A Management Tool for Evaluating Police Use of Force: An Application of the Force Factor

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Collecting and using data on police use of force is a complex issue. The process the authors suggest applies the force factor methodology to understanding police use of force relative to suspect resistance in interactive and sequential encounters. Agencies that adopt the force factor approach will learn about their officers, supervisors, and encounters with the public they serve. Although this process is fairly complex and may be difficult to implement, it will provide important information to agencies and the public.

Keywords: police force; force continuum; resistance force comparative scale; citizen resistance; excessive force

The Violent Crime Control and Law Enforcement Act of 1994 (Section 210402) requires the U.S. Attorney General to collect police use-of-force data annually from police departments. Although this law has led to an

energetic effort through a variety of means, collecting and interpreting the information remains a persistent problem for police managers. To meet this challenge, we propose a method by which police administrators can collect and monitor information on their agencies' use-of-force incidents.

Previous inquiries on police use of force by academics, police administrators, lawyers, judges, and others have often been stymied by the lack of an effective definition of excessive force (Alpert & Smith, 1994). In most cases, these inquiries rely on descriptive assessments and discussions of what does and does not constitute excessive force (see Geller & Toch, 1995; National Institute of Justice, 1999). One consistent theme among law, public, and police policy analysts is that the appropriate amount of police force is that which is reasonably necessary to achieve citizen compliance. The U.S. Supreme Court ruled that the use of force at arrest must be

> objectively reasonable in view of all the facts and circumstances of each particular case, including the severity of the crime at issue, whether the suspect poses an immediate threat to the safety of the officers or others, and whether he is actively resisting arrest or attempting to evade arrest by flight. (*Graham v. Connor*, 1989, p. 397)

However, determining what constitutes "objectively reasonable" force is not an easy task, whether in the context of an arrest or otherwise. We believe two mechanisms already used by some agencies—force reports and force continua—can serve as basic building blocks with which to gauge and assess use-of-force incidents. By incorporating a force continuum into a redesigned force-reporting system, it may be possible to more adequately determine what may be considered appropriate and inappropriate levels of force.

In the following sections, we present descriptions of various methods for collecting, measuring, and assessing the application of force. Following these descriptions, we demonstrate how police managers might incorporate them into a single tool to monitor individual officers as well as to create a relational database that can compare individuals or groups of officers. We discuss how this method of data collection could be incorporated into an early warning system and other administrative issues that may further enhance our understanding of police use of force.

FORCE REPORTS

Departments interested in developing a mechanism for identifying and monitoring officer use of force need to begin with a comprehensive data-

collecting strategy. Although police departments can use numerous mechanisms to track officer behavior (e.g., citizen complaints, officer surveys, and observations), we believe officer reports or supervisor control-of-person reports offer the most practical and systematic way to effectively collect use-of-force data. These two types of reports are discussed here.

Numerous departments currently utilize use-of-force reports completed by officers involved in forceful incidents. Many require reports when officers use force that is likely to cause death or great bodily harm (e.g., firing a weapon; Pate & Fridell, 1993). Some have extended reporting policies to include the use of intermediate tactics (e.g., Oleoresin Capsicum spray and batons). Others require reports when physical force results in suspect or officer injuries. In recent years, a growing number of departments have begun documenting all instances involving force, regardless of the potential for deadly force or subsequent injuries. The nature of officer use-of-force reports generally ranges from a brief description of the force used to a detailed narrative of the events that transpired leading up to the decision to use force, the suspects' actions, and the officers' responses.

Although officer use-of-force reports may be beneficial to departments wishing to collect use-of-force data, we advocate the use of supervisors' control-of-persons' reports (Alpert & Smith, 1999). This method generally requires supervisors to travel to the scene of all incidents when officers use force to interview the officers, suspects, and witnesses and record their responses. Supervisors must also take pictures of any injuries or record complaints of injuries. Similar to officer-completed use-of-force reports, these forms can combine preselected categories for demographics, levels and types of force, resistance, weapons, and other information. For example, the Miami-Dade (Florida) supervisor control-of-person report includes blocks of information on suspects' race, ethnicity, disease, injury, treatment, impairment, observed behavior, weapons present and used, and level of resistance. Similarly, information on officers includes a reference to their personal data (e.g., race, gender) as well as to behavioral information consisting of levels and types of force and weapons used. The information presented on the form is supplemented by a detailed narrative explaining each of the parties' perspectives. That is, supervisors write a sequential account of all relevant actions: the original call or observation, officer and suspect behaviors, why suspects resisted, and levels and types of resistance. Similarly, officers' actions including levels of force and how it was used are documented. Information on any injuries, complaints of injuries, and treatment

is also included. The supervisor then records the sequential ordering of who did what to whom, why, and the result.

This comprehensive type of report requires that supervisors ask officers, suspects, and witnesses a series of questions and record their responses. It is critical for the supervisors to understand that their job is to capture the stories provided by the parties not to justify the officers' actions or to argue with the suspects. In fact, in some cases, officers' versions of the facts will differ from those of the suspects or witnesses. This approach provides a panoramic picture of the use of force, levels, environmental factors, suspect resistance, and many other possible contributing factors.

Regardless of the data collection method selected (e.g., officer use-of-force reports or supervisor control reports), we believe that an effective strategy involves several crucial elements. First, officers need proper training on when and how reports should be completed. Data collection efforts can quickly break down if officers are unsure of when or how reports should be filed. In some agencies, existing criteria for completing use of force reports may be vague and subject to differing interpretations by first-line supervisors. Ideally, reports would be required for all incidents when officers use any form of physical force, including handcuffing and come alongs. Understandably, however, requiring a report on all forms of physical force to include handcuffing and come alongs may simply be too burdensome. At a minimum, we recommend that reports be required for all incidents where officers use physical force beyond handcuffing and come-along holds. Thus, in the vast majority of arrests where officers guide suspects' hands behind their backs to effect handcuffing, use-of-force reports would not be required. Force beyond routine handcuffing or guidance would require a report. In addition, we advocate that reports be completed when suspects physically resist regardless of whether the officers respond with physical force. Finally, a report should be filed when suspects complain of injury.

Second, the nature and level of both police force and citizen resistance need to be measured. From a legal and policy perspective, the nature or degree of citizen resistance is presumably a crucial factor in what legitimizes or makes force justifiable. As noted in the following section pertaining to the force continuum, examining the use of force absent citizen resistance provides little useful information. This is not to say that citizen resistance is the only factor that police may or should consider in use-of-force decision making but rather that it is one of the key factors. In the following section, we note other behaviors that should also be considered.

Third, the report of force should account for multiple uses of both force and resistance. To document accurately the application of force, officers or supervisors should attempt to identify *all* instances of both resistance and force, not only the highest level used. This includes a description of temporal sequencing—the behaviors as they occurred and which were prior to others (e.g., a citizen struggles to evade an officer, the officer applies a pain compliance hold, the citizen strikes the officer, and the officer uses his or her baton). As will become apparent in the following section, we believe the best way to understand the use of force is when multiple stages of resistance and force are examined. Hence, we suggest that temporal sequencing be incorporated into reporting procedures.

THE FORCE CONTINUUM

Once a data collection strategy is in place, it should be linked to a continuum of force policy. Force continua include varying levels of resistance and force arranged along an ordinal scale in terms of the potential severity of harm it presents to the other person (see Alpert & Dunham, 1997; Connor, 1991; Desmedt, 1984; Garner, Schade, Hepburn, & Buchanan, 1995; Graves & Connor, 1992; Klinger, 1995; McLaughlin, 1992; Parsons, 1988; Terrill, 2001). Police departments often present and use a continuum as a guideline that promotes police escalation of force in "small increments" in reference to the level of resistance encountered. Thus, to achieve citizen compliance (with respect to a force continuum), officers are encouraged to use a level of force that is commensurate to the level of citizen resistance encountered. From an individual officer's perspective, a force continuum offers guidance as to the options most appropriate for a given level of resistance. From a manager's perspective, the concept of a force continuum can provide a means or analytic tool for measuring and examining use of force relative to citizen resistance. Thus, a force continuum is simply a way to characterize and examine how officers apply force in relation to the resistance they encounter. By using a force continuum, the extent to which police behavior adheres to an "incrementalist" approach of escalating and deescalating force can be discerned. We believe that before one can begin to judge the appropriateness of police force, the extent to which force has been applied in such an incrementalist manner must be measured.

In previous works, we have demonstrated the utility of using a force continuum to improve our understanding of how and why officers apply force. In 1997, Alpert and Dunham proposed the use of force factor scores to

TABLE 1. Force Factor

Suspect Resistance Levels	Officer Force Levels
1. Cooperative and/or no resistance	1. Police presence and/or verbal direction
2. Verbal noncompliance, passive resistance, and/or psychological intimidation	2. Strong verbal order (minimal contact)
3. Defensive resistance and/or attempted to flee	3. Forcibly subdued—hands or feet (defensive use—open hand or Oleoresin Capsicum spray)
4. Active resistance	4. Forcibly subdued—hands or feet (offensive use—open hand)
5. Aggravated active resistance	5. Forcibly subdued—intermediate weapon (used weapon—nondeadly)
6. Active resistance (with a deadly weapon)	6. Deadly force

assess relative degrees of force in relation to citizen resistance. They argued that one must measure suspects' levels of resistance and officers' levels of force (both on the same scale). In a more recent version, they used the categories of force and resistance presented in Table 1.

Using the highest level of resistance and force within an individual incident, the force factor is calculated by subtracting the level of resistance from the level of force (force – resistance = force factor). For example, no force with a cooperative suspect would calculate as $1 - 1 = 0$, indicating a similar level of force relative to resistance; subduing with the hands or feet in an offensive manner on a passively resistant suspect would calculate as $4 - 2 = 2$, indicating a higher level of force relative to resistance; a verbal command and active resistance calculates as $2 - 4 = -2$, indicating a lower level of force relative to resistance. Hence, the force factor ranges from –5 to five. A zero force factor score is interpreted as commensurate force for the level of resistance. If the level of force is higher than the level of resistance, then the force factor is positive, with 1 point for each level of discongruence. If the level of force is lower than the level of resistance, the force factor is negative, 1 point for each level of discongruence. Using data from three cities, Alpert and Dunham (1997) demonstrated how a number of relevant variables can be examined within the context of the force factor (e.g., in Miami-Dade officers used less force relative to the level of resistance on Hispanic suspects). In 2000, this approach was used in other agencies and revealed that in Miami-Dade, there was no difference in levels of force relative to suspect resistance, but in Prince George's County Maryland, White officers used more force against Black suspects than against any other ethnic groups (Alpert et al., 2001).

TABLE 2.   Resistance Force Comparative Scale

Suspect Resistance Levels	Officer Force Levels
1. No resistance	1. No force
2. Passive or verbal	2. Verbal command or threat
3. Defensive	3. Restraint and control (including Oleoresin Capsicum spray)
4. Active (including intermediate weapons)	4. Pain compliance or takedown
5. Deadly force	5. Intermediate weapons
	6. Deadly force

Resistance Level	Less Force	Commensurate Force	More Force
1	—	1, 2	3, 4, 5, 6
2	1	2, 3	4, 5, 6
3	1, 2	3, 4	5, 6
4	1, 2, 3	4, 5	6
5	1, 2, 3, 4, 5	6	—

In 2001, Terrill proposed taking the concept of a force continuum and force factor scores a step further by comparing individual force factor scores to a continuum of force he called the Resistance Force Comparative Scale (RFCS). The difficulty with the force factor approach, advocated Alpert and Dunham (1997), is that only the highest level of resistance and force within an individual police-citizen encounter is considered. This fails to account for multiple and successive citizen and police behaviors throughout each encounter. Using an analytic scheme similar to the one illustrated in Table 2, Terrill advocated taking each instance of resistance and force and coding it into sequences within each encounter so as to link multiple resistance and force behaviors to determine if the level of force used falls within a continuum of force.

In theory, the RFCS procedure provides a series of force factor scores as opposed to just one for each encounter. However, rather than numerically calculating individual factor scores, Terrill (2001) made a determination (using the bottom portion of the RFCS in Table 2) as to whether the continuum is followed for each sequence of resistance and force. For example, no resistance (level 1) and a verbal command (level 2) would fall within the continuum (i.e., commensurate force); verbal resistance (level 2) and a takedown maneuver (level 4) would indicate a higher level of force than the continuum provides (i.e., more force); defensive resistance (level 3) and

verbal force (level 2) would indicate a lower level of force than the continuum provides (i.e., less force). Upon determining the outcome of individual sequences, the entire string of sequences is examined and a determination is made as to whether the continuum is followed as a whole. For instance, if the first sequence involves no resistance and a command followed by a second sequence involves passive resistance and a takedown maneuver, the outcome would indicate that the officer used a higher level of force than the continuum provides because in the second sequence, the level of resistance and force diverge.

The advantage of the RFCS is that temporal sequencing is taken into account as opposed to relying solely on the highest level of force, which provides an incomplete depiction of the encounter. For example, envision an encounter in which a suspect demonstrates no resistance and the officer uses pepper spray, which in turn leads the suspect to defensively resist followed by the officer using a second burst of pepper spray. Use of the force factor in this case would only consider the highest levels of resistance and force, which would calculate to $3 - 3 = 0$ and indicate a level of force commensurate with the level of resistance. Conversely, with the RFCS taking multiple uses of resistance and force into account, a different picture emerges. In this case, because of the sequencing of events, it is clear that the initial use of force is not commensurate with the level of resistance. The encounter began with a nonresistant suspect who became resistant only after the officer applied pepper spray.

The underlying intent of the RFCS is to determine the extent to which officers respond to various levels of resistance with similar levels of force and whether an incremental approach is used when applying force. Specifically, the objective is to determine if an officer (a) refrains from moving up the continuum despite resistance, (b) moves up and down the continuum incrementally based on resistance, or (c) moves up the continuum without a commensurate level of resistance. Using data from two cities, Terrill (2001) demonstrated how a number of factors can be examined within the context of instances when officers either follow or do not follow along the force continuum (e.g., officers were more likely to use higher levels of force than the continuum provides on suspects displaying signs of drug or alcohol use).

In sum, examining citizen resistance along with police force is critical to adequately understanding the context in which force is applied. Virtually any inquiry concerning how or why officers use force is augmented by the inclusion of citizen resistance. Knowing an officer used force tells us very little without knowing the specific type of force used, how many times it

was used, and what the citizen behavior was prior to each use. The benefit of examining police force through a use-of-force continuum is that it identifies instances when officers fail to escalate and deescalate force in relation to citizen resistance. Concern over the proper use of force is most pronounced when it appears that the level of police force is not congruent with the level of resistance that preceded it: instances when a citizen is compliant but the officer chooses to use a pain compliance technique, instances when a citizen passively resists but is punched or struck with a baton, instances when a citizen verbally resists and the officer delivers a blow to the head, and even instances when a citizen refuses to adhere to a command but the officer chooses to ignore such resistance. It is one thing for an officer to tackle a fleeing suspect. It is quite another for an officer to tackle a fleeing suspect, place him in handcuffs, and then proceed to hit him. Hence, use of the force continuum as a measuring device is nothing more than a way to more adequately identify those instances when resistance and force appear to diverge.

ASSESSING FORCE—COMBINING FORCE REPORTS WITH A CONTINUUM OF FORCE

In this section, we present how departments can use data collected on force incidents (via force reports) and assess or track force by individual officer, assignment, length of service, ethnicity, gender, unit, or any number of variables (via force continuum analyses). Such an approach can provide managers with important information about the behavior of officers, the need for training, or the need to modify policy. The assessment process includes the following eight stages. Of course, the use of this type of approach involves a substantial resource commitment that may not be an option for some agencies. We offer the following approach simply as an ideal way to comprehensively collect and assess use of force data.

STAGE 1—RELIABILITY

The first stage involves determining the reliability of force reports. This requires an evaluation or review of the form's content by an independent third party. Although a variety of individuals could be charged with this task, we suggest that it be completed by someone within the department (e.g., a designated force analyst) whose primary responsibility is to determine reliability, prepare reports for cataloging into a database, and ultimately, assess or compare both individual officers as well as groups of

officers. As force reports are often reviewed and accepted by a number of command staff officers, this task should be relatively simple.

Determining reliability begins with a review of the report to ensure all relevant information is included. Officials will be unable to effectively monitor force incidents if officers or supervisors are unable or unwilling to fully complete forms. Second, a sample of suspects and witnesses should be contacted to see if officers or supervisors correctly reported their versions of events. Instances in which there is disagreement between written reports and suspect or witness versions should be noted and can eventually be incorporated into the analysis process detailed as follows.

STAGE 2—SEQUENCE FORCE FACTOR SCORES

The second stage involves creating individual force factor scores for each temporal sequence within a police-citizen encounter by assessing whether the officer behaved in a manner consistent within a force continuum. This requires merging the two techniques described in the preceding section: the force factor and the RFCS. Essentially, this involves creating force factor scores similar to those originally proposed by Alpert and Dunham (1997) and then applying such scores in the manner described by Terrill (2001) in the RFCS. In short, for each sequence, force factors scores should be applied not to what level of force is used compared with resistance (as in the force factor) but to whether the continuum was followed (as in the RFCS, which already accounts for the level of force compared with resistance). For purposes of the following description, we refer to a continuum policy that mirrors Table 2, although any continuum design can be used. Departments are encouraged to customize the scale according to their own needs (e.g., policy or training).

A sequence is defined as any occurrence of citizen resistance, police force, or both. In essence, a sequence pairs the citizen behavior with that of the officer. The first step in this stage is to lay out each sequence of behaviors and give each one a force factor score of –1, 0, or 1. Note that force factor scores do not directly correspond to the level of force or resistance as in Alpert and Dunham's (1997) original conceptualization. Instead, force factor scores are categorized by how they correspond to a specific continuum of force. Hence, a sequence is coded –1 when officers use less force than the continuum permits (e.g., a higher level of resistance than force). A score of 0 indicates force that is commensurate with the level of resistance (e.g., resistance and force match up or are similar). A score of 1 is given when an

officer uses more force than the continuum provides (e.g., a higher level of force than resistance).

The following examples illustrate how sequence force factor scores can be applied. Envision an encounter that has three temporal sequences in which the officer follows the continuum in the first (e.g., no resistance and verbal command), continues to follow it in the second (e.g., verbal resistance and physical restraint), and uses more force than resistance in the third (e.g., defensive resistance and intermediate weapon). The three force factor scores are coded as 0, 0, 1. Conversely, imagine the same scenario, but in the third sequence, the officer uses less force than resistance (e.g., defensive resistance and verbal command). Here, the scores are coded as 0, 0, and –1. In a third example, suppose the officer follows the continuum in all three sequences. This is scored as 0, 0, and 0.

It is imperative that additional factors, beyond citizen resistance, be built into the coding structure as well. For instance, an arrest usually involves some form of physical restraint as the person is taken into custody. As such, the coding of arrest cases should allow for a higher level of force than the continuum normally provides when faced with an arrest situation and a non-resistant suspect. In this type of case, an officer should be permitted to use up to Level 3 force—restraint and control. Similarly, officer and citizen safety issues (e.g., citizen has a weapon or two citizens fighting with one another) need to be taken into account within the coding scheme. For example, when an officer safety issue arises, officer force should be permitted to escalate above the level of suspect resistance. Again, we encourage individual agencies to adjust the coding scheme according to their own needs and preferences.

STAGE 3—OVERALL INCIDENT FORCE FACTOR SCORES

Upon applying individual sequence force factor scores, Stage 3 involves computing an overall force factor for each police-citizen encounter (based on what occurred in each sequence). As with individual sequences, force factor scores range from –1 to 1 (–1 indicating less force relative to resistance, 0 indicating commensurate force and resistance, and 1 indicating more force relative to resistance). If the outcome for each sequence is the same for the entire string of sequences, then the final outcome should also remain the same. For example, if there are three sequences and in each one the continuum is followed, then the final outcome is that the officer

followed the continuum (e.g., a level of force commensurate with the level resistance) and is numerically coded as 0.

In a case in which an officer uses less force than the continuum permits in one or more sequences and follows the continuum in others, the final outcome should be that the officer used less force. For instance, if there are three sequences and in two, the officer uses less force and in one, follows the continuum, then the final outcome is that the officer used less force. In other words, as long as less force is used in at least one of the sequences and there is no sequence involving the application of more force, the case is coded as –1. Conversely, if in some sequences the officer uses more force than the continuum provides while in others follows the continuum, then the final outcome is that the officer used more force. That is, as long as more force is used in at least one of the sequences and there is no sequence involving the application of less force, the case is coded as 1.

Alternatively, if in some sequences the officer uses less force than the continuum permits, while in others uses more force than the continuum provides, the final outcome should be given a special force factor score (e.g., –9) to distinguish it from the other cases. For example, if there are three sequences and in two the officer uses less force than the continuum permits and in one sequence the officer uses more force, then the incident should be given special consideration. Cases where officers refrain from applying a given level of force in some sequences and apply more force in other sequences need to be evaluated separately as described in Stage 8.

It is important to note that a sliding scale should be applied (as per the basic continuum coding scheme) as the encounter moves from one sequence to another when repeated suspect resistance or force is used. For instance, if a resistant suspect continues the same level of resistance in consecutive sequences, commensurate officer force should be coded at the next highest level of force. Hence, if in Sequence 1, a suspect passively resists (e.g. lays on the ground) and the officer attempts a mild form of physical control and in Sequence 2, the suspect again passively resists, the officer should no longer be restricted to physical control, which is what the basic continuum coding structure calls for without considering a sliding scale. In this case, the officer should be permitted to use a pain compliance technique as commensurate force—one step up on the continuum.

For assessment purposes, the continuum coding structure is nothing more than a means to help identify instances when it appears officer force is not congruent with suspect resistance (or other confounding influences

such as safety issues or arrest cases) according to the criteria of the continuum. Agencies can manipulate the coding structure to give an officer one or two increments that could be defined as commensurate force. This should be adapted to individual agency needs. The intent is to provide adequate leeway without being overly restrictive. The aim is to identify only those cases in which suspect resistance is substantially different than the level of force applied by the officer, as defined by the agency's own predetermined cutoff point. Assessing police force in the context of a force continuum allows for an examination of the differences in how police use their coercive powers and, more specifically, the extent to which officers follow an incrementalist approach to escalating and deescalating force. A most important aspect of classifying force using this analytic scheme is that it not only highlights instances when officers use more force but also details instances when officers resolve incidents with *less* force than what is justified, a strategy rarely used in assessing police use of force.

STAGE 4—DATA MANAGEMENT

The fourth stage requires translating the captured information into a database for assessment purposes. A temporal account of suspect resistance and police force can be built that includes individual sequence force factor scores, if and when in the process an arrest decision occurred or a weapon was uncovered, and the level of conflict present between suspects on the scene. Officer and suspect characteristics such as gender, age, ethnicity, demeanor, and impairment should also be included. Of course, the database should incorporate a variable indicating the overall force factor score of –1, 0, or 1. Developing a database with the incident as the unit of analysis will permit further aggregation of the data for subsequent analysis on individual officers as well as groups of officers by any number of categories (e.g., by unit, assignment, age, gender).

STAGE 5—INDIVIDUAL OFFICER ASSESSMENT AND COMPARISONS

At this stage, the ability to systematically monitor individual officers becomes a relatively simple task. Once the data are entered into a database, a force analyst or any designated official can begin to look at individuals and compare one to another. Using hypothetical data, Tables 3 through 5 depict three officers, each with 10 incidents and 3 sequences involving forceful or

TABLE 3. Tendency to Use More Force

| | Officer 1 | | | | | | | | | |
| | Sequence 1 | | | Sequence 2 | | | Sequence 3 | | | Final |
Event	Citizen	Police Officer	Force Factor Score 1	Citizen	Police Officer	Force Factor Score 2	Citizen	Police Officer	Force Factor Score 3	Force Factor Score
1	1	2	0	3	4	0	1	2	0	0
2	1	2	0	2	3	0	3	4	0	0
3	3	5	1	2	3	0	1	2	0	1
4	3	4	0	1	2	0	2	2	0	0
5	1	2	0	2	5	1	3	4	0	1
6	1	2	0	2	2	0	1	2	0	0
7	1	2	0	2	2	0	1	2	0	0
8	2	3	0	1	2	0	1	2	0	0
9	1	2	0	2	3	0	1	2	0	0
10	1	2	0	1	2	0	2	2	0	0

Note: Average final force factor score = .20. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

TABLE 4. Tendency to Use Less Force

| | Officer 2 | | | | | | | | | |
| | Sequence 1 | | | Sequence 2 | | | Sequence 3 | | | Final |
Event	Citizen	Police Officer	Force Factor Score 1	Citizen	Police Officer	Force Factor Score 2	Citizen	Police Officer	Force Factor Score 3	Force Factor Score
1	2	2	0	1	2	0	1	2	0	0
2	1	2	0	2	3	0	1	2	0	0
3	3	2	−1	2	3	0	1	2	0	−1
4	1	2	0	1	2	0	2	2	0	0
5	2	2	0	2	1	−1	3	4	0	−1
6	1	2	0	2	3	0	1	2	0	0
7	3	3	0	1	2	0	1	2	0	0
8	2	3	0	1	2	0	1	2	0	0
9	1	2	0	2	3	0	1	2	0	0
10	1	2	0	1	2	0	2	2	0	0

Note: Average final force factor score = −.20. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

resistant behavior. Each sequence is laid out according to the levels of suspect resistance and police force (corresponding to the levels of the RFCS in Table 2) and assessed an individual sequence force factor score of −1, 0, or − 1 depending on whether they used less force, commensurate force, or more

TABLE 5.   Tendency to Use Commensurate Force

	Officer 3									
	Sequence 1			Sequence 2			Sequence 3			Final
		Police	Force Factor		Police	Force Factor		Police	Force Factor	Force Factor
Event	Citizen	Officer	Score 1	Citizen	Officer	Score 2	Citizen	Officer	Score 3	Score
1	2	2	0	1	2	0	1	2	0	0
2	1	2	0	1	2	0	2	3	0	0
3	3	5	1	2	3	0	1	2	0	1
4	1	2	0	1	2	0	2	2	0	0
5	2	2	0	2	1	−1	3	4	0	−1
6	3	3	0	1	2	0	1	2	0	0
7	1	2	0	4	4	0	1	2	0	0
8	2	3	0	1	2	0	1	2	0	0
9	1	2	0	2	3	0	1	2	0	0
10	1	2	0	1	2	0	5	5	0	0

Note: Average final force factor score = .00. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

force than the continuum permits, respectively. At the end of each incident, an overall force factor is applied according to the description in Stage 3.

In this set of examples, Officer 1 (see Table 3) follows the continuum in 8 out of 10 incidents while using more force than resistance in the other two. Averaging the overall or final force factor scores results in .20. Conversely, Officer 2 (see Table 4) follows the continuum in 8 of 10 incidents but uses less force than resistance in two, resulting in an overall average force factor score of –.20. Alternatively, Officer 3 (see Table 5) follows the continuum in 8 of 10 encounters, uses more force than resistance in one, and uses less force than resistance in another. In this case, the officer averages an overall force factor score of 0.

As demonstrated here, the more officers fall on the negative side of the equation, the more often they hold back or refrain from using force relative to resistance. The more often officers fall on the positive side of the equation, the more often they apply greater levels of force relative to resistance. Scores that are closer to zero indicate that officers are matching the level of force to the level of resistance encountered. The ability to numerically score individual officers allows managers to not only get a better sense of how officers are applying force in relation to suspect resistance but also to look at relative differences between officers. This type of information can be used in a variety ways as discussed in Stage 7.

TABLE 6.   Unit Summary 1

		Day Shift								
	Sequence 1			Sequence 2			Sequence 3			*Final*
		Police	*Force Factor*		*Police*	*Force Factor*		*Police*	*Force Factor*	*Force Factor*
Officer	*Citizen*	*Officer*	*Score 1*	*Citizen*	*Officer*	*Score 2*	*Citizen*	*Officer*	*Score 3*	*Score*
1	2	2	0	1	2	0	1	2	0	0
1	1	2	0	1	2	0	2	3	0	0
1	3	4	0	2	3	0	1	4	1	1
2	1	2	0	1	2	0	2	2	0	0
3	2	2	0	2	3	0	3	4	0	0
3	1	2	0	3	4	0	1	2	0	0
3	1	4	1	1	2	0	1	2	0	1
3	2	2	0	3	4	0	2	4	1	1
4	1	2	0	2	3	0	1	2	0	0
4	1	2	0	2	2	0	1	2	0	0

Note: Average final force factor score = .30. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

STAGE 6—GROUP ASSESSMENT AND COMPARISONS

As with assessing and comparing individual officers, the same can be done with various groups of officers (e.g., unit or shift, assignment, age, gender, and so forth) by aggregating data. For instance, a comparison can be made between units by shift as demonstrated in Tables 6 through 8. Table 6 depicts hypothetical data collected from four officers assigned to the day shift. These officers were involved in 10 incidents each with 3 sequences involving resistance or force. Using the same procedures to assign force factors for individual sequences as well as an overall force factor, an average unit or group force factor emerges. In this particular example, the average force factor computes to .30.

Table 7 lists hypothetical data from four officers assigned to the middle shift who were involved in 11 incidents. Of the incidents, seven resulted in overall force factor scores of 0. The remaining four incidents involved three that were rated as 1 and one rated as –1. Taking an average for the group across the 11 incidents produces an overall force factor score of .18.

Table 8 shows hypothetical data from four officers assigned the night shift. In this unit, the average final force factor is –.11. This is derived by taking final force factor scores for 9 of the 10 incidents (absent the –9 case) and averaging the scores. As can be gathered from these three tables,

TABLE 7. Unit Summary 2

				Middle Shift						
	Sequence 1			Sequence 2			Sequence 3			Final
		Police	Force Factor		Police	Force Factor		Police	Force Factor	Force Factor
Officer	Citizen	Officer	Score 1	Citizen	Officer	Score 2	Citizen	Officer	Score 3	Score
1	1	2	0	1	2	0	3	3	0	0
1	1	2	0	1	2	0	2	3	0	0
1	3	4	0	2	3	0	1	4	1	1
2	1	2	0	1	2	0	2	2	0	0
3	2	2	0	2	3	0	3	4	0	0
3	1	2	0	2	2	0	1	2	0	0
3	1	4	1	1	2	0	1	2	0	1
3	2	2	0	3	4	0	5	4	−1	−1
4	1	2	0	2	3	0	1	2	0	0
4	1	2	0	2	2	0	1	2	0	0
4	1	2	0	1	4	1	2	5	1	1

Note: Average final force factor score = .18. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

TABLE 8. Unit Summary 3

				Night Shift						
	Sequence 1			Sequence 2			Sequence 3			Final
		Police	Force Factor		Police	Force Factor		Police	Force Factor	Force Factor
Officer	Citizen	Officer	Score 1	Citizen	Officer	Score 2	Citizen	Officer	Score 3	Score
1	1	2	0	3	3	0	1	2	0	0
2	1	2	0	1	2	0	2	3	0	0
2	3	4	0	3	1	−1	2	1	−1	−1
2	1	2	0	1	2	0	2	1	−1	−1
2	2	2	0	2	3	0	3	4	0	0
3	1	4	1	1	2	0	1	2	0	1
4	1	2	0	1	2	0	2	2	0	0
4	2	3	0	3	4	0	1	2	0	0
4	2	1	−1	2	1	−1	2	5	1	−9
4	3	4	0	1	2	0	1	2	0	0

Note: Average final force factor score = −.11. Citizen and police officer numbers signify levels of resistance and force according to top portion of Table 2.

officials interested in comparing one shift to another can easily get a sense of the manner in which force is applied. In this example, the day shift ranks the highest followed by the middle and night shifts, respectively.

Police managers can create comparisons for a number of different grouped categories. Comparisons can be made between and among gender, age, tenure, levels of education, different types of units (e.g., patrol versus street crimes), shifts, or any desired category. As data are collected over time, officials will have the ability to track both individuals and groups of individuals and compare them with past findings.

STAGE 7—SPECIAL CASE ASSESSMENTS

There are two particular types of situations that require unique assessments. The first involves cases in which officers use both more force and less force than the continuum permits within the same incident. For instance, one of the incidents in Table 8 (by Officer 4) resulted in two sequences of less force and one with more force. As noted in Stage 3, such a case is scored –9 and is not computed in the final average. An argument can be made that these types of incidents involve the most erratic behavior. In essence, officers swing from one end of the continuum to another as the incident unfolds. Such cases cannot simply be examined in the same numerical manner as other cases.

We suggest that for cases such as these, a separate database should be created and a more in-depth analysis conducted. For example, what is the pattern of fluctuation? Do officers tend to hold back first and then jump or skip several levels on the force continuum? Officers with a high number of these cases should be looked at carefully and possibly considered for additional training on the force continuum policy. In cases such as these, officers are failing to both escalate and deescalate force in small increments as proposed by a continuum policy. However, these incidents may include special circumstances that justify abrupt shifts in levels of force. Our suggestion is to evaluate these cases thoroughly to determine if there are any issues that need resolving.

The second type of special case represents those involving disagreements between the officers', suspects', and witnesses' versions of events. Managers can handle these types of cases in one of two ways. A "totality of cues" approach can be taken in which supervisors determining reliability (e.g., the force analyst) take into account all versions and select that which best seems to fit overall. A second approach is to tag cases and track officers by the number of disagreements. As with officers who have numerous cases of using both more and less force within the same incident, officers with a

high number of disagreements should be looked at or labeled for possible intervention.

STAGE 8—INTERVENTIONS

The use of force factor scores can be used in a variety of ways to improve the manner in which force is applied to suspect resistance. For instance, scores can be incorporated into an early warning system to identify officers who diverge from the continuum. Officers and groups can be ranked in numerical order from –1 to 1. Those who score on the outer ends of the distribution can be targeted for review and possible intervention.

THE BENEFITS OF RELATIONAL DATA

One of the benefits of examining police force as previously described is that the level of force is controlled by the level of suspect resistance. Incorporating and accounting for arrest as well as for officer and citizen safety issues within the coding process (as described in Stage 2) allow for comparative and relational analysis. One of the most often voiced criticisms by officers who tend to use force more than do other officers (traditionally measured by reports and citizen complaint data) revolves around assignment bias or the argument that such officers are more active and ultimately involved in more contentious situations. Use of the proposed method essentially standardizes or levels the playing field for all officers by accounting for such situations at the incident level. Officers who have to rely on higher levels of force more often than do others will not automatically score in the upper end of the continuum. It is basically irrelevant if some officers end up using higher levels of force quite often as long as the level of force is commensurate with the level of resistance or some other contributing factor is present (e.g., arrest cases or safety issues). The concern should not be that some officers use force more often and at higher levels. Rather, the concern comes into play when the level of force is not commensurate with the level of resistance.

Although force factor scores can be used as one mechanism to assess police force, they can also be used in combination with other sources to potentially target certain officers for intervention. Force factor scores can be combined with citizen complaint data and incorporated into an early warning system (Walker & Alpert, 2000). For instance, an automatic flagging system can be implemented that identifies officers with a certain number of

force complaints combined with a certain average force factor threshold (e.g., those scoring above .20 or those scoring in the top 10%). Such a system can improve a department's ability to intervene and prevent abuses. In addition, managers may want to develop a retraining program for those officers who consistently fall on the upper end of the distribution. These officers may simply not understand the force continuum or how to apply it. Furthermore, officers on the lower end of the distribution may be used as training instructors to convey their techniques for resolving incidents (after determining that they are not creating safety hazards for themselves or other officers). Regardless of where officers are located within the distribution, managers will want to keep a check of both suspect and officer injuries. Although officers at the top of the distribution may be more likely to cause and be subjected to a higher rate of injuries, the opposite may also be true. Perhaps those officers most likely to refrain from using force relative to resistance are also more likely to be injured.

As more data become available, officials will want to keep a close watch on whether there should be modifications to the existing force-reporting procedure and continuum policy. It may be that the continuum structure selected is simply too restrictive and that virtually all officers average a positive force factor score. It may also be the case that the use of supervisor control of persons' reports will become too burdensome and officials may want to opt for officer use-of-force reports. Furthermore, regardless of how the system initially operates, it should be seen as an evolving system that will require modifications over time.

A Concluding Comment

The process we have suggested applies the force factor methodology to understand police use of force relative to suspect resistance as an interactive or sequential encounter (as outlined in the RFCS). Our approach challenges traditional use-of-force management systems by demonstrating that many citizen complaints may be unfounded and that police departments are doing what is necessary to police themselves. Use-of-force incidents can destroy community trust and confidence in the police when these events are misunderstood. It is important for police managers and citizens to understand levels of police force relative to suspect resistance and how these incidents develop. Agencies that adopt the force factor approach and the sequential ordering of events (e.g., via the RFCS) can possibly help themselves by learning more about their officers, supervisors, and encounters with the

public they serve. Although this process is fairly complex, may be difficult to implement, and involves a substantial resource commitment, the potential benefits may be great (e.g., improved police-citizen relations and a reduction in civil lawsuits).

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