no force, 2) slight force, 3) forcibly subdued suspect with hands, and 4) forcibly subdued suspect using methods other than hands. **No Force** means the officer used normal verbal commands. **Slight force** means the officer had to use strong directive language and/or minimal physical force to encourage the suspect to cooperate and follow directions. **Forcibly subduing the suspect with hands** involves the officer using an arm/wrist lock, take down, block, punch or kick, striking or wrestling the suspect. **Forcibly subdued suspect using methods other than hands** means the officer used pepper spray, a baton, a gun, or other special tactics or weapons.

To calculate the force factor, we subtracted the level of resistance (1 - 4) from the level of police force (1 - 4), *FORCE - RESISTANCE = FORCE FACTOR*. The range of the force factor

is from minus three to plus three. A zero is interpreted as commensurate force for the level of resistance. For example, no resistance and no force would be 1 - 1 = 0, or passive resistance and minimal police force would be 2 - 2 = 0. If the level of force is higher than the level of resistance, then the force factor is positive, with one point for each level of discongruence or a maximum of 3. If the level of force is lower than the level of resistance, then the force factor is negative, one point for each level of discongruence or a maximum of -3. Figure 1 represents the Oregon police officers' use of force in relation to the level of suspect resistance. The distribution of scores on the force factor for the Oregon data resembles a normal curve. In the Oregon data the distribution is slightly skewed to the positive side, meaning that more force than resistance was used (see Figure 1). As noted above, a force factor that shows ore force than resistance does not imply that the police force was excessive or improper. In fact, since the police have the authority to more force than a suspect to gain control of a situation, a positively skewed distribution may be expected. While a comparison between the two sites is compelling, interpreting any differences would be problematic because each data set represents a different selection of incidents as discussed above.

Figure 1 Here

There are a number of variables measured in the Oregon study that are significantly related to the force factor: *the type of incident, the suspect's gender, the suspect's perceived physical abilities, the suspect's perceived mental state, the suspect's level of effort, the officer's length of time in the department, the officer's psychological stress level approaching the*

incident, officer's level of effort to control the situation, the time the officer took to get to the

problem, the time the officer took to control or resolve thé problem, and whether or not the

officer was injured.

First, the relative effect of these variables on the Oregon force factor are considered. Second, the individual effect of each variable is discussed in more detail. In Table 1, the results are summarized for the multivariate analysis to examine the relative importance of each variable.

We can see from the strength of the coefficients that the suspect's mental status at the time of the incident was the strongest factor in the model (-.236). The next strongest coefficient is for the suspect's effort used during the incident (.160). The third variable was "how psychologically stressful it was for the officer leading up to the incident" (-.122). The fourth strongest variable was the type of incident (whether violence-related) (-.088). The fifth factor was the suspect's physical fitness (-.082). The sixth factor was the suspect's gender (-.075). The seventh was the time the officer took to get to the problem (-.058), and the last variable was the length of the officer's service on the police department (-.051). Together the variables accounted for nearly 18% of the variance in the force factor.

TABLE 1. OLS C0EFFICIENTS FOR REGRESSION OF FORCE FACTOR SCORES ON SELECTED INDEPENDENT VARIABLES		
Independent Variables	**Coefficient**	**Standard Error B**
Suspect Characteristics:		
Gender	-.075 *	
Mental State	-.236 ***	.077
Physical Fitness	-.082 *	.024
Effort Used	.160 ***	.244
		.062
Officer Characteristics:		
Years of Sérvice	-.051	
Time to Get to Problem	-.058	
Psychological Stress - Before	-.122 **	.003
		.017
Type of Incident:		.032
Violence-Related	-.088 *	
Significance of F	.0000	
Adjusted R Square	.180	
Number of Cases	618	.059

*p < .05   **p < .01   ***p < .001   (two-tailed tests)

We will now explain the relationship between each of these variables and the force factor in more detail. The suspect's mental status at the time of the encounter was strongly related to the force factor. In Table 2, we find that calm and reasonable suspects have the highest ratio of force to resistance (1.10). The ratio declines as the volatility or instability of the suspect's behavior increases (the coefficients go as low as .22 for violent suspects).

TABLE 2. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECT'S MENTAL STATE			
	Mean	**Standard Deviation**	**Cases**
Calm/Reasonable	1.101	.661	278
Emotionally Upset	.700	.785	90
Mentally Unstable	.620	.725	50
Under the Influence	.475	.867	101
Violent	.222	.667	9
Group Totals	.852	.780	528

Sig. = .000

The next variable is the effort used by the suspect during the incident. Suspects using minimal effort had the most force used against them relative to the level of resistance when compared to the other levels of effort (1.12). Generally, as the level of the effort used by the suspect increased, the force factor ratio also increased (see Table 3). When the suspect used maximum effort during the incident, the force factor mean was only .333.

TABLE 3. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE PERCEIVED EFFORT USED BY THE SUSPECT			
	Mean	**Standard Deviation**	**Cases**
Minimum	1.120	.684	167
Between Min./Med.	.489	.719	47
Medium	.550	.605	20
Between Med./Max.	.500	.618	18
Maximum	.333	.832	27
Group Totals	.857	.764	279

Sig. = .000

The next variable is how psychologically stressful the situation was for the officer leading up to the encounter. The less stressful the situation was for the officer leading up to the

encounter, the higher the level of force was used relative to the level of resistance (see Table 4). The higher the officer's stress level prior to the incident, the lower the ratio between force and resistance. When the officer's stress level was minimal, the force factor was nearly 1. When the officer reported extremely high levels of stress leading up to the incident, the force factor dropped to -.6.

TABLE 4. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE LEVEL OF PSYCHOLOGICAL STRESS THE OFFICER EXPERIENCED LEADING UP TO THE INCIDENT			
	Mean	**Standard Deviation**	**Cases**
Minimal	.997	.696	354
Somewhat Stressful	.610	.826	105
Moderately Stressful	.558	.752	52
Highly Stressful	.571	.926	21
Extremely Stressful	-.600	1.817	5
Group Totals	.847	.786	537

Sig. = .000

The fourth strongest variable was the type of incident. Violence-related incidents had the lowest levels of force relative to the level of resistance (see Table 5). These included family violence, street or social violence, and other violence. The non-violent incidents had higher levels of force relative to the level of resistance. These included motor vehicle accidents, warrant arrests, and other non-violent incidents in which an officer may not be expecting a physical encounter.

TABLE 5. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE TYPE OF INCIDENT			
	Mean	**Standard Deviation**	**Cases**
Motor Vehicle Acc.	.767	.751	43
Family Violence	.607	.802	61
Street Violence	.700	.863	110
Other Violence	.500	.843	58
Other Non-Violence	1.098	.695	143
Warrant Arrests	.871	.619	31
Group Totals	.807	.801	446

Sig. = .000

The fifth factor was the suspect's physical fitness, as reported by the officer. Suspects with excellent fitness received a lower ratio of force to resistance than any other group (.000) (see Table 6). Similarly, suspects with above average fitness received lower levels of force relative to their resistance than suspects with average to poor physical fitness (.705).

TABLE 6. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE PERCEIVED PHYSICAL ABILITIES OF THE SUSPECT			
	Mean	**Standard Deviation**	**Cases**
Poor Fitness	.833	.624	42
Below Average	.870	.787	108
Average Fitness	.913	.762	228
Above Average	.705	.824	78
Excellent Fitness	.000	1.309	8
Group Totals	.853	.784	524

Sig. = .007

Female suspects have less force used against them relative to their level of resistance than males (see Table 7).

TABLE 7. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR MALE AND FEMALE SUSPECTS			
	Mean	Standard Deviation	Cases
Males	.873	.782	441
Females	.716	.772	88
Group Totals	.847	.782	529

Sig. = .085

The seventh variable is the time the officer took to get to the problem. Generally, the longer it takes the officer to get to the problem, the less force is used relative to the level of suspect resistance (see Table 8).

TABLE 8. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE TIME TAKEN BY THE OFFICER TO GET TO THE PROBLEM			
	Mean	Standard Deviation	Cases
30 Seconds or Less	.964	.744	221
About One Minute	.894	.667	47
One to Two Minutes	.731	.770	52
Two to Three Min.	.608	.802	51
Four or More Min.	.788	.840	146
Group Totals	.849	.780	517

Sig. = .018

The last variable in the model is the length of the officer's service on the police department. This variable is significantly correlated to the force factor with a probability of .01 and a negative correlation of -.11. The longer the officer is on the force, the lower the ratio of force is for a given level of resistance.

There were three variables that had statistically significant relationships with the force factor that did not add to the overall explained variance of the regression analysis, and therefore were left out of that analysis. However, it is instructive to examine the relationships between them and the force factor. They are the time the officer used to control the problem, the level of effort the officer used to gain control, and whether or not the officer received an injury during the incident. In Table 9, we see that the shortest time period taken (30 seconds or less) to control or resolve the problem by the officer results in the highest level of force per level of resistance. The other time periods are not significantly different with respect to the force factor.

TABLE 9. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE TIME TAKEN BY THE OFFICER TO CONTROL/RESOLVE THE PROBLEM			
	Mean	**Standard Deviation**	**Cases**
30 Seconds or Less	1.041	.700	170
About One Minute	.746	.804	67
One to Two Minutes	.622	.861	45
Two to Three Min.	.783	.758	46
Four or More Min.	.793	.826	179
Group Totals	.854	.789	507

Although the relationship was significant only at the .08 level (probably due to the small number of injuries), encounters resulting in officer injury used less force relative to the amount of suspect resistance than encounters without officer injuries (see Table 10).

TABLE 10. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR OFFICER INJURY			
	Mean	**Standard Deviation**	**Cases**
Yes	.375	.744	8
No	.861	.781	490
Group Totals	.853	.783	498

Sig. = .081

When the police used minimal effort to gain control, the ratio of force to resistance was greatest compared to the other levels of effort as reported in Table 11. In other words, more force was used relative to the level of resistance when minimum effort was used.

TABLE 11. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR THE LEVEL OF EFFORT USED BY THE OFFICER TO GAIN CONTROL			
	Mean	**Standard Deviation**	**Cases**
Minimum	1.032	.680	219
Between Min./Med.	.672	.818	64
Medium	.333	.817	24
Between Med./Max.	.500	.519	14
Maximum	.273	.767	22
Group Totals	.846	.762	343

Sig. = .000

Metro-Dade Use-of-Force Data

In this data set, we recoded the level of citizen resistance from the Control of Persons reports into four ordinal categories: 1) no resistance, 2) passive resistance, 3) active resistance, and 4) assaulted officer. No resistance indicates that the suspect was cooperative and followed all of the officer's verbal instructions. Passive resistance includes evading the police, hiding or fleeing to escape. Active resistance involves impeding the officer's movement, or physically resisting the officer's order. The corresponding categories for levels of police force are 1) no force, 2) minimal force, 3) forcibly subdued suspect with hands, and 4) forcibly subdued suspect using methods other than hands. The types of force in this last category include pepper spray, use of a PR-24, or firearm. No force indicates the suspect complied with verbal directions. Minimal force means the officer had to use strong directive language and/or minimal physical force to encourage the suspect to cooperate and follow directions. The force factor was calculated using the same methods explained above (see Figure 2). The distribution of scores on the force factor for the Metro-Dade data is close to a normal curve, but slightly skewed to the negative side, indicating the use of less force than resistance.

[Figure 2 about here]

There are a number of variables measured in our study that are significantly related to the force factor: the suspect's gender, suspect's ethnicity, whether or not the suspect was intoxicated, the initial behavior and whether the suspect was injured during the incident. The officer's gender, the age, date of hire, whether or not the officer was injured, and the ethnic match

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between the officer and suspect are additional variables that are related to the force factor. First we will analyze these variables together in a regression analysis to assess their relative influence on the force factor. Next, we will examine each factor separately in more detail.

TABLE 12. OLS COEFFICIENTS FOR REGRESSION OF FORCE FACTOR SCORES ON SELECTED INDEPENDENT VARIABLES		
Independent Variables	**Coefficient**	**Standard Error B**
Suspect Characteristics:		
Male	.049	.093
Hispanic	-.160 ***	.077
Initial Behavior	-.080 *	.259
Officer Characteristics:		
Female	-.073 *	.092
Black	.054	.087
Date of Hire	-.131 ***	.004
Officer/Suspect Ethnic Matches:		
White/Hispanic	.066	.095
Black/White	-.080 *	.259
Significance of F	.000	
Adjusted R Square	.055	
Number of Cases	881	

*p < .05   **p < .01   ***p < .001   (two-tailed tests)

In Table 12, the results are summarized for a multivariate analysis of all the variables that are significantly related to the force factor. In some cases, these variables might be related to the force factor in a slightly different manner than outlined in the bivariate analyses because in this model relationships are affected by the other variables as they are all analyzed together.

We can see from the strength of the coefficients that the suspect being Latin was the

strongest factor in the model (-.160). When the suspect is Latin, there is less force used relative to the level of resistance. The next strongest coefficient is for the date of hire of the officer (-.131). The earlier the date of hire, or the longer the tenure of the officer, the more force that is used relative to the level of resistance. The third strongest variable is the initial behavior of the suspect (-.080). As the suspect's initial behavior becomes more resistant, the force used by the officer is reduced relative to the level of resistance. The fourth strongest variable in the model is the black officer and the white suspect ethnic match (-.080). For this ethnic match, there is less proportionate force for the level of resistance. Black officers use less proportionate force when the suspect is white than for any other ethnic match. The fifth variable is when the officer is female (-.073). Female officers use less proportionate force than male officers. The sixth strongest variable is the white officer and Hispanic suspect ethnic match (.066). White officers use more force proportionate to the level of resistance on Latin suspects than any other ethnic matches. The seventh strongest variable is when the officer is black (.054). When all other variables are equal, Black officers use more proportionate force than white or Hispanic officers. The last variable in the model is when the suspect is a male (.049). When the suspect is male, there is more force used relative to the level of resistance than when the suspect is female.

TABLE 13. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECT'S GENDER			
	Mean	**Standard Deviation**	**Cases**
Female	-.344	.827	93
Male	-.132	.863	744
Group Totals	-.155	.859	837

Sig. = .025

Female suspects receive less force relative to the level of resistance than male suspects.

This is probably because females are perceived as less threatening than males by officers.

TABLE 14. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECT'S ETHNICITY			
	Mean	**Standard Deviation**	**Cases**
White	-.153	.833	150
Black	-.063	.835	383
Hispanic	-.280	.893	293
Group Totals	-.156	.856	826

Sig. = .005

Black suspects receive the most force relative to the level of resistance, but it is

commensurate to the level of resistance. Hispanic suspects receive the least force relative to the

level of resistance, and white suspects are in between blacks and Hispanics (see Table 14).

TABLE 15. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECTS UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.			
	Mean	**Standard Deviation**	**Cases**
No	-.105	.889	487
Yes	-.226	.817	350
Group Totals	-.155	.860	837

Sig. = .045

The relationship between the force factor and the suspect being under the influence of

alcohol or drugs during the encounter with the police is statistically significant, as shown in

Table 15. Impaired suspects have less force used on them relative to their level of resistance than suspects who are not impaired. It is possible that officers give some leeway for impaired suspects, choosing lower levels of force to arrest them.

TABLE 16. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECTS' INITIAL BEHAVIOR.			
	Mean	**Standard Deviation**	**Cases**
Calm	.016	.971	193
Visibly Upset	-.157	.808	147
Erratic	-.139	.823	202
Highly Agitated	-.278	.823	270
Baker Act	-.350	.813	20
Group Totals	-.156	.857	832

Sig. = .007

As reported in Table 16, when the suspect is calm, the force used by the officer is equal to the level of resistance (i.e. no force). However, as the behavior of the suspect increases in energy, the gap between the officer's use of force and the suspect's level of resistance widens.

TABLE 17. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR SUSPECTS INJURED.			
	Mean	**Standard Deviation**	**Cases**
No	-.270	.840	222
Yes	-.114	.865	616
Group Totals	-.155	.858	838

Sig. = .020

In incidents in which the suspect is injured, more force was used relative to the level of resistance than in incidents in which the suspect is not injured (see Table 17). Turning this

around, as force increased relative to resistance, so did suspect injury, but very minimally. Apparently, using more force relative to resistance (within reason), increases suspect injuries only minimally.

TABLE 18. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR OFFICERS' GENDER.			
	Mean	**Standard Deviation**	**Cases**
Female	-.374	.725	91
Male	-.123	.873	732
Group Totals	-.150	.858	823

Sig. = .009

We can see from the data in Table 18 that female officers use significantly less force for a given level of resistance than male officers. In addition, **officer's age** is significantly (p=.003) correlated to the force factor (.094), meaning that the older the officer, the more force they use for a given level of resistance. However, the correlation is not strong. Similar to age, the **date of hire** is significantly (p=.000) correlated to the force factor (-.140), and is a stronger correlation than the one for age. The longer the officer has been on the force, the greater the level of force is used for a given level of resistance.

TABLE 19. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR OFFICERS INJURED.			
	Mean	**Standard Deviation**	**Cases**
No	-.044	.914	541
Yes	-.357	.712	297
Group Totals	-.155	.848	838

Sig. = .000

As reported in Table 19, in incidents in which the officer is injured, less force is used relative to the level of resistance. In other words, officer injury is more likely to occur when less force is used relative to the suspect's resistance. It may be that an officer's reluctance to use commensurate force may contribute to more officer injuries. We reported earlier that increasing the ratio of police force to the level of resistance (within reason) only minimally increased the likelihood of suspect injury. It may be that if police use more force than they use now relative to the suspect's resistance (within reason), they could minimize officer injuries without significantly increasing suspect injuries. Further analysis with more detailed data would be needed to make this determination.

Officer/Suspect	Mean	Standard Deviation	Cases
White/White	-.083	.779	84
White/Black	-.091	.838	198
White/Hispanic	-.200	.915	155
Black/White	-.546	.820	11
Black/Black	.000	.852	81
Black/Hispanic	-.177	.636	17
Hispanic/White	-.133	.920	45
Hispanic/Black	-.033	.809	91
Hispanic/Hispanic	-.378	.905	111
Group Totals	-.146	.856	793

TABLE 20. FORCE FACTOR MEANS AND STANDARD DEVIATIONS FOR ETHNIC MATCHES BETWEEN OFFICER AND SUSPECT.

Sig. = .038

There was a strong relationship between some ethnic matches and the force factor, as reported in Table 20. Black officers use much less commensurate force for the level of resistance

from white suspects, than for all the other ethnic matches. Hispanic officers use much less force relative to the resistance offered by Hispanic suspects. The highest ratio of force for level of resistance is when black officers arrest black suspects. It appears that black officers are the hardest on their own ethnic group, and Hispanic officers are easiest on their own ethnic group.

Conclusions

Our goal in developing the force factor was to create a measure of force that is gauged against the suspect's level of resistance. The force factor is a practical concept. We have illustrated the use of the force factor with data from different police departments, each with data drawing upon a slightly different sampling of police-citizen encounters. The distribution of force factor scores for each department represents a characterization of the use of force for the department. Both approximated a normal curve. On the one hand, the Metro-Dade distribution was skewed slightly to the negative side, indicating that on the average a level of force was used slightly lower than the level of resistance. On the other hand, the Oregon distribution was skewed slightly to the positive side, indicating that, on the average, the level of police force was slightly higher than the level of resistance. It is important to note that Metro-Dade trains officers to choose a level of force slightly under the level of resistance, while Eugene and Springfield train officers to choose a level of force slightly higher than the level of resistance. Arguments can be made for each of these strategies, but what is important here is that the force factor seems to distinguish between these two relatively minor variations in training and in the use of force.

However, even this very general level of comparison between departments needs to be interpreted with caution. In this case, the two data sets draw upon a different sample of police-citizen encounters, and the measures of resistance and force that were used to calculate the force

factor were slightly different in the two data sets. It is instructive, though, to recognize

differences between departments and to assess the reasons for those differences. Differences

may be the result of the selection of incidents included in the data, wording on questions

measuring force and resistance, policies and procedures for the use of force, or other factors. It is

less important for us to make definitive causal determinations than to focus attention on

important issues such as use of force procedures, reporting, or training. The more comparable

the reporting procedures and the measurement of force and resistance, the more appropriate the

comparison.

Another important application of the force factor can be the analysis of police use of force

within police departments. Comparisons can be made between units to initiate analysis of use of

force, and the reasons for the differences. Other comparisons can be made for various officer

characteristics such as tenure with the department, training and position, to gain insight into

variations of use of force found within the department. Findings can help guide training and

supervision.

Beyond administrative uses, the force factor could advance general research on the use of

force. As noted in the interpretation of the limited data we used to test the viability of the model,

there are a range of factors associated with police use of force: suspect characteristics, officer

characteristics, and conditions surrounding the incident. Further study of these factors and others

identified as associated with the force factor will provide valuable insights into the nature of use

of force relative to the suspect's level of resistance. We used only the variables in the police

departments' data, whereas future research should include a better selection of theoretically

relevant variables.

Further Development of the Force Factor

In spite of the many potential uses of the force factor, as with any quantitative measure, there are limitations and a need for further refinement and development. For example, the measure may be susceptible to a ceiling effect. When there is no resistance, or resistance is minimal, there is greater tendency for a positive factor score because we are subtracting either a small resistance score or zero from the force score. This may explain why the force factor distribution is positive for the Oregon data, which has a preponderance of incidents with little or no resistance. The converse situation exists in the Miami data, which has more examples of extreme resistance. In these cases, there is a tendency to have a negative force factor score because the resistance scores are very high. In either case, large initial values of resistance may lead to more negative scores than do smaller values, just as small initial values of resistance lead to more positive scores on the force factor than do larger values.

As we work to refine the force factor approach, we must find the best behavioral anchors for the measures of force and resistance, and then develop standard measures that can be accepted and used by a wide variety of police departments. Such standardization would allow more valid interdepartmental comparisons.

Figure 1

Oregon Force Factor

(Bar chart showing values by category:)

Category	Value
-3	1
-2	2
-1	19
0	131
1	290
2	92
3	3

Figure 2

MDPD Force Factor
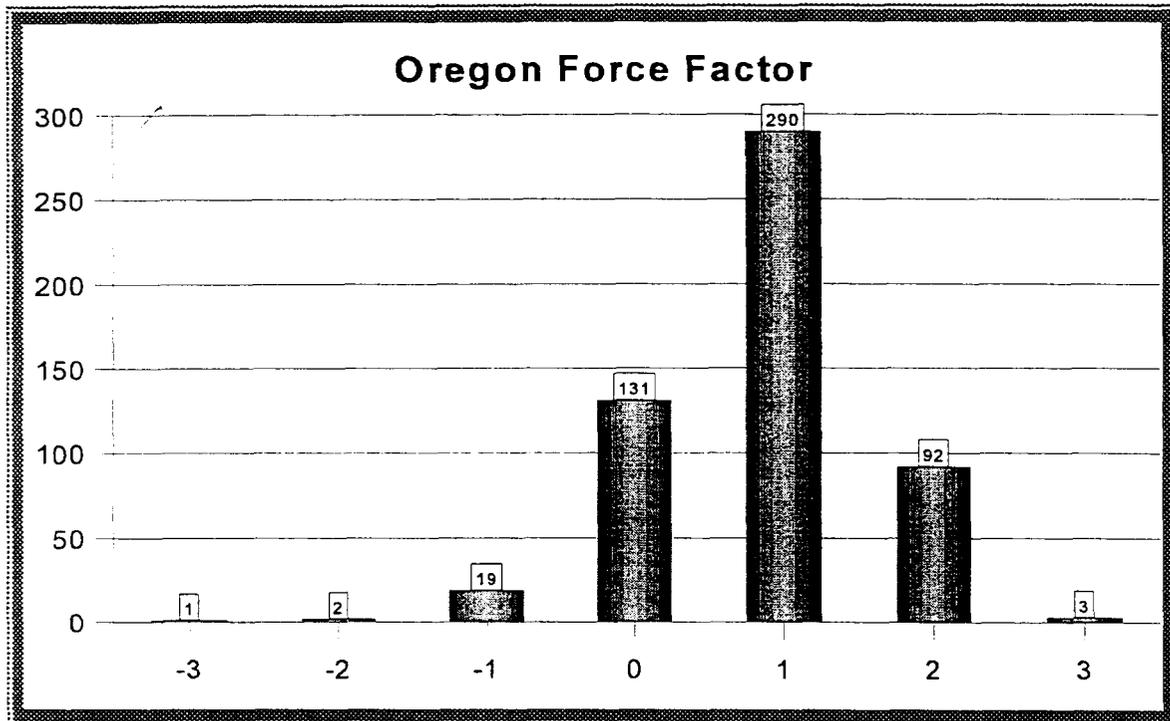
Force Factor	Count
-3	3
-2	40
-1	224
0	409
1	143
2	17
3	2
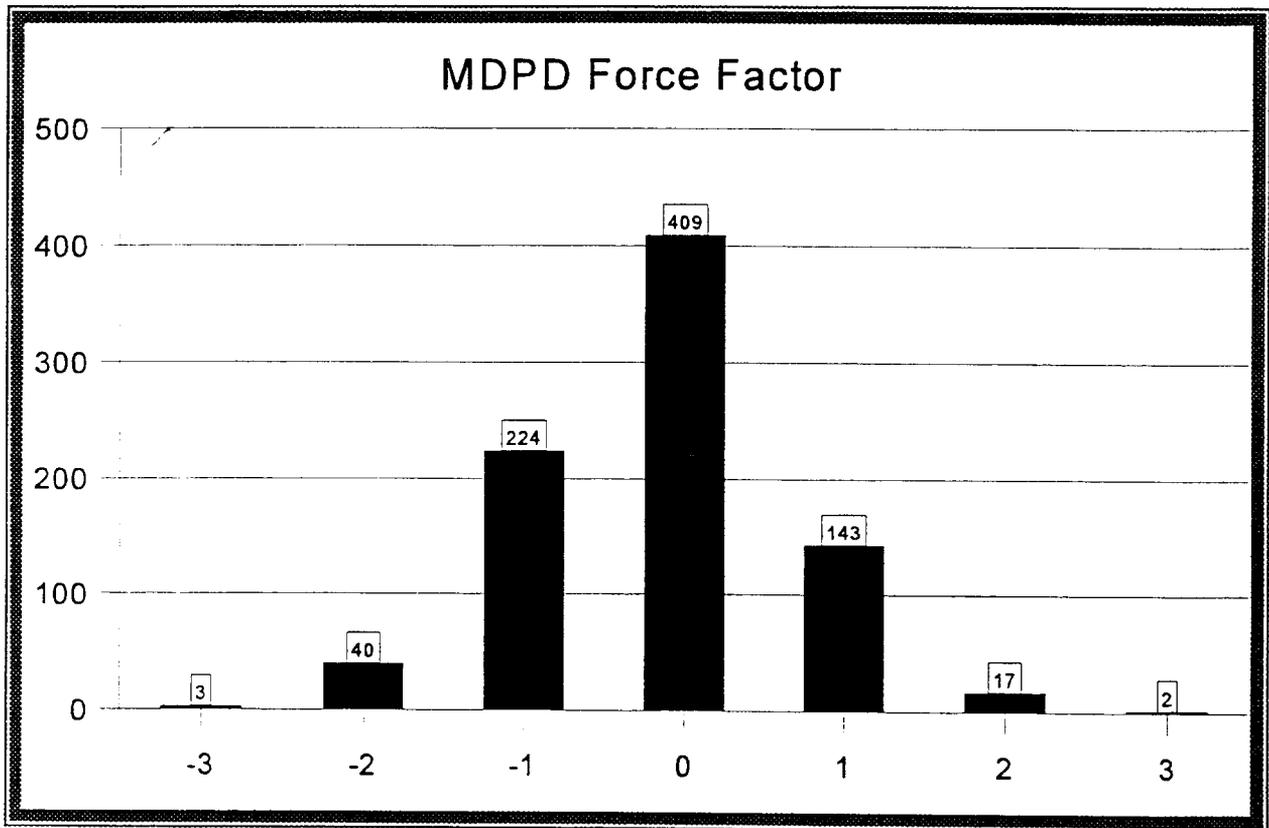
Chapter V

Implications for Policy and Training

Police use of force policies set the tone for how legitimate force will be used against citizens in a particular jurisdiction. In the area of deadly force, there is strong evidence to suggest that departmental policies can have a significant impact on how force is actually employed in street-level encounters (Binder, Scarf, & Gavin, 1982; Fyfe, 1979; Geller & Scott, 1992; Sherman, 1983). Whether departmental policies can have as great an impact in the area of non-lethal force is an empirical question that has yet to be answered. However, results from research on policies on the use of deadly force and pursuit driving, indicate that policies, training and accountability systems make a significant difference in the number of pursuits in which officers and agencies are involved (Alpert, 1997 and Alpert and Fridell, 1992). Assuming that the use of force incidents follow the same trend, a relationship should exist between the use of force by police and the policies that govern such behavior. The policies that govern the use of force should focus on four main objectives: to (1) maximize the safety of officers, (2) minimize injuries to citizens, (3) protect the rights of those against whom force is used, and (4) provide officers with the tools needed to make arrests effectively and restore order.

Injuries to Officers and Suspects

The Oregon and Metro-Dade data paint somewhat different pictures of the injuries suffered by officers during use of force incidents. Of the 844 incidents analyzed from Metro-Dade, 308 (38 %) resulted in a reported injury to the officers involved. The vast

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majority of the reported injuries (79 %) were minor and consisted of bruises, strains, or soreness. Nevertheless, 45 officers were lacerated, 6 were bitten, five suffered a broken bone or fracture, one was punctured, one received internal injuries, and three were shot. Table 1 below describes the chances of officer injury (not including simple soreness) according to a number of the more common ways in which the Metro-Dade officers reported using force.

Table 1.

Chance of Officer Injury by Type of Police Force Used in Metro-Dade

Type of Force	Chance of Injury
Hands/Arms	43%
Fist	48%
foot/leg	22%
PR-24	27%
Handgun	18%

These figures suggest that Metro-Dade officers were significantly at risk for injury any time they use force, but particularly when they use hands and arms to control a suspect or when they strike a suspect with their fists. Because most use of force incidents involved the use of hands, arms, or fists (80 %), Metro-Dade officers were most at risk for injury when using precisely the type of force that they report using most frequently.

Overall, the Oregon data show far fewer injuries to officers during critical incidents involving the use of force. Of the 318 reported incidents where force was used (more than mere handcuffing), only 9 (2.9 %) resulted in an injury to an officer.

Although suspect injury data were not available from the Oregon sites, Table 2 below

summarizes the chances of suspect injury when various types of police force were used by the Metro-Dade police.

Table 2.

Chance of Suspect Injury by Type of Police Force Used Metro-Dade

Type of Force	Chance of Injury
Hands/Arms	65%
Fist	81%
Foot/Leg	67%
Pr-24	64%
Handgun	45%

The chances of suspect injury were significant no matter what type of force was used by the police. Interestingly, a suspect was more likely to suffer injury if struck with a fist than if struck with a PR-24 police baton. This may be due to the training that police receive in how to use the baton in a manner that minimizes the risk of injury. In any event, the chances of a suspect being injured during a use of force incident were greatest when the officer used his hands, arms, feet, or legs during the encounter.

The force factor analysis of the Metro-Dade data yielded two important finding with respect to injuries. First, the data indicated that officers were more likely to be injured when using less force relative to the resistance of the suspect (See Force Factor Table 19). In other words, if an officer did not escalate the amount of force used in response to an increasingly violent suspect, the officer was more likely to be injured. Second, the data showed that injuries

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to suspects increased only minimally as the amount of force used by the police increases relative to the amount of resistance (See Force Factor Table 17). Although suspects were more likely to receive injuries when police used more force relative to resistance, this increased likelihood of injury was small. Furthermore, even in cases where a suspect was injured, the force factor mean was still negative (-.114), indicating that overall officers used force that was less than the resistance offered by the suspect. These findings can be an important source of information for formulating policies and training that help reduce the possibility of injuries to both officers and suspects.

The Use of Force Continuum

It is clear that officers and suspects are most at risk for injury during relatively low-level encounters where officers use hands, arms, and legs to control suspects. Clearly, use of force policies and training should provide officers greater guidance on how to respond to various types of suspect resistance while at the same time protecting the rights of citizens.

In recent years, use of force continua have become prevalent in police policies and in police training. These continua present officers with a series of escalating steps in the use of force that they are required to follow whenever possible (Connor, 1991). Illustration 1 is an example of a common use of force continuum taken from police policies. Policies that incorporate continua such as this one typically state that officers should escalate their use of force along the continuum as the suspect's resistance increases and should de-escalate their use of force as the threat posed by the suspect diminishes. These policies also permit officers to skip steps within the continuum if necessary, such as when a cooperative suspect suddenly produces a gun and threatens the officer with deadly force.

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Illustration 1.

Police Use of Force Continuum

1. No Force
2. Officers' Presence in Uniform
3. Verbal Communication
4. Light Subject Control, Escort Techniques, Pressure Point Control, Handcuffs
5. Chemical Agents
6. Physical Tactics and Use of Weapons other than chemicals and firearms
7. Firearms/deadly force

Another variation on the use of force continuum shown above incorporates both

suspect resistance and officer response levels.

Illustration 2.

USE OF FORCE CONTINUUM RESISTANCE AND RESPONSE LEVELS

Suspect Resistance Level	Officer Level of Control (force)
1. Suspect Presence	1. Interview Stance
2. Verbal Resistance	2. Verbal Commands
3. Passive Resistance	3. Transport Techniques (Handcuffs, subject control, pressure points)
4. Defensive Resistance	4. Chemical Agents
5. Active Physical Resistance	5. Physical Tactics/ Weapons
6. Firearms/Deadly Force	6. Firearms/Deadly Force

A policy that includes a use of force continuum similar to this one helps provide officers with the

guidance necessary for using non-lethal force. Officers are presented with clear examples of

suspect resistance matched with the appropriate use of force responses. This type of policy helps

ensure that officers are using the level of force that is appropriate under the circumstances.

Chemical agents play a prominent role in most modern use of force policies. In recent

years, the adoption of OC (oleoresin capsicum or pepper) spray has become commonplace

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among local and state police agencies (Law Enforcement Management and Administrative Statistics, 1995). Although pepper spray was used by both the Springfield and Eugene police departments, Metro-Dade did not issue any type of chemical agent to its patrol officers, although it does issue pepper spray to its specialized tactical units. None of the reported uses of pepper spray by either the Oregon departments or the Metro-Dade police resulted in an injury to an officer or a suspect.

Several years ago the International Association of Chiefs of Police (IACP) commissioned a study of 30 deaths that occurred following the use of pepper spray on suspects between 1990-1993 (Grainfield, Aeonian, & Petty, 1994). The authors concluded that none of the deaths were attributable to the spray but had resulted from either positional asphyxia or drug-related factors. An IACP evaluation of the introduction of pepper spray into the Baltimore Police Department revealed that the spray was approximately 90% effective in 194 uses while citizen complaints of excessive force and assaults against officers dropped (Pepper Spray Evaluation Project, 1995, Edwards et al., 1997).

The accumulated data suggests that pepper spray is a safe and effective alternative to other types of force, particularly in marginal use of force situations (Hunter, 1994). Its proper use may prevent the type of hand to hand struggles that most frequently result in injuries to officers and suspects. Moreover, it provides an excellent alternative to the police baton in instances where a suspect is actively but not aggressively resisting arrest. Thus, if the suspect is actively struggling with an officer in an attempt to flee the officer's grasp, the department's use of force policy should permit the use of pepper spray to subdue the suspect. This course of action is likely to be more effective and less risky than the traditional response of wrestling with the

suspect or using a police baton to beat him into submission.

Given the general effectiveness and relative safety of pepper spray, as compared with other types of force, policy makers should provide pepper spray as a standard issue to patrol officers, train them in its use, and allow officers to utilize it against any actively resistant suspect or suspect who threatens an officer with physical harm. As in the use of force continuum shown above, the police baton should be used to strike only those suspects who aggressively resist arrest or act in an assaultive manner toward an officer. All of the uses of the PR-24 baton by Metro-Dade officers involved strikes. None of them involved the use of the baton to control a suspect through, for example, the use of an arm-bar technique. In 10 of 11 instances where Metro-Dade officers used their batons, the suspect was either pushing or pulling on the officer, hitti.g the officer, or attempting to slash the officer with an edged weapon. In one instance the suspect threatened the officer in some unspecified manner. These uses of the baton as a striking weapon are consistent with the use of force continuum depicted above. Although the baton may be used to *control* a suspect who is merely resisting arrest, it should not be used to *strike* a suspect unless he assaults, attempts to assault, or otherwise menaces an officer.

Legal Considerations

Any use of force policy adopted by a police agency must reflect the prevailing legal standards governing the use of force by police. In Graham v. Conner (1989) the United States Supreme Court held that the Fourth Amendment reasonableness standard is to be used when judging whether police used force appropriately. Thus, according to the Supreme Court, the question that judges and juries must answer is whether the officer's actions, as judged from the perspective of a reasonable officer under the circumstances (and not with "20/20 hindsight"),

where appropriate. In deciding whether a particular officer's actions were reasonable, the Court suggested several factors that may be helpful, including (1) the severity of the crime, (2) whether the suspect poses an immediate threat to the safety of the officer or others, (3) whether the suspect is actively resisting arrest, and (4) whether the suspect is attempting to flee.

A policy that incorporates a use of force continuum that matches suspect resistance levels with officer response levels should help encourage the lawful and ethical use of force by police. It provides officers with clear guidance about what levels of force are appropriate under what circumstances and it directs that the use of force should be proportional to a suspect's resistance and no greater.

However, in today's use-of-force climate, police agencies must do even more to ensure that their officers are using force appropriately. There is an argument that police officers must bear some responsibility for creating the need to use deadly force by failing to take appropriate measures to prevent that need from arising. The argument is based on the idea that officers must employ the principles of tactical knowledge and concealment in order to minimize the need to use deadly force. It is not enough to evaluate the appropriateness of deadly force by examining the circumstances that existed when it was used. Rather, officers should be held accountable for making errors in judgment that reasonably would have prevented the need to use deadly force at all (Fyfe, 1997 and Note, 1988).

Those who have worked the streets as police officers are familiar with the type of officer whose words, actions and demeanor may, in an already tense situation, incite a citizen to violence. Just as with deadly force, it is not enough to ask whether a reasonable officer would have used force in that situation without also asking whether a reasonable officer would have

done something differently to *prevent* the need to use force from arising at all. Well-trained

officers today are expected to mediate disputes between citizens and to prevent violence form

occurring. They also should be required, through appropriate policy language, to use reasonable

skill and judgment in preventing suspects from using force against them.

We are not suggesting that officers be held accountable for failing to predict the behavior

of unstable persons. We are suggesting that police use-of-force policies should put volatile or

immature officers on notice that their actions leading up to a use-of-force incident will be

examined for reasonableness. This is the next logical direction for civil liability law to take.

Indeed, a number of courts have already held that pre-seizure conduct is relevant to determining

whether a police officer acted reasonably in using force (Romeo v. Board of County

Commissioners, 1995; Sever v. City of Lawrence, KS, 1995; Diaz v. Salazar, 1996). Police

agencies can head off these potential lawsuits by requiring officers to act reasonably in

preventing violence from occurring.

Training Issues

In addition to the policy implications discussed above, the findings from this research

point to several training issues that need to be addressed. Those issues are as follows:

- Better training is needed in the use of weaponless (empty hand) control tactics. Because the vast majority of use-of- force incidents are low-level in nature, police officers will continue to rely on their hands, arms, and feet to control most resistive suspects. Currently, these common types of encounters result in a disproportionate number of injuries to officers and suspects. If officers were better trained and prepared to deal with these types of encounters, it seems likely that the number and severity of injuries arising from them would decrease.

- A use of force continuum that matches suspect resistance with officer response levels, combined with a robust training program that reinforces what level of force is appropriate in a given encounter, should help to reduce officer and suspect injuries.

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● Significantly more training is needed in the proper use of chemical agents. The Oregon data indicate that pepper spray was used in only 15 of 547 use of force encounters. Similarly, pepper spray was used only 4 times out of 803 encounters by the Metro-Dade police. The Metro-Dade figures are undoubtedly low because the police department does not issue chemical agents to its patrol officers. The Oregon officers appear to be using pepper spray infrequently. Training on the use and potential abuse of chemical agents should help reduce the number of officer and suspect injuries.

● If the PR-24 is to be retained, officers need regular retraining and practice in how to use it effectively. In Dade County, every reported instance where the PR-24 side-handled baton was used involved a strike. To those who advocate its use, the advantage of the PR-24 is its ability to be used as a defensive and control-type weapon. When employed properly, the PR-24 can be used to trap and hold the hands and arms of suspects to bring them under control. Apparently, the PR-24 is not being used to its full capacity. This is not surprising since the use of a PR-24 is a diminishing skill that takes a great deal of practice to retain one's ability to use it to full advantage. If officers cannot remain proficient in its proper use, then police agencies should re-evaluate whether to continue to issue the PR-24 or whether another impact weapon may be more appropriate.

● Officers need more and better training in how to avoid or defuse violent encounters before they arise. If future policies will require officers to take reasonable measures to avoid the use of force, then officers must be properly trained in conflict avoidance and crisis management techniques. How successful an officer is at avoiding violence is a function, at least in part, on how well-trained the officer is in defusing emotionally-charged situations.

Directions for Future Research

In examining the use-of-force landscape and in discussing the findings of this research, at least four important areas remain unexplored. First, we know very little about the effectiveness of various types of non-lethal force used by police. Recently, some research has been done on the effectiveness of pepper spray (Pepper Spray Evaluation Project, 1995). This research, however, is limited to evaluating only one type of police response, leaving most other areas of police force unexplored. Further, there remains a debate as to the placement of pepper spray on the use-of-force continuum. On the one hand, there are arguments that it belongs directly under deadly

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force. On the other hand, there are convincing arguments that it belongs under tactics and weapons, or before physical tactics or non-lethal weapons are used (see McEwen and Leahy, 1994). We know of no scholarly research that has examined how effective other types of commonly-used police weapons are in controlling resistive persons. What is needed is a comprehensive evaluation of the effectiveness of all types of police force commonly used in street-level encounters today. It is discouraging that no research was located that examined the effectiveness of the hand-to-hand control tactics used by the police, even though these tactics account for the vast majority of force used against citizens.

The knowledge of the effectiveness of various force tactics and weapons is crucial to police policy development, training, and the production of new non-lethal weaponry. From a policy perspective, it is problematic for police agencies across the country to adopt a use of force continuum if the force levels that appear in those continua are ineffective or are improperly arranged. Likewise from a training perspective, it makes little sense to train officers in hand to hand tactics or the use of non-lethal weapons if they will ultimately be ineffective on the street or worse, cause unnecessary injuries.

Second, research is needed that identifies in detail how use of force encounters unfold. Although anecdotal evidence is abundant, there is little empirical research on what factors immediately trigger the use of force by and against the police, how force is actually used by citizens against the police, and how officers respond. No reliable research exists, for example, that explores whether police officers actually escalate their use of force in a controlled manner like the use of force continuum requires. In short, we have no clear picture of how, why, and in what order police officers use various types of force in street-level encounters (see Greenfeld et

al., 1997).

Third, precious little reliable research exists that identifies the extent of police abuse of force. A variety of studies discussed earlier have examined the extent and nature of police use of force (Garner, Buchanan, Schade, Hepburn, 1996; Alpert and Smith, 1994; Bayley and Garofalo, 1989; Croft & Austin, 1987). However, these studies are generally not able to gauge the extent of excessive force (Adams, 1995). A few studies have used citizen complaint data (Chevigny, 1969), public opinion polls (Gallup, 1991), officer surveys (Independent Commission on the Los Angeles Police Department, 1991), or observation of police-citizen encounters (Worden, 1995) to identify how often police use unnecessary force. Despite these efforts and because of their weaknesses, little is known about the prevalence of excessive force (Adams, 1995). Only one study was located that focused on the use of excessive force (Alpert et al., 1997). Although we can say with relative conviction that police use force occurs on an infrequent basis, we cannot conclude with nearly the same certainty how many of those incidents involve excessive force.

Finally, there is a need to explore measurement issues and uses of the force factor. Revising departments' use of force/control of persons reporting forms by basing the data on behavioral anchors will improve the validity of the information collected. Creating force factor scores for individual officers, assignments, units and departments can be an important step in understanding and controlling police use of force.

Of course, measuring excessive force is highly problematic, indeed, even defining what counts as excessive force is difficult and may vary considerably depending on the situation (Alpert and Smith, 1994). As we have found, in spite of this difficulty, if we consider the importance to the nation of knowing how often its' police officers abuse their authority,

comprehensive research on excessive force must continue to receive a high priority.

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