STUDYING CIVIL SUITS AGAINST THE POLICE: A SERENDIPITOUS FINDING OF SAMPLE SELECTION BIAS

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This article examines the sources of municipal variation in the number of civil suits filed against police. Although a number of theoretical explanations are plausible, existing data and research are limited to a handful of rational/technical explanations. A secondary analysis of a national survey data set reveals a moderate but manageable problem with missing data among the predictors. However, the problem is more severe for the outcome variable, the ratio of civil suits per 1,000 field officers, which is missing for about 70% of respondents. The authors explore a number of potential remedies based on recent advances in the statistical treatment of incomplete multivariate data. Their analysis suggests that data on civil suits are not missing randomly: There are important and quantifiable differences between respondents and nonrespondents to this survey item. These findings suggest a modest case of sample selection bias, which cannot be corrected using even the most recent statistical advances. The remedy lies not in statistics but in the use of new and creative research methods that account for the sensitive nature of the topic.

Police misuse of force has always been a controversial topic in the United States. Particular attention was drawn to police misuse of force in the late 1960s with the onset of the civil rights movement. More recent cases of police misuse of force in Los Angeles and New York City have captured the public's attention and brought the topic of civil lawsuits against the police to the forefront of public concern. Civil lawsuits filed against the police are also an increasing concern to both individual police officers and the police departments for which they are employed (del Carmen & Smith, 1997;

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Kappeler, 2001; Scogin & Brodsky, 1991). Because of the increase in civil suits filed against the police, police administrators have begun to pay closer attention to improvements in police training, the implementation of more clearly defined policies on use of force, enforcing the mandatory reporting of use of force incidents by police officers, and adopting police legal advising and risk management programs to control police exposure to liability incidents (Archbold, 2002).

Despite increased public attention paid to civil suits filed against the police, there has been limited empirical research conducted on the topic. This study will discuss what is currently known about civil suits filed against the police and will provide several explanations for the lack of empirical research on this topic. In addition, secondary analysis of data from 699 municipal police departments will be used to explore the sources of variation in the number of civil suits filed against municipal police departments in the United States. In the course of trying to answer this substantive question, we uncovered severe and uncorrectable problems with missing data and sample selection bias. To deal with these problems, we reach into the statistical literature on incomplete multivariate data and sociological research on studying sensitive topics. The article concludes by exploring several methods that researchers could potentially employ to study this sensitive issue.

WHAT WE KNOW ABOUT CIVIL SUITS FILED AGAINST THE POLICE

By varying accounts, the number of civil suits filed against police officers has increased since 1960 (Franklin, 1993; Kappeler, 2001; McCoy, 1987). McCoy (1987) found that police chiefs from the 20 largest cities in the United States reported that their departments had been sued in civil cases in the past. Kappeler (2001, p. 5) also reported that published Section 1983 cases decided by the federal district courts tripled between 1980 and 2000. Because Kappeler's findings only represent the Section 1983 cases that were published, the increase in Section 1983 cases may be higher because the cases that were settled out of court or that were not published are not included in the total case count. Among various other factors, the increase in Section 1983 cases between 1980 and 2000 could be partially explained by the exposure of local police to federal civil liability resulting from the *Monell v. New York City Department of Social Services* decision in 1978.

Another indication of an increase in the number of civil suits filed against the police is the large monetary awards given to citizens that win their civil suits against the police. For example, Human Rights Watch (1998) reported that New York City paid out $70 million in settlements for police misconduct lawsuits between 1994 and 1996. Similarly, the city of Los Angeles paid $79.2 million in settlements and judgments in civil suits against Los Angeles police officers between 1991 and 1996. More recently, the mayor of Los Angeles, Richard Riordan, suggested that "the city set aside 25 years worth of tobacco settlement money—as much as $300 million—to pay for lawsuits anticipated from the city's latest police corruption scandal" ("L.A. Mayor Suggests," 2000). Additionally, MacManus (1997) contended that police civil liability incidents significantly contribute to rising costs in law enforcement agencies.

In addition to the increase in the number of civil suits filed against police officers, we also know that civil suits are more likely to be filed against the police when citizens allege more serious charges of police misuse of force. Most civil suits are filed based on allegations of false arrests/imprisonment, excessive use of force, negligence, improper training, constitutional violations, and unlawful invasion of privacy (Franklin, 1993; Kappeler, 2001). However, the likelihood of civil suits ending in favor of the plaintiff is not contingent on the seriousness of the charges against police officer(s). For instance, Kappeler (2001) reported that there were 540 published Section 1983 cases for excessive use of force against the police in federal district courts between 1978 and 1994. Out of the 540 published Section 1983 claims against the police, 304 (56%) of those claims ended in the favor of the plaintiff (Kappeler, 2001, p. 42). In comparison, there were 33 cases of libel/slander filed against the police between 1978 and 1994 in federal district courts, and 15 of those cases (46%) ended in favor of the citizen (Kappeler, 2001, p. 42). These findings suggest that police officers are being held accountable in some instances for their actions in incidents involving serious physical or emotional harm to citizens, as well as nonviolent, less serious allegations.

Several theories might explain why the number of civil suits against police officers has increased during the past 50 years. Carl J. Franklin provided four distinct explanations for the surge of civil suits filed against police officers in his book, *The Police Officer's Guide to Civil Liability* (1993). First, members of society have become more litigious, in that they are more likely to file a civil suit against the police today compared to 50

years ago. Today there is more information and public access to the legal system than before the 1960s. Second, motorized police patrol has taken the human aspect out of policing and has created a barrier between police and citizens. Third, police misuse of force problems that have always existed are finally being brought to the public's attention through media sources and political agendas. Finally, a fourth reason for the increase in civil suits against the police is the change in the legal status of police officers. The blanket immunity that was once granted to police officers has faded over time, leaving them more susceptible to becoming defendants in civil suits filed by citizens.

Others believe that innovative police departments put less innovative police departments at a higher risk for civil litigation by improving police technology or implementing more restrictive police policies. Kappeler (2001) asserted that as police departments increase their level of technology (such as computers for record keeping or new criminal apprehension techniques), they place less innovative police departments at risk to be sued for not having specific technological advancements. For instance, before the *Tennessee v. Garner* decision in 1985, most progressive police departments across the country had changed their department policies to place more restrictions on the use of force by police officers (Fyfe & Walker, 1990). Thus, less progressive police departments became more susceptible to civil suits for not having more stringent policies in place to limit the use of force during criminal apprehension. This raises the possibility that some police agencies adopted administrative reform not based on technical concerns for efficiency or effectiveness but out of an institutional concern with enhancing legitimacy and reducing risk (Crank & Langworthy, 1992; Mastrofski & Ritti, 2000).

Some of the most recent research on civil suits and the police indicates that the implementation of community oriented policing (COP) policies and programs in police departments can influence the number of civil suits filed against the police. John Worrall (1998) examined the effect of administrative determinants on civil suits filed against the police. Using data from a 1996 survey of 248 police departments and the 1993 Law Enforcement Management and Administrative Statistics (LEMAS) survey, Worrall found that "as departments became committed to community-oriented policing through the adoption of COP policies and programs, lawsuits declined, and quite markedly" (p. 307). This finding suggests that decisions made by police administrators to implement certain changes in their

organizations can have an effect on the number of civil suits filed against them. Later research by Worrall (2001) found a mix of effects, with community policing having either no effect or a positive effect on civil lawsuits. The effect of agency characteristics on lawsuits remains unknown.

The rising number of civil suits filed against the police in the last half century has had a direct effect on individual police officers and police administrators alike. The nature of police work creates an environment that places individual police officers in dangerous situations where the use of force is sometimes necessary. This unique aspect of police work opens the door for higher levels of public scrutiny about how individual police officers do their jobs. In addition, police administrators are also more concerned because police departments and police supervisors can now be included in civil suits for negligent failure to train or supervise rank-and-file police officers (del Carmen & Smith, 1997).

How fearful of civil litigation are police officers? A study conducted by Scogin and Brodsky in 1991 examined the level of *litigaphobia* (litigation + phobia) experienced by individual law enforcement officers. The results of the Scogin and Brodsky study indicate that most law enforcement officers only worry moderately about work-related lawsuits filed by citizens. Also, 69% of police officers reported that they take specific actions in their day-to-day work activities to prevent lawsuits being filed against them, such as "treating people fairly" or "going by the book" (Scogin & Brodsky, 1991, p. 43). And finally, most of the responding officers made statements indicating that they view being sued by citizens as "inevitable and unavoidable" due to the nature of their work. The authors suggested that preservice and in-service training on liability and the litigation process would prove beneficial to the individual police officer and police department, but they offered no empirical evidence to support their suggestions.

A recent study by Vaughn, Cooper, and del Carmen (2001) found limited evidence of litigaphobia among Texas chiefs of police. During a law enforcement leadership and management training conference in Texas, surveys were distributed to Texas police chiefs. The questions on the survey instrument inquired about perceptions of civil litigation, fear of litigation, and various other police liability issues. The analysis revealed that 61% of police chiefs in Texas believe that "the possibility of lawsuits only 'mildly affected' or had 'no effect at all' on their departmental functions" (p. 17). The authors concluded that further research on police legal liabilities nationwide is necessary to learn more about lawsuit prevention.

WHAT WE DO NOT KNOW ABOUT CIVIL SUITS FILED AGAINST THE POLICE

It is clear that there has been an increase in the frequency of civil suits filed against the police in the past few decades. However, it is difficult to determine the exact number of civil suits that are filed against police officers, as well as total dollar amounts paid out to citizens who win or settle civil suits against the police. Often, police departments do not keep systematic records of civil suits filed against them, and those that do are reluctant to make that information available to the public (Cheh, 1995). Another problem with counting the number of civil suits filed against the police is that few cases actually make it to trial. Many cases are settled outside of the courtroom (in most cases for monetary settlements), and some civil suits are dismissed before they ever reach trial proceedings (del Carmen, 1994). Therefore, combining court records with police department records of civil suits (when they are available) will not necessarily improve the quality of the data available on this topic. Both of these factors make empirical exploration of civil suits filed against the police extremely difficult.

It is also unclear how much the threat of civil lawsuits deters police officers from participating in unlawful activities. In 1979, student editors of the *Yale Law Journal* analyzed 149 misconduct cases filed against police officers from 1970 to 1977 and concluded that there was little or no deterrent effect from civil litigation. In most cases, juries sided with police officers, even in cases where there was sufficient evidence pointing to police misconduct or abuse. It was clear in most cases that certain factors (such as the plaintiff's involvement in illegal activity) swayed the jury to side with police officers ("Suing the Police," 1979).

In contrast, Candace McCoy (1984) suggested that civil suits filed against the police do deter widespread police abuse in police departments. She asserted that if police departments were systematically defying constitutional standards, they would be forced to operate under court orders until they began to function legally. McCoy also contended that "increased procedural review and adequate record-keeping, disciplinary actions, careful police training, and a steady exchange of information between city attorneys and police are all good indicators that police departments indeed take deterrence seriously" (p. 56). It is important to note that these findings were not based on the results of an empirical study.

There is also limited empirical research on the effect of improved police training on the number of civil suits filed against the police. Most of the

literature suggests that it is common sense that improved training results in fewer lawsuits, but often does not provide any empirical evidence to support their common sense theory. According to Schultz (1984), improvements in all phases of police training including police academy training and in-service training can prove to be beneficial to police officers when it comes to becoming the defendant in a civil suit. George Schrader (1988) stated that "documenting firearms training not only reduces liability for the city and department but is an excellent training medium" (p. 3). Neither Schultz nor Schrader used empirical evidence to support their assertions.

In contrast to Schultz (1984) and Schrader's (1988) assertions that increased or improved training will reduce civil suits filed against the police, Worrall (1998) found that neither education nor training was important in determining the incidence of civil lawsuits filed against the police. In a later study, Worrall (2001) confirmed the earlier null effect of education but found that liability training had a positive effect on lawsuits. Further research on the effect of increased and/or improved police training is clearly needed to determine the extent to which training can reduce civil suits involving the police.

To date, there are few empirical studies that examine the effect of clearly defined use of force policies and mandatory reporting of use of force on the effect of the number of civil suits filed against the police. A majority of the empirical research has focused on the use of agency policies or legislation to regulate the use of deadly force by police officers. In most studies, the implementation of a police department policy on the use of deadly force or the effect of the 1985 *Tennessee v. Garner* decision are assessed to determine the level of effect on police officers' use of deadly force (Culliver & Sigler, 1995; Fyfe, 1979; Fyfe, 1981; Sparger & Giacopassi, 1992). Because most police departments in the United States have implemented policies of mandatory reporting of police use of lethal force, data are more accessible compared to the information available on the cases of police officers' misuse of nonlethal force.

Existing research suggests that civil suits that cost police departments large sums of money often prompt police administrators to review policies and practices to correct their deficiencies to avoid future civil suits (Alpert & Dunham, 1992; McCoy, 1984). Police managers in some of the largest law enforcement agencies have begun to hire in-house risk managers and police legal advisors to help them review department training/recruitment efforts, policies, and procedures in an effort to manage and prevent police officer

exposure to liability (Archbold, 2002). Police chiefs surveyed in McCoy's 1984 study specifically identified police use of force and auto pursuits as the two areas where policies can be designed to control police officers' actions and where advanced training can decrease the chances of civil litigation. McCoy suggested that police chiefs mentioned these two items because they are most likely to result in the most expensive payouts for serious injury in civil suits. Due to the lack of empirical research, it is unclear to what extent the implementation of nonlethal use of force policies and mandatory reporting of nonlethal force affects the misuse of force by police officers and subsequent civil lawsuits.

Despite the fact that research has been conducted on civil suits filed against the police since the late 1960s, there are still several unanswered questions. One area of police liability that often results in police-involved civil suits is police use of force (Blalock, 1974; del Carmen, 1991; Kappeler, 2001). This is a difficult topic to study because police agencies sometimes only keep records of more serious use of force incidents (Pate & Fridell, 1995), and there is little consistency among the police agencies that maintain records of use of force incidents in their organizations. Both of these factors limit what is currently known about police use of force and to what extent police use of force incidents result in civil suits.

In an effort to improve the collection of use of force data, Alpert and Smith (1999) suggested an innovative approach that involves police supervisors gathering information from all of the parties involved in police use of force incidents, including any witnesses, suspects, and police officers. In addition, Alpert and Smith also suggested that future researchers incorporate a panel of police use of force experts to review use of force incidents that are used as part of research projects (similar to the job of expert witnesses in police use of force court cases). The authors asserted that "the findings of the these [*sic*] panels could be used as part of basic research efforts on police use of force, as well as by police agencies in identifying problems to be addressed through training, policy, or operational changes" (p. 75).

In 1999, the National Institute of Justice (NIJ), in conjunction with the Bureau of Justice Statistics, published a report titled *Use of Force by Police: Overview of National and Local Data* by Adams et al. that describes in detail some of the unanswered questions about police use of force. The NIJ report critiques some of the most recent empirical studies that have

attempted to answer some of these questions. As we will demonstrate shortly, one reason that there are still so many unanswered questions is the array of methodological barriers that impede research on sensitive subjects like police misuse of force.

First, the definition of excessive force is open to interpretation by researchers and police personnel who keep track of excessive force cases (Adams, 1995; McEwen, 1996). The variation in ways that individual police departments and individual researchers define or identify police use of excessive force makes measuring the use of use-of-force incidents very difficult. A second impediment to using alternative and possibly more trustworthy methodologies for studying police use of force is cost. Citizen self-report surveys, face-to-face interviews with citizens, or systematic social observation of police officers in their natural settings could all provide rich, detailed data on police misuse of force but are all very expensive (Adams, 1995). Because police use of force incidents are somewhat rare events (Worden, 1995), spending vast amounts of resources to try and acquire that information by community, state, or nationwide surveys, face-to-face interviews, or direct systematic observation of the police might not be worth the cost.

In addition, many police departments keep track of excessive force cases that lead to civil suits but are not always willing to release the information to researchers. This was evident in the 1986 International City Management Association (ICMA) Police Personnel Practices study. The ICMA study asked all municipal police departments (serving populations of 10,000 or more) for data concerning civil suits and liability. Out of the 2,614 municipal police agencies that received the survey, only 34% of the agencies responded (Fyfe, 1986). This was a significant drop from the 49% of agencies that responded to the ICMA survey just a few years earlier in 1982. The only difference between the 1986 ICMA survey and the 1982 ICMA survey was a series of questions inquiring about civil suits and monetary losses resulting from the suits. It would be reasonable to conclude that some of the decrease in participation of the 1986 ICMA survey can be attributed to the inclusion of the liability questions.

As we discuss momentarily, only a handful of respondents in Pate and Fridell's (1993) survey provided data on civil suits, although they did respond to other items with much greater frequency. Pate and Fridell attributed the low response rate on this item to a failure to keep track of the number of civil suits and an unwillingness or resistance to releasing that information.

ANSWERING UNSETTLED QUESTIONS

The lack of theoretical development and empirical research on civil suits filed against the police for misuse of force leaves several important questions unanswered. How does police training throughout the course of employment affect the number of civil suits filed against police departments? What is the effect of police department policies that require mandatory reporting of all police officer use of force situations on the civil suits filed against police departments? How do police departments contribute or control the likelihood that police officers employed by the department will misuse force against citizens by implementing specific practices and policies? This study will address all three of these unanswered questions by testing the following hypotheses. Many other compelling hypotheses could also be constructed, but these are the only ones for which we have data. Other potential explanations will be discussed shortly.

POLICE TRAINING

Hypothesis 1: Police departments that require more hours of police academy training will have fewer civil suits filed against them than police departments requiring fewer hours.

Hypothesis 2: Police departments that have a probationary period after police academy training will have fewer civil suits filed against them.

Hypothesis 3: Police departments with field training officer (FTO) programs that require more hours of supervision under an FTO supervisor will have fewer civil suits filed against them than police departments that do not have FTO programs or that require less hours of supervision.

Hypothesis 4: Police departments that offer several in-service training options will have fewer civil suits filed against them compared to police departments that do not offer as many in-service training options.

POLICE DEPARTMENT POLICIES

Hypothesis 1: Police departments that have a policy requiring that all citizen complaints filed against the police will be published will have fewer civil suits than police departments that do not publish citizen complaints.

Hypothesis 2: Police departments that require and provide chemical and electrical defensive tactical devices to their police officers will have more civil suits filed against them than police departments that do not require or provide such devices.

Hypothesis 3: Police departments that have more policies on mandatory reporting of police officer use of nonlethal force will have fewer civil cases filed against them compared to police departments that do not require (or have fewer) mandatory reporting policies on the use of nonlethal force.

Hypothesis 4: Police departments that require all lethal use force incidents to be reported will have fewer civil suits filed against them than police departments that do not have mandatory reporting policies on the use of lethal use of force.

Hypothesis 5: Police departments with more sworn field personnel will have more civil suits filed against them than police departments with fewer sworn field personnel.

DATA

The data used to test these hypotheses were collected by Antony Pate and Lorie Fridell in 1992 (for more detail, see Pate & Fridell, 1993). After using a stratified sampling technique, Pate and Fridell mailed surveys to 1,697 municipal, county, sheriffs departments, and state law enforcement agencies across the United States. Out of the 1,697 surveys mailed out to the various law enforcement agencies, 1,111 surveys (67.2%) were returned. The current study will only include municipal police departments with at least one full-time sworn officer ($n = 699$). These agencies range in size from 1 to 18,255 sworn field police personnel.

The decision to use only municipal police departments in this study was based on the distinctive differences in structure, context, culture, purpose, and history between municipal police departments and other types of law enforcement agencies. For example, sheriffs' agencies employ a much greater percentage of employees to serve civil process, guard courts, and run jails than municipal agencies (Walker & Katz, 2002). Falcone and Wells (1995) asserted that using the same criteria to examine different types of police organizations presents a form of aggregation bias that ignores the

unique roles and characteristics of each type. Because these differences are likely to (or at least plausibly might) affect civil suits, we view it as prudent to distinguish carefully between agencies of different types. Although this study examines only municipal agencies, further research on different agency types is also necessary and potentially informative.

INDEPENDENT VARIABLES

There is almost no theoretical development on the factors influencing municipal variation in civil suits against the police. This study examines one class of explanatory variables drawn from a rational/technical perspective on organizations (Maguire & Uchida, 2000). Rational/technical theories are the ones most often discussed implicitly by policy makers because their primary variables are ones that can presumably be changed by administrators and policy makers. These theories imply that organizations are rational entities that enact policies and procedures necessary to improve effectiveness and efficiency. A rational/technical perspective would suggest that agencies experiencing problems with civil suits must have some kind of organizational deficiency that accounts for these problems. It follows, then, that agencies with a high number of civil suits can solve their problem by enacting changes in the organization. So far there is little evidence on the merits of this approach. The independent variables used in this study represent some of the most popular rational/technical prescriptions for improving police performance: improving and increasing recruit and in-service training, and changing police department policies.

Although these are the only explanatory variables contained in the data set used in this study, other explanations are plausible. For instance, some agencies may experience more civil suits than others simply because the culture of the local legal establishment or the citizenry is more litigious (Worrall, 2001). Some municipalities may have more powerful (or more organized) interest groups that are able to coalesce and mobilize quickly in reaction to incidents of police misbehavior. They may provide legal support for citizens who ordinarily would not have the resources to launch a civil suit on their own. Observe that neither of these explanations is a characteristic of the police; rather, they are characteristics of the municipal environments in which police organizations operate. Our goal is not to provide a laundry list of potential theories that might affect civil suits against police,

but merely to point out that numerous explanations may be possible. A small subset of them are examined here.

To test the hypotheses associated with the effect of training on the number of civil suits filed per 1,000 police officers in the United States, the following list of variables will be used:

1. The total number of required police academy training hours.
2. Whether the police departments have a probationary period after police academy training.
3. The length of probationary period after police academy training (months).
4. Whether the police departments have an FTO program.
5. The length of the FTO program (weeks).
6. The number of in-service training options provided to individual officers by police departments. In-service training options include training on human relations, cultural sensitivity, use of nonlethal force, use of nonlethal weapons, and the use of lethal force on citizens.
7. Whether police departments require mandatory retraining of police officers who have been identified by police supervisors as using unnecessary excessive force.

For more detailed information on the descriptive statistics and frequencies of the training variables, see Tables 1 and 2.

To test the hypotheses that examine the effect of various police department policies on the rate of civil suits filed per 1,000 police officers in 1991, the following independent variables will be used:

1. Whether police departments have policies requiring that all use of lethal force incidents are reported to police supervisors.
2. The number of nonlethal use of force policies that require mandatory reporting of a variety of nonlethal use of force incidents. Nonlethal use of force incidents included in this category would be those situations where citizens were shot at by police officers but were missed, citizens were shot and wounded, citizens were struck with batons, citizens were shocked with Tom A. Swift Electric Rifle (TASER) guns, citizens were sprayed with chemical agents, and any other incidents where other devices were used on citizens.
3. Whether police departments publish information concerning the investigation of citizen complaints filed against individual police officers for public dissemination
4. The level of police departments' propensity to use force against citizens by requiring and/or providing either TASER guns and/or mace.
5. Finally, a hypothesis based on the size of the police department will also be tested using the total number of full-time, sworn patrol officers, detectives, and patrol sergeants assigned to field operations in each police department.

For more detailed information on the frequencies and descriptive statistics of all of the police department policy variables see Tables 1 and 2.

TABLE 1. Frequencies for Categorical Variables

Variable	*Response*	*Frequency*	*Valid %*
Training variables			
Probationary period after academy	Yes	594	97.2
	No	17	2.8
	Total	611	100.0
Field training officer (FTO) program	Yes	496	80.8
	No	118	19.2
	Total	637	100.0
In-service training (options)	0	53	9.4
	1	48	8.5
	2	71	12.6
	3	154	27.3
	4	103	18.2
	5	136	24.1
	Total	565	100.0
Retraining officers (identified misuse of force)	Mandatory training	278	42.8
	Not mandatory	371	57.2
	Total	678	100.0
Police department policy variables			
Policy on reporting use of lethal force	Yes	685	99.0
	No	7	1.0
	Total	692	100.0
Policy on reporting use of nonlethal force (six policies combined)	No reporting policies	7	1.1
	One reporting policy	1	1.2
	Two reporting policies	46	7.1
	Three reporting policies	83	12.9
	Four reporting policies	152	23.6
	Five reporting policies	147	22.8
	Six reporting policies	208	32.3
	Total	644	100.0
Police department publishes complaints	Yes	154	22.3
	No	538	77.7
	Total	692	100.0
Police department provides alternative methods of force (Mace or TASER guns)	Does not provide either	308	45.1
	Provides only 1 of 2	331	48.5
	Provides both items	44	6.4
	Total	683	100.0

Note: TASER = Tom A. Swift Electric Rifle.

DEPENDENT VARIABLE

The dependent variable is the rate of civil suits per 1,000 police officers in 1991. As shown in Table 2, although there are minor to moderate problems with missing data among the independent variables, only 30.2% of the

TABLE 2. Descriptive Statistics for Continuous Variables

Variable	*Range*	M	SD	n	*% Missing*
Number of civil suits per 1,000 police officers	0 to 250	26.86	34.23	211	69.8
Total academy hours	0 to 2,080	564.19	208.27	572	18.2
Probationary period after academy (in months)	3 to 40	11.55	3.91	589	15.7
Length of field training officer (FTO) program (in weeks)	1 to 52	13.12	6.38	477	31.8
Number of sworn field personnel	1 to 18,255	206.98	907.43	699	0.0

cases have nonmissing values for the dependent variable. Although this degree of *missingness*[1] is severe, statistical theory provides a number of tools that could potentially be used to determine whether it is still possible to test the hypotheses listed in the previous section. Before doing so, it will be useful to discuss some basic concepts from the growing literature on model estimation with missing or incomplete data.

PROBING THE MISSING VALUE PROBLEM

Multivariate data sets in the social sciences are rarely fully observed. In survey research, for example, some respondents fail to complete entire surveys, whereas others fail to answer only certain items or questions. The latter is most important for this study. The sources responsible for missing data patterns at the item level vary widely. Some questions are difficult to answer or fail to provide an adequate set of response options. Others may seek information on sensitive topics like sexual practices or income, which make respondents uncomfortable. Some may constitute legitimate replies, such as "don't know" or "not sure." Before making a decision about how to handle a missing data problem, the researcher first must make some hypotheses or inferences about the mechanism responsible for generating the missing data pattern.

In the survey instrument that produced the data used in this study, respondents were asked dozens of questions related to use of force policies, training, and procedures. Most of these questions produced some missing values, but the number of civil suits, which is used to calculate the dependent variable in this study, is missing at a far greater rate than all other variables in the study. This makes sense for a number of reasons. First, the question asks for sensitive data that respondents may be uncomfortable or fearful

about providing. Second, the respondents may not have easy access to the answer—that information may reside in other municipal offices, such as the city attorney's office. Third, the answer may be difficult to provide due to the methods used to resolve civil suits. For instance, plaintiffs may be persuaded, either by early settlement offers or other forms of persuasion to drop suits they have filed. In these cases, survey respondents may be uncertain how to respond. Thus, there are a number of plausible hypotheses that might account for the missing data pattern observed for the dependent variable in this study.

Statistical methods for estimating models with incomplete data have evolved considerably during the past two decades. Furthermore, these methods have been implemented in numerous software packages available to applied researchers. Using them, however, requires knowledge about the mechanism that produced the missing data. Rubin (1976) distinguished between three types of missing data patterns: missing completely at random (MCAR), missing at random (MAR), and nonignorable (NI) missing data. If the probability of responding to an item is independent of both the *X* and *Y* values, then the missing data pattern is described as MCAR (Little & Rubin, 1987, pp. 14-17). For instance, if respondents' decisions about whether to answer the questionnaire item on civil suits were independent of both the *X* (training and policy) and *Y* (civil suit) variables, then the data are MCAR. In this case, the observed data would approximate a simple random sample of the full (unobserved) data set and reasonable estimates could be obtained using a number of methods. MCAR is the most restrictive missing data condition.

If the probability of response depends on *X* but not on *Y*, then the missing data pattern is MAR. Most of the statistical mechanisms developed in recent years for missing data problems assume a missing data pattern that is at least MAR. The two most popular are multiple imputation (Little & Rubin, 1987; Schafer, 1997) and full information maximum likelihood (Muthén & Muthén, 1998). We will return to these methods shortly.

The third missing data pattern described by Rubin (1976) occurs when the probability of response "depends on Y and possibly X as well" (Little & Rubin, 1987, p. 14). Rubin termed this pattern NI. Although current research is exploring methods for dealing with NI missing data problems, the tools available to applied researchers require data that are at least MAR. Thus, NI data leave the analyst with few, if any, good choices for obtaining unbiased model estimates.

METHOD

To begin our exploration of missing data patterns in the survey data described earlier, we created a dummy variable with a 1 indicating that an agency responded to the question on civil suits and a zero indicating nonresponse on that question. Next, we explored the bivariate relationship between probability of response and each of the independent (or *X*) variables from the substantive model described earlier. The next step was to examine the robustness of these bivariate relationships using a multivariate logit model that regressed the response dummy on the full set of independent variables. The results, shown in Tables 3 and 4, demonstrate a moderate relationship between some of the *X* variables and the probability of responding to the questionnaire item on civil suits. The results of the bivariate analysis suggest that 7 of the 12 independent variables have a statistically significant bivariate relationship with the probability of response. Some of these wash out in the full multivariate model, which demonstrates that police departments that responded to the item on civil suits are larger and are less likely to publish investigations regarding civil suits. The multivariate logit model is statistically significant, as are two of the predictors in the model.

Recall that the MCAR condition holds if the missing data mechanism is independent of both the *X* and *Y* values. Although we are unable to test the effect of *Y* values (because they are unobserved for a large proportion of cases), the analysis just reported demonstrates clearly that the missingness is not independent of the *X* values. Thus, MCAR does not hold. The question about whether MAR holds is much more complicated because it relies on questions of probability and plausibility. For instance, one distinct possibility is that agencies with many civil suits decided not to reply for fear of placing themselves at risk for unwanted attention by researchers, the media, and perhaps even the Justice Department. Although we cannot state for certain that this is true, it appears at least plausible. Therefore, we find it difficult to state with any certainty that these data are MAR. It is more likely that the missing data mechanism is of the type described by Rubin (1976) as nonignorable. None of the widely used statistical techniques for estimating models with incomplete data, including multiple imputation and full information maximum likelihood, are defensible given nonignorable missing data. Furthermore, because the missing data problem is so severe and affects an outcome rather than a predictor variable, it appears unwise in this case to employ these techniques. This conclusion appears consistent with Acock's (1997) advice about the use of multiple imputation procedures:

TABLE 3. Bivariate Association Between Independent Variables and Item Response

Independent Variable	*Bivariate Tests*	*Bivariate Logit*
Total academy hours	$t = -2.239$*	$B = 0.0009$*
Probation period after academy training	$\chi^2 = 544.892$	$B = 2.1611$*
Length of probationary period	$t = -.811$	$B = 0.0174$
Field training officer (FTO) program	$\chi^2 = 232.710$	$B = 0.5760$*
Length of FTO program	$t = -1.966$*	$B = 0.0275$
In-service training	$\rho = .087$*	$B = 0.0864$
Retraining officers	$\chi^2 = 13.327$	$B = -0.0368$
Police on reporting use of lethal force	$\chi^2 = 664.283$	$B = 5.3835$
Police department publishes citizen complaints	$\chi^2 = 213.087$	$B = 0.2507$
Police department's nonlethal force options	$\rho = .089$*	$B = 0.1703$*
Number of sworn field personnel (log)	$t = -6.432$	$B = 0.3568$**

*$p < .05$. **$p < .001$.

TABLE 4. Logistic Regression of Survey Item Response on Independent Variables

Independent Variable	B	SE	*Wald*
Total academy hours	.0002	.0007	0.0888
Length of probationary period	.0524	.0312	2.8148
Length of field training officer (FTO) program	–.0363	.0222	2.6812
In-service training	–.0371	.0779	0.2270
Retraining officers	.0106	.2335	0.0021
Policy on reporting use of nonlethal force	.1482	.1020	2.1113
Police department publishes citizen complaints	–.6271*	.2741	5.2344
Police department's nonlethal force options	.1034	.1860	0.3091
Sworn field personnel	.5539**	.1391	15.8516

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

> One area where there seems to be no certain answer is whether to impute data for an outcome variable. The EM applications are easiest to implement when this is done. Because a random error is added in the imputation process, imputing an outcome variable is not necessarily a problem. This often happens in structural models that have some variables that are outcomes in terms of one set of variables and predictors in terms of a second set of variables. The regression approach with SPSS makes it much easier to avoid imputing missing values for outcome variables, if this is a concern. My recommendation is to avoid imputing missing values on outcomes when there are a substantial number of missing values. (p. 96)

Like Acock, we choose not to use these techniques.[2]

The results so far confirm that this data set suffers from sample selection bias. Sample selection bias results when elements of a population are missing nonrandomly from a sample, either for some or all variables. Left uncorrected, sample selection bias in the dependent variable often results in biased estimates of regression coefficients (Berk, 1983; Stolzenberg & Relles, 1990, 1997). James Heckman (1979) proposed a two-step procedure to correct for sample selection bias in which the analyst begins by estimating a probit model to explain the probability of response.[3] The predicted values from this model are then saved and incorporated as an independent variable in substantive models. Recent simulation research has shown that Heckman's procedure can make estimates worse as often as it improves them (Stolzenberg & Relles, 1990, 1997). Thus, the technique is not ideal. Nonetheless, there are conditions under which the procedure can achieve its goal of correcting for sample selection bias, so we are open to the possibility of its use while at the same time paying appropriate attention to the possibility of its misuse.

Having saved predicted values from the logit model presented earlier, we incorporated them as an independent variable in an ordinary least squares (OLS) regression model used to examine the effect of all 12 independent variables on the rate of civil suits per 1,000 police officers. If the saved predicted values variable in the OLS regression model were found to be statistically significant in the OLS regression model (in addition to the entire OLS model itself), we could claim with some confidence that the correction procedure has at least detected the selection bias, although more serious questions could be raised about the degree to which the bias has been corrected. These questions are moot, however, because extremely high levels of multicollinearity were discovered among many of the independent variables included in the OLS model, with variance inflation factors (VIFs) often exceeding 10 (Mason & Perreault, 1991). These inflated VIFs suggest that the collinearity in this model is severe and probably uncorrectable. Thus, although we find evidence of sample selection bias, we are unable to correct for it.

The conclusion is clear. The sample suffers from a severe problem with selection bias and missing data. Agencies that responded to the civil suit question are different in some quantifiable ways from agencies that did not answer the question. Many statistical techniques have been developed to deal with these problems, but none of them can be justified in this case. Sometimes statistical methods are simply no substitute for more basic research design issues.

DISCUSSION AND CONCLUSION

At a time when civil lawsuits against the police are of increasing concern to members of the public, police administrators, and individual police officers, it is important to examine what is currently known about the topic. After reviewing the current body of literature on civil suits against the police, it is obvious that there are still several unanswered questions. Most of the unanswered questions about civil suits against the police stem from the lack of empirical research. Part of this gap appears to be attributable to methodological problems associated with the sensitive nature of the topic.

The present study sought to test several substantive hypotheses about the sources of municipal variation in civil lawsuits against the police. In the course of examining these models, we serendipitously discovered severe problems of missing data and selection bias in the dependent variable. None of the tools available to applied researchers for dealing with these problems could be used with confidence in this study; therefore, we were unable to test the hypotheses described earlier. Sample selection bias can wreak havoc on the results of empirical studies when there is a significant portion of missing responses for the dependent variable (Berk, 1983; Stolzenberg & Relles, 1990, 1997). In this case, only 211 out of 699 (about 30%) survey respondents provided sufficient data on the dependent variable.

Our findings, coupled with the shortage of empirical research, suggest that studying civil suits filed against the police can be very difficult. However, it is not impossible. Quite often, research on sensitive topics focuses on "some of society's most pressing social issues and policy implications" (Sieber & Stanley, 1988, p. 55). Prior knowledge of those potential problems and further consideration of alternative methodologies could help researchers avoid the kinds of problems we encountered in this study.

When conducting research on sensitive topics, there is potential for each stage of empirical investigation to be affected by the nature of the topic, starting with the formulation of the research problem through design and/or implementation and dissemination of significant findings (Lee & Renzetti, 1993). However, there are several steps that can be taken to prevent or reduce potential data problems related to studying sensitive topics and organizational survey nonresponse. Tomaskovic-Devey, Leiter, and Thompson (1994) suggested several issues that researchers should be aware of when collecting data from organizations using surveys (known as *establishment surveys*). First, requests for financial information often result in either survey or item nonresponse. In the case of civil suits against police

departments, police administrators might be fearful of providing the dollar amount paid out for civil suits or the number of civil suits filed against their department. The agencies in this survey were promised confidentiality and the survey was backed by a prominent police professional organization; thus, the original researchers took appropriate steps to reduce the risk of replying. When asking sensitive questions of organizations, guarantees (verbal and/or written) of confidentiality and anonymity for the police departments is crucial for ensuring an adequate response rate (Lee, 1993, p. 164-206).

A second issue that affects response patterns in organizational surveys is confusion about who has the authority and obligation to complete them (Tomaskovic-Devey et al., 1994). In the case of civil suits against police departments, it would be appropriate to contact the chief of police with a telephone call before the survey is sent to the department. During the phone call the researcher could explain the purpose of the study and its potential benefits to the department, provide a guarantee (if necessary, in writing) that all information on the surveys will be kept confidential, and also allow the chief to ask questions about the study. If the chief agrees to participate in the study, the researcher should ask who would be responsible for filling out the survey and send it directly to that person or department. Although these steps might help alleviate some confusion about who is authorized or obligated to fill out the survey, practical experience suggests that: (a) it is often difficult to reach chiefs of police directly, because subordinates usually field these kinds of calls; and (b) this process is both time-consuming and expensive when conducting large-scale surveys.

A third issue that arises frequently in discussions of organizational survey nonresponse is the length of the instrument or the complexity of the questions (Tomaskovic-Devey et al., 1994).[4] In this case, it is unlikely that the instrument was problematic because the civil suit question was really the only one with severe non-response. The question may, however, have been difficult to fill out, either because the information is unavailable, or because for one reason or another the answer is not clear.

The final issue cited by Tomaskovic-Devey et al. (1994) is flexibility in survey administration. It is important to allow enough time for organizations to get access to information that is being requested of them on the survey. In the case of civil suits filed against the police, internal affairs and professional standard units may have the information that has been requested by the researcher, but it may not be easily accessible in a short period of time. For example, if all of the documentation from civil suits filed against a

police department during the course of 1 year is stored in individual paper files, it may take some time to organize and record pertinent information for questions on a survey. The extra time spent acquiring the information to fill out the survey could take away from other official police duties. In other instances, the records may be kept in a courthouse facility outside of the police department or by police legal advisors, risk managers, or insurance carriers housed outside of the department, and may be out of the immediate reach of police officials. Each of the previous scenarios can make filling out a survey time-consuming and burdensome for police personnel, thus potentially producing nonresponse.

It is important to note that a recent study on this topic received a much higher item response rate—85.9% (213 of 248), compared with only 30% in this study—on the survey question about civil suits (Worrall, 1998).[5] We believe that at least three factors might account for the discrepancy between the item response rates in these two surveys. First, the survey instrument from which Worrall derived his data was much shorter than the Pate and Fridell survey. Second, the 1991 Rodney King incident was probably still fresh in the minds of police administrators when Pate and Fridell distributed their survey in 1992, so police departments may not have wanted to draw attention to their own civil suits. In contrast, the instrument that Worrall used was distributed in 1996. Third, the data used in Worrall's (1998) analysis were derived from a national survey of police chiefs conducted by the Division of Governmental Studies and Services (DGSS) at Washington State University. DGSS has conducted mail-out and mail-back surveys in 3-year intervals since 1978, and the survey data used by Worrall (1998) constituted the seventh wave of data collection. Given the lengthy history of the survey, it is plausible that the agencies in this sample have developed a feeling of trust for the DGSS research team. Trust is a crucial element in research on sensitive topics. Although the missing data problem is clearly less severe in Worrall's work, to some extent it is still a problem shared in studies on civil suits against the police.

Another later study of lawsuits against the police conducted by Worrall (2001) obtained a 55% response rate for the survey as a whole (770 out of 1,400). Worrall attributed his low response rate to the sensitive nature of the questions. In addition, he noted that "some respondents expressly stated that they were leaving certain sections blank on the advice of counsel" (p. 113). The item response rate for the question on lawsuits was 73.5% (566 out of 770 respondents). Once again, the survey used by Worrall was administered

by DGSS at Washington State University and therefore enjoyed many of the benefits described above.

Following the suggestions prescribed by Tomaskovic-Devey et al. (1994) does not guarantee that police departments will agree to participate in a study on civil suits filed against them by citizens. The ultimate decision to participate lies in the hands of police administrators. It is important that police administrators are informed of the purpose of the study, and more important, how the results of the study could benefit their organization or profession. If researchers could, as we attempted here, isolate the effects of certain rational/technical factors (such as the amount of police training and department policies) on the number of civil suits, police administrators could then use that information to make important changes within their agencies.

It may also be useful to examine new methods for exploring the factors associated with interagency variation in civil suits. For instance, because much of the process occurs behind closed doors, ethnographic research on how civil suits are settled could provide sorely needed insights about the nature of the suits and the processes used to settle them. It may also be the case that police agencies are the wrong organizations to ask about civil suits. City attorneys' offices, for instance, may have faster access to such information, although they may be fearful of or unwilling to release it to researchers. Another method that could fruitfully be applied to this topic is the use of postcard surveys. King (1999) used a postcard survey of police agencies to learn the year in which they were established, a question requiring considerable research by some agencies to answer. However, because it was only one of two questions, the likelihood of response was greater than if these questions had been included in a larger instrument. Because this method is comparatively inexpensive, it might be a good idea to send postcard surveys to police and city attorneys. Another method for learning more about civil suits against the police is to explore federal and state court dockets to find cases with defendants who are police officers.[6] This still does not solve the problem of finding the hidden cases that have been negotiated and resolved behind closed doors, but it does solve the problem of depending on official data from police agencies or city attorneys' offices.

Finally, although innovative research designs are clearly needed to learn more about civil suits, it would be unwise to ignore theoretical considerations. Most discussions of civil suits rely implicitly on rational/technical explanations, because these are the factors most easily changed by administrators and policy makers. However, there is a world of other possibilities

that might account for variation in civil suits, and many of them exist outside police agencies. They include demographic considerations, the litigiousness of the population, the role of special interest groups, the propensity of the city attorneys' offices to settle cases quietly, and numerous other explanations in the environments of police organizations. Furthermore, given recent headlines on the role of aggressive policing tactics in producing civil unrest, it is important to explore the effects of street-level policing practices on the number and size of civil suits filed against the police. The topic is important enough to both police and citizens to warrant considerable effort on the part of researchers in applying appropriate theories and designing good research.

NOTES

1. The word *missingness* is commonly used by statisticians. For more information, refer to Little and Schenker (1995); Robins, Rotnitzky, and Zhao (1994); Toledano and Gatsonis (1999); and Wang, Wang, Zhao, and Ou (1997).

2. We urge caution in the use of either the full-information maximum likelihood–based (Muthén & Muthén, 1998) or multiple imputation–based (Schafer, 1997) techniques to solve the missing data problem in research on sensitive topics. Some researchers have chosen to employ these techniques on the same data set in this study (Cao, Deng, & Barton, 2000; Cao & Huang, 2000). However, Worrall (1998) noted in his study of civil suits against police that "imputation was not attempted due to the sensitivity of most measures, especially the incidence measures" (p. 310). We are not arguing that these techniques should never be used, only that their use should be preceded by a thoughtful consideration of both the assumptions underlying their use and the theoretical explanations for nonresponse.

3. Depending on the functional form of the relationship, some analysts also employ a logistic regression or linear probability model.

4. For a detailed discussion on the length of mail surveys, see Dillman (1991, pp. 225-249), Herzog and Bachman (1981), and Sudman and Bradburn (1983, pp. 226-227).

5. We are grateful to John Worrall of California State University in San Bernardino for sharing his research with us and for responding to our inquiries about missing data and item response patterns in his study.

6. We are grateful to an anonymous reviewer for making this suggestion.

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