AGGRESSION IN POLICING: UTILIZING SCALE DEVELOPMENT TOWARD THE MEASUREMENT OF POLICE USE OF NON-DEADLY PHYSICAL FORCE

Michael John Antal
University of Southern Mississippi

Follow this and additional works at: https://aquila.usm.edu/dissertations

Part of the Criminology and Criminal Justice Commons, Law Enforcement and Corrections Commons, Legal Theory Commons, Other Legal Studies Commons, and the Public Affairs, Public Policy and Public Administration Commons

Recommended Citation
Antal, Michael John, "AGGRESSION IN POLICING: UTILIZING SCALE DEVELOPMENT TOWARD THE MEASUREMENT OF POLICE USE OF NON-DEADLY PHYSICAL FORCE" (2007). Dissertations. 1236.
https://aquila.usm.edu/dissertations/1236

This Dissertation is brought to you for free and open access by The Aquila Digital Community. It has been accepted for inclusion in Dissertations by an authorized administrator of The Aquila Digital Community. For more information, please contact Joshua.Cromwell@usm.edu.
AGGRESSION IN POLICING: UTILIZING SCALE DEVELOPMENT TOWARD THE
MEASUREMENT OF POLICE USE OF NON-DEADLY PHYSICAL FORCE

by

Michael John Antal

A Dissertation
Submitted to the Graduate Studies Office
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Approved:

May 2007
COPYRIGHT BY

MICHAEL JOHN ANTAL

2007
AGGRESSION IN POLICING: UTILIZING SCALE DEVELOPMENT TOWARD THE
MEASUREMENT OF POLICE USE OF NON-DEADLY PHYSICAL FORCE

by

Michael John Antal

An abstract of a Dissertation
Submitted to the Graduate Studies Office
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

May 2007
ABSTRACT

AGGRESSION IN POLICING: UTILIZING SCALE DEVELOPMENT TOWARD THE MEASUREMENT OF POLICE USE OF NON-DEADLY PHYSICAL FORCE

By Michael John Antal

May 2007

The purpose of the present study was to construct a behavioral rating/observational scale for the measurement of police use of non-deadly physical force. Previously published scales for the measurement of police use of non-deadly physical force are flawed. One, previous scales are based on an assessment of the “properness” of police use of force currently used by law enforcement, thus lacking a foundation in theory. Two, previous scales lack psychometric properties (e.g., validity, internal consistency, and reliability). The goal of the present study was to use well-established psychometric techniques to develop a suitable instrument for the idiographic measurement of police non-deadly physical force. Subject Matter Experts evaluated the clarity, relevancy, and feasibility of 71 theoretically based items and rated the force used by officers as depicted in 14 videos. Limitations regarding the representation of behaviors depicted in videos prohibited further scale development. Specifically, videos depicting police non-deadly physical force that was either inadequate or excessive were not sufficiently available to administer items to a developmental sample as proposed. Thus, results from this study represent an investigation into the feasibility for developing a behavior rating scale for police non-deadly physical force. This discussion includes analyses of statistical and procedural
flaws, as well as recommendations for future improvements to adequately capture and measure the behavioral qualities of non-deadly physical force in policing.
ACKNOWLEDGMENTS

I would like to thank Mr. Don Marsh, of In the Line of Duty, for providing numerous copyrighted videos to use in this project. Thanks to my dissertation director, Dr. Dennis Stevens, and the other committee members, Dr. Philip Carlan, Dr. John Lewis, and Professor Lisa Nored for their contributions. Special thanks to my colleague and friend, Dr. Jennifer Hendry, for her thoughtful input and support throughout this project. Words alone cannot express the thanks I owe to my wife, Dr. Holly Antal, for her unending patience and support on this project and throughout the turmoil that life has offered over the past few years.
CHAPTER I
INTRODUCTION

Police use force, whether verbal or physical, as a means to accomplish their daily tasks. Central to the police officer's role is the social endorsement granting him/her the permission, within set guidelines, to use physical force to control societal members. Some would argue that this authorization is the foremost characteristic that sets police officers apart from the remainder of society (e.g., Adams, 1999a; Bittner, 1970; Klockars, 1996). Police operate in paradoxical situations, where violence often becomes a necessity for resolving situations that are escalating towards violence or for preventing violent situations from intensifying (Sherman, 1980a). Here, the term “violence” refers to physical confrontation, as opposed to the use of the term within the aggression literature where it includes the intent to harm (Anderson & Bushman, 2002; Bowers, 1999; Geen, 2001).

A police officer's use of violence may, at times, be in excess of what is necessary to manage a citizen's behavior. The paradigm of police use of force became of interest to this author during an early career in law enforcement. Personal observations of police behavior led the author to the anecdotal development of potential precipitating or dispositional factors (e.g., apparent arousal combined with an oppositional suspect) that may be associated with an un-justified police use of force response. In this author's law enforcement experience, it often appeared that questionable police use of force situations occurred subsequent to some other arousal heightening stimulus (i.e. foot/car chase, high-speed driving, fight, search warrant, dynamic calls-for-service, etc). Media depictions of
similar questionable police use of force situations served to confirm these anecdotally based associations.

This author's later search for theoretical support for these associations led to a line of published research testing the association between various arousal heightening variables in policing and the likelihood to discharge a firearm in simulation exercises (Barton, J., Vrij, A., & Bull, R., 2000; Vrij, A., & Dingemans, L., 1996; Vrij, A., Van der Steen, J., & Koppelaar, L., 1994; Vrij, A., Van Der Steen, J., & Koppelaar, L. 1995). Results from these studies indicated that various stimulus invoking factors (e.g. high-speed driving, physical effort, temperature, and field independence) are correlated with negative affect, measured by the introspective questioning of officers and police aggression (Barton, J., Vrij, A., & Bull, R., 2000; Vrij, A., & Dingemans, L., 1996; Vrij, A., Van der Steen, J., & Koppelaar, L., 1994; Vrij, A., Van Der Steen, J., & Koppelaar, L. 1995). Many of these studies are based on excitation transfer theory, which attributes aggressive behavior to the misattribution of previous unrecognized stimulus to the most recent and salient aggressive primer (Zillman, 1971). However, aggression in these studies was measured by the inclination to shoot in simulated situations (i.e. simulated firearms training apparatus). Since police use firearms far less than they use non-deadly physical force (National Institute of Justice Research Report, 1999, Pate & Fridell, 1995), hypotheses regarding the relationship between various arousal eliciting factors (i.e. high-speed driving, physical effort, temperature, frustration, etc.) and police aggression would be better tested using dependent variables that capture police use of non-deadly physical force.
Statement of the Problem

Given this theoretical framework, the author set out to locate suitable observational measures that reliably capture and quantify police use of non-deadly physical force. While several potential measures of this nature were located, none seemed suitable for empirical inquiry into the factors anecdotally associated with police use of force. Rather, existing measures of police use of non-deadly physical force: 1) lack empirical derivation; 2) provide no estimates of reliability, and 3) depend primarily on a variation of the force/resistance matrix utilized by most police departments, an assessment tool for the properness of police use of non-deadly physical force. Measures that assess the properness of police use of force create the potential for unnecessary bias. Rather, measures should reflect unbiased ratings of various underlying factors associated with police use of force. Conclusions derived from empirical inquiry should utilize valid and reliable measures that are empirically derived, or they will lead to flawed associations.

This author’s review of relevant aggression and law enforcement literature highlighted the paucity of empirical data regarding police use of force, particularly non-deadly physical force (Adams, 1999b; Pate, & Fridell, 1995; Terrill, 2001; Worden, 1996). Until recently, the predominant portion of the literature about police use of non-deadly physical force utilized nomothetic measures (i.e., Bayley & Garofalo, 1989; Friedrich, 1980; Fyfe, 1988; Klinger, 1995; Reiss, 1968; and Worden, 1996) focusing on prevalence and leaving a notable gap in our knowledge regarding individual level variables. In the last few years, researchers have introduced more practical and useful instruments that are idiographic in nature, focusing on the individual encounter.
However, these instruments are limited in their abilities to capture variability within police use of non-deadly physical force as a dependent variable.

As a consequence of their novelty, these new measures of force do not meet statistical standards of reliability (i.e., equivalent forms, test-retest, etc). There are, however, properly developed and reliable measures of aggression with an idiographic focus in the psychology literature. Since excessive police force is intrinsically aggressive, research on the subject should benefit from the psychometrically derived instruments to measure aggression. However, this is not the case.

The inability of previous research to accurately operationalize and measure the concept of a “justified police response” appears to be confounded by a host of situational factors which vary in each police encounter (i.e., officer’s experience, environment, suspect’s attitude, officer’s and suspect’s perceptions about the incident and situational circumstances, etc.). Furthermore, practitioners (e.g., police, administrators) often have a difficult time encapsulating the unique factors of a non-justified police response (Bittner, 1970; Klockars, 1996). Without a standardized approach to capturing various situational and dispositional factors known to be associated with police use of force, practitioners are making individually-based biased assumptions about contributing causal and relational factors. Overall, statistical as well as practical limitations appear to have hindered previous attempts to observationally capture and empirically assess use of force in policing.

Purpose of the Study

Thus, the summation of personal anecdotal observations, review of behavioral theories, and analysis of existing measures of police use of force, led this author to design
and conduct the present study. The goal of the present study was to utilize theories of aggression that are applicable in policing toward the planning and development of an empirically-derived observational scale for the use of non-deadly physical force in policing.

Definitions

The following is a list of definitions of terms used throughout this manuscript:

Affect: Feeling or emotion ("Affect," n.d.).

Aggression: Any behavior directed toward another individual that is carried out with the proximate (immediate) intent to cause harm (Anderson & Bushman, 2002).

Anger: A strong emotion; a feeling that is oriented toward some real or supposed grievance (Anderson & Huesmann, 2003; Geen, 2001; Krakowski, 2003).

Boldness: The trait of being willing to undertake things that involve risk or danger ("Boldness," n.d.).

Construct: The underlying phenomenon, or latent variable of interest (DeVellis, 1991).

Construct validity (sometimes called factorial validity): The degree to which the items of a scale comprise the underlying concepts of the target construct (Hinkin, 1995).

Content validity (also called face validity): The degree to which a scale measures the target construct (Hinkin, 1995).

Criterion-related validity (also called concurrent validity): An assessment of the degree to which the scale relates to other independent measures of the target construct (Hinkin, 1995).

Deadly force: Force that is likely to cause death or great bodily harm (Gould & Gould,
Experience: The accumulation of knowledge or skill that results from direct participation in events or activities ("Experience," n.d.).

Fear: An emotion experienced in anticipation of some specific pain or danger (usually accompanied by a desire to flee or fight) ("Fear," n.d.).

Frustration: The blockage of goal-directed behavior (Anderson & Huseman, 2003; Dollard et al., 1939).

Idiographic: Research strategies that place considerably more emphasis on the individual (Grice, Jackson, & McDaniel, 2006).

Impulsivity: The failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, DSM-IV).

Internal consistency: A type of construct/convergent validity that measures the degree to which items correlate to the score representing the target construct (DeVellis, 1991).


Malice: A malevolent desire for revenge; feeling a need to see others suffer ("Malice," n.d.).

Negativism: Characterized by skepticism and a disagreeable tendency to deny or oppose or resist suggestions or commands ("Negativism," n.d.).
Nomothetic: Aggregate methods of data collection and analysis (Grice, Jackson, & McDaniel, 2006).

Non-conformity: Failure to conform to accepted standards of behavior (“Non-conformity,” n.d.).

Operationalize: To define a concept or variable so that it can be measured or expressed quantitatively (“Operationalize,” n.d.).

Physical aggression: A physical act that is meant to harm another individual (Anderson & Bushman, 2002).

Police use of force: An officer, sworn to enforce the law, utilizes some degree of his/her authority (whether physical or verbal) in an official capacity to manage citizen behavior.

Police use of non-deadly physical force: An officer, sworn to enforce the law, utilizes some degree of physical interaction to manage citizen behavior.

Provocation: Any behavior that interferes with the attainment of a goal (Anderson & Huseman, 2003).

Scale: A group of items meant to demonstrate levels of variables theoretically related to a construct (DeVellis, 1991).

Scale reliability: The proportion of variance attributable to the true score of the latent variable (DeVellis, 1991).

Self-control: Controlling your impulses; the trait of resolutely controlling your own behavior (“Self-control,” n.d.).

Training: Activity leading to skilled behavior (“Training,” n.d.).
Theory: An organized system of accepted knowledge that applies in a variety of circumstances to explain a specific set of phenomena ("Theory," n.d.).

Threat: Something that is a source of danger ("Threat," n.d.).

Vengefulness: A malevolent desire for revenge; feeling a need to see others suffer ("Vengefulness," n.d.).


Limitations

Two limitations threatened the validity of the study. One, the study lacked the appropriate number of videos within each use of force category. The author originally proposed the use of three videos in each of the categories; excessive, adequate, and inadequate use of force. A total of eight screened and rated videos met criteria for assignment to the adequate category. However, once screened and rated, only two videos met criteria for assignment to the inadequate category, and one video met criteria for inclusion in the excessive category. It is likely that the author's limited access to videos contributed to this problem. While the author screened a total of 350 videos, it is likely that videos depicting inadequate as well as excessive force are not readily available to the public. This limitation inevitably caused the discontinuation of the study as proposed.

Two, the order in which the materials were presented to subject matter experts (SMEs) threatened the validity of the study. To avoid a maturation effect, the researcher purposely asked SMEs to evaluate items as part of the content validity study before evaluating videos for assignment to categories. However, this may have unintentionally caused a testing effect, whereby SMEs were primed and therefore considered some of the
underlying factors of aggression and police use of force in their evaluations of the use of force depicted in videos.

Delimitations

Overall, two elements limited the potential for generalization of this study. One, the present study utilized a convenience sample (rather than a true or random sample) of subject matter experts (SMEs). The author individually developed and contacted a list of potential SMEs, based upon subjective criteria. Present results are based upon those subject matter experts who responded to the solicitation and completed the study, therefore limiting generalizability to the entire population of SMEs in the area of police use of force. A total of 34 potential SMEs were contacted via electronic mail and (or) in person and asked to assist with rating videos and evaluating potential questionnaire items (the content validity study). Despite multiple attempts, 15 of the potential SMEs did not respond. Of the remaining 19 potential SMEs who did respond, five completed the study as requested, two completed a portion of the requested materials, four asked for more information and agreed to assist, but did not follow through, four responded and declined to assist due to time constraints, three responded and declined to complete the research, citing their lack of credentials as SMEs in this area of research, and one declined to assist without explanation. Therefore, selection bias delimited the generalizability of police use of force subject matter experts.

Two, bias within the selection of videos depicting various levels of non-deadly physical force created limitations in generalizability. Videos depicting real police–citizen encounters (not staged or otherwise scripted) were selected from various clips available in the news media, police training academies/institutes, police agencies, television
programs (i.e. "Cops"), commercially available video tapes, and other public/private sources. A large portion of the videos screened came from private collections (e.g. police trainers). Therefore, videos selected for screening represent a convenience sample (rather than a true or random sample) of the complete population of videos depicting police use of non-deadly physical force. It is likely that videos depicting police use of force that is judged to be excessive or inadequate exist, but are not as conveniently accessed and therefore are not adequately represented in the initial pool of videos screened.

Approximately 350 video clips were screened for encounters that; 1) depicted some form of police use of force (mostly arrest scenarios), 2) did not depict the use of a handgun or force that resulted in death, 3) depicted all or most of the encounter from initial contact to the conclusion of the encounter (in some cases an arrest), and 4) included all or most of the audio with moderate clarity. This initial screening criteria was followed by further screening that eliminated videos with; 1) too many officers involved in a physical confrontation, 2) undesirable camera angles that limited the capture of behavior, 3) editing that cut out critical interactions, and 4) audio overlay (i.e. narrating) that occurred during critical interactions. Once screened, 14 videos depicting police use of force encounters were selected for ratings by subject matter experts (SMEs). Thus, this selection process was not independent of the researcher. While SMEs may have provided ratings of videos independent of the researcher, they were not exposed to the screening process, and did not have access to a true sample of the entire population of videos depicting police use of non-deadly physical force. It is feasible that videos that were not selected for rating by subject matter experts might have been well-suited for inclusion in
the excessive and/or inadequate categories. Therefore, selection bias delimited the
generalizability of videos depicting police use of non-deadly physical force.
CHAPTER II
LITERATURE REVIEW
Scale Development

Since the purpose of this study was the development of a scale for the measurement of police non-deadly physical force, this section will define “scale” and discuss scale development. A scale is a group of items meant to demonstrate levels of variables theoretically related to a construct (DeVellis, 1991). The goal of scale development is to develop a valid and reliable measure of a construct (Clark & Watson, 1995). Scales should demonstrate content validity, criterion-related validity, construct validity, and internal consistency (Hinkin, 1995). Content validity (also called face validity) is the degree to which a scale measures the target construct. Criterion-related validity (also called concurrent validity) is an assessment of the degree to which the scale relates to other independent measures of the target construct. Construct validity (sometimes called factorial validity) is the degree to which the items of a scale comprise the underlying concepts of the target construct. Internal consistency is a type of construct/convergent validity that measures the degree to which items correlate to the score representing the target construct (DeVellis, 1991; Clark & Watson, 1995; Hinkin, 1995; Streiner & Norman, 1995; Whitley, 1996).

Scales are generally developed in three different stages, including; 1) item development, 2) scale development, and 3) scale evaluation (Hinkin, 1995). DeVellis (1991), specifically provides the following 8 steps to scale development; 1) “Determine clearly what it is you want to measure” (p. 51), 2) “Generate an item pool” (p. 54), 3) “Determine the format for measurement” (p. 60), 4) “Have the item pool reviewed by
Before a scale is developed, the target construct should be clearly defined (Clark & Watson, 1995). In the current study, police use of non-deadly physical force is the target construct. For the purposes of this study, police use of non-deadly force is defined as an officer, sworn to enforce the law, utilizes some degree of physical interaction to manage citizen behavior. Item development is the first step in construct validation of the scale. Item development can be inductive, or deductive. Inductive item development depends on the grouping or classification of items and is not dependent on previous theory. Conversely, deductive item development is the logical partitioning or classification of items derived from a thorough review of the theory underlying the target construct. Since a deductive approach to item development was utilized in the current study, the next few sections of this literature review will encompass the theoretical background of police use of non-deadly physical force.

**Aggression**

*Aggression as Related to Police Use of Force*

The concept of aggression is related to many of the terms utilized to describe and define police use of force. First, and plausibly the most apparent relationship example, is the use of the term “police aggression” to describe police use of force that exceeds the amount of force necessary to meet suspect resistance (Kirkham, 1963). Examples are found throughout the aggression and police literature. One, the definition of police use of force incorporates the National Institute of Science’s definition of aggression (Terrill,
Two, subtypes of aggression and police force are interchangeable (i.e., verbal and physical aggression/force). Finally, aggression, similar to police force, can be described as either instrumental (meeting some legitimate goal) or hostile (impulsive and driven by anger). Given the extensive overlap of police force and aggression, it is important to review definitions of aggression, types of aggression, theories of aggression, and mechanisms of measuring aggression, to understand their contributions to our knowledge about police use of non-deadly physical force.

**Definition of Aggression**

The literature provides numerous definitions of aggression (Geen, 2001) and aggressive behavior (Shah, Chiu, & Ames, 1997), which are generally defined using behavioral, personality, emotional, and intentional elements of both the aggressor and the victim (Edmunds & Kendrick, 1980). Aggression is defined generally as “any behavior directed toward another individual that is carried out with the proximate (immediate) intent to cause harm” (Anderson & Bushman, 2002, p. 28). In addition, the perpetrator must believe that the behavior will harm the target, and that the target is motivated to avoid the behavior (Berkowitz, 1993; Anderson & Bushman, 2002; Geen, 2001).

Although broad definitions are instrumental in understanding aggression, more specific knowledge is gained by investigating the subtypes of aggressive behavior.

**Types of Aggression**

In the aggression literature, violence is categorized as a type of aggression that has a goal of extreme harm (Bowers, 1999). However, it is important to note that all violence is aggression, but not all aggression is violent (Anderson & Bushman, 2002; Geen, 2001). Aggression can be hostile or instrumental, and physical or verbal. Hostile
aggression (also called affective, impulsive, or reactive aggression) is impulsive, thoughtless (unplanned), driven by anger, a result of some perceived provocation, and has the ultimate goal of harm to the target (Anderson & Bushman, 2002). Therefore, instrumental aggression involves a premeditated means of obtaining some goal apart from any intent to harm. The distinction between instrumental and hostile aggression is particularly important in policing because employing aggression to accomplish a task for the greater goal of justice is recognized as legitimate to the police function. Hostile aggression in policing employs aggression under the cloak of authority with the intent of harming the target. As Kirker et al. (2000) note, “Intent is the defining characteristic of aggressive behavior that distinguishes aggressive acts from assertive acts” (p. 373). Thus, the distinction between instrumental and hostile aggression in policing speaks to the distinction between police force that is assertive (or necessary) and that which is unnecessarily excessive. Understanding these basic definitional elements of aggression is necessary for reviewing various theoretical explanations of aggression.

Theories of Aggression

The early theories of aggression that apply to police use of non-deadly physical force can be divided into five different categories, including: cognitive neoassociation theory, social learning theory, script theory, excitation transfer theory, and social interaction theory. These early theories have been labeled as domain-limited theories (Anderson & Bushman, 2002), as they explain aggression that is limited to hostile or instrumental situations. More recently, theorists have developed a general aggression model (GAM) in an attempt to integrate several previous theories of aggression into one
parsimonious unified theory (Anderson & Bushman, 2002). Each theoretical category of aggression is reviewed briefly below.

Cognitive neoassociation theory assumes that aggressive thoughts, emotions, and behavioral tendencies are linked in memory (Collins & Loftus, 1975). Cues present during an aversive event become associated with the event and with the cognitive and emotional responses triggered by the event. Associations are developed from concepts that are activated simultaneously. When a concept is activated, other related concepts become activated as well (Anderson & Bushman, 2002). For instance, Berkowitz (1989, 1990, 1993) proposed that aversive events such as frustrations, provocations, loud noises, uncomfortable temperatures and unpleasant odors produce negative affect, which is associated with previous experiences and stimulates thoughts, memories, expressive motor reactions, and physiological responses. These responses include both fight and flight tendencies, which evoke feelings of anger (fight) or fear (flight) (Anderson & Bushman, 2002).

Early versions of cognitive neoassociation theory include Dollard et al’s (1939) frustration-aggression hypothesis. According to the frustration-aggression hypothesis, frustration always precedes aggression by creating a “readiness to aggress” condition (Geen, 2001). Frustrating experiences in policing may include verbally or physically resistant suspects, loud noises such as sirens, or uncomfortable temperatures such as the body heat created and retained by a ballistic vest and a dark, polyester uniform. The abundance of these frustrating experiences in policing would suggest that officers should be in a constant readiness to aggress condition. Thus, within police use of non-deadly
physical force situations, cognitive neoassociation theory may explain incidents in which officers become excessively aggressive toward a suspect.

Social learning theory posits that people learn behaviors through either personal or vicarious experiences (Anderson & Bushman, 2002). Accordingly, aggressive behaviors are acquired through an observational learning process and maintained through reinforcement (Geen, 2001). Social learning theory also recognizes biological factors as contributing to the causes of aggressive behavior. Genetics create the potential for aggression, but learning facilitates the specifics of how, when and where people aggress (Geen, 2001; Bandura, 1983).

A more refined and specific form of social learning theory is called script theory. Scripts are highly associated concepts that become paths through which behaviors arise. A script is formed when situations leading to behaviors are observed. Items linked together through scripts become unitary concepts in memory. Rehearsing these scripts causes accessibility strength (Anderson & Buchman, 2002). An officer may repeatedly observe situational demonstrations by instructors in an academy setting that model the application of inappropriate force. Thus, social learning or script theory may explain how the use of inappropriate force techniques is carried over from classroom demonstrations to interactions with suspects.

Excitation transfer theory is based on the assumption that autonomic responses to emotional stimuli are similar, regardless of their source. This similarity prevents the individual from differentiating which response is generated from which stimulus, thus allowing the merging of the responses to the two emotions. The merging of these two responses results in the amplification of the overall emotional experience and behaviors.
toward the most recent emotion-inducing stimulus. Verbal responses to the amplified arousal provide a label for the emotions (Konecni, 1975; Zillman & Bryant, 1974). The verbal label is formed by attributing arousal to the most obvious and recent cues in the surrounding environment when elevations of excitation are experienced (Zillman, 1983). If an individual is aware of excitation cues from the initial stimulus when they encounter the subsequent stimulus, the transfer will not occur (Cantor, Zillman, & Bryant, 1975; Zillman, Johnson, & Day, 1974). However, if individuals are unaware of the initial stimulus, they will fail to properly identify the source of the physiological arousal and they will likely experience further heightening of arousal attributions from the merging of the autonomic responses (Zillman, 1971). A police officer may experience heightened arousal due to the tone of a dispatcher’s voice when dispatching a call for service. The officer may also encounter a verbally resistive suspect upon responding to the call for service. Subsequently, the officer may over aggress due to the merging of arousal from the dispatcher and from the resistant suspect, thus attributing the arousal in whole to the resistive subject. Therefore, excitation transfer theory may predict the conditions under which arousal from a previous stimulus will intensify arousal due to subsequent stimulus and result in police aggression.

Social interaction theory explains aggressive behavior in terms of social influence through coercion to obtain some higher level goal (Tedeschi & Felson, 1994). Coercive actions can be used to obtain something of value, to exact retributive justice, or to establish desirable social or self-identities (Anderson & Bushman, 2002). Bushman and Baumeister (1998) recently cited social interaction theory to explain the relationship between aggression, narcissism, and threatened egotism. Police officers are often
questioned and/or threatened after requesting or directing action by a suspect. The officer might needlessly aggress against the suspect in an attempt to protect his/her ego or image. Thus, social interaction theory may explain police aggression as the means to obtain some higher level goal, such as retributive justice, or the protection of an officer's threatened ego.

Lastly, General Aggression Model (GAM) provides a unified theory of aggression that ties together, and employs, the earlier domain-specific theories (Anderson & Bushman, 2002). These theorists describe the key features of GAM as including “ideas that knowledge structures (a) develop out of experience; (b) influence perception at multiple levels, from basic visual patterns to complex behavioral sequences; (c) can become automatized with use; (d) can contain (or are linked to) affective states, behavioral programs, and beliefs; and (e) are used to guide peoples interpretations and behavioral responses to their social (and physical) environment” (Anderson & Bushman, 2002, p. 33). The central concept in GAM is the “episode”, involving a person in one cycle of an ongoing social interaction. The episode comprises “(a) person and situation inputs; (b) cognitive, affective, and arousal routes through which these input variables have their impact; and (c) outcomes of the underlying appraisal and decision processes” (Anderson & Bushman, 2002, p. 34). Thus, by recognizing the different domains through which aggression is affected, Anderson & Bushman (2002) tie together previous domain-specific theories of aggression to develop a more comprehensive and unified theory. A police officer may be frustrated, and subsequently aggress, due to an uncomfortable uniform. The same officer may receive his next call for service and experience heightened arousal due to the tone of the dispatcher’s voice. These precipitating factors
may contribute to the officer's use of non-deadly physical force with the following suspect, who could further escalate the officer's tendency to aggress by verbally resisting the officer. Thus, GAM employs several existing theories of aggression to explain elements within an officer's behavioral sequence that may result in the application of excessive force.

*Measuring Aggression*

Human aggression encompasses traits that are commonly measured in the broader category of human behavior. Whitley (1996) refers to three "modalities of measurement" (p. 119) that are the most common in measuring a person's traits. First, self-report measures, or introspective tests, allow people to disclose some aspect of their cognitive, affective, or kinesthetic state. Second, behavioral measures allow researchers to observe and record what people do. Third, physiological measures allow researchers to record biological responses to stimuli (Whitley, 1996). Because aggression is best described both by its expressed behavior and by its inner experienced emotions (Palmsteirma & Wistedt, 2000), the measurement modalities most common to human aggression are behavioral and self-report measures (Edmunds & Kendrick, 1980). However, physiological measures may be used to quantify the states associated with aggression (Edmunds & Kendrick, 1980; Whitley, 1996; Barton et al., 2000).

The measurement methods specific to human aggression include projective techniques, self-reports, the delivery of electric shock, and behavioral rating scales (Edmunds & Kendrick, 1980). Projective tests are not considered behavioral or self-report measures. However, they are common to the measurement of human aggression in the clinical setting. Projective tests are designed to reveal the underlying drives, motives,
and beliefs that may be hidden by an individual’s defense mechanisms. The underlying rationale of projective tests is that subjects project aspects of their personality when interpreting a stimulus. Projective tests common to the measurement of aggression include the Rorschach Inkblot Test, Rosenzwieg Picture Frustration Test, and Thematic Apperception Test (Edmunds & Kendrick, 1980). Although popular, most projective tests are controversial and are not considered highly valid or reliable measures of personality states or traits (Anastasi, 1982). Thus, projective tests are usually utilized in combination with other measures (e.g., intellectual testing, behavioral measures).

Self-report measures are considered the most practical means of assessing personality characteristics (Edmunds & Kendrick, 1980). Self-reports ask people to assess some aspect of themselves, including; inner states, beliefs, interpretations, and thought processes (Whitley, 1996). A self-report measure common to the assessment of human aggression is the Buss-Durkee Inventory (Buss & Durkee, 1957). The Buss Durkee Inventory consists of seven subscales, five of which (assault, indirect aggression, irritability, negativism, and verbal aggression) were designed to measure aggressiveness, and two of which (resentment and suspicion) were designed to measure hostility (Edmunds & Kendrick, 1980).

The advantages of self-report measures are: 1) they are the most direct way to obtain information about a person; 2) self-report data is easy to collect; 3) they are relatively inexpensive; and 4) self-report measures do not require training of observers or physiological equipment operators. The disadvantages of self-report measures are: 1) they can be inaccurate due to recall difficulties or response bias; and 2) they can be inaccurate due to varying verbal skills of respondents. Additionally, as measures of
human aggression, self-reports yield high convergent validity scores, but often do not correlate well with other types of measures of aggression, indicating that they may not be measuring the same construct as other types of measures (Edmunds & Kendrick, 1980).

Behavioral measures record a person’s actions, as opposed to a person’s perception of their actions (Whitley, 1996). Behavioral measures are often utilized to capture an “unbiased” assessment of a person’s behavior, or to provide information regarding the assessor’s perception of the person’s behavior. The use of multiple observers (e.g., teacher, parent, caregiver) is often helpful to increase validity of an assessment, or detect bias in individual raters.

The types of behavioral measures specific to the study of human aggression are electric shock and various behavioral rating scales. The use of electric shock became popularized by the Milgram (1963) study of obedience. In Milgram’s study, subjects assumed the role of a teacher and were instructed to deliver shocks of increasing intensity when confederates provided incorrect answers. The difference between the use of electric shock by Milgram and the use of electric shock in studies of aggression is that in studies of aggression subjects chose the intensity, duration, or quantity of shocks (Edmunds & Kendrick, 1980). The advantages of the use of electric shock in studies of aggression are: 1) the concept of aggression is accurately operationalized; 2) measures taken are immediately and objectively quantified; and 3) subjects can aggress without concern for ethics or counterattack. (Buss, 1961; Edmunds & Kendrick, 1980). The disadvantages of electric shock as a measure of aggression are: 1) it is time consuming since subjects must be tested separately and individually; 2) it can be expensive since it requires the use of a lab with special equipment; and 3) the method lacks external validity.
While aggression in general is measured effectively by the use of projective tests, self-reports, and electric shock, police aggression does not occur in a controlled situation and therefore is limited to observational methods of measurement. Similarly, aggression specific to various other situations cannot be replicated in the laboratory. However, unlike the study of police aggression, psychologists have developed measures specific to these situations to allow the measurement of aggression as it occurs outside of the laboratory. The observation and rating of behaviors is commonly utilized to measure verbal and physical aggression with various populations in a variety of settings and by observers in various roles. For example, observers rate the aggression of children (Achenbach, 1978; Goyette et al., 1978; Abikoff, Gittelman, & Klein, 1980; Pfeffer et al., 1983; Yudofsky et al., 1986; Brown et al., 1996; Epkins & Meyers, 1994), bar patrons (Graham, West, & Wells, 2000), psychiatric patients (Gothelf, Apter, & Van Praag, 1997), the elderly (Shah, Chiu, & Ames, 1997; Patel, & Hope, 1992), Alzheimer’s disease patients (Ryden, 1988; Welsh, Corrigan, & Scott, 1996), and athletes (Kirker, Tanenbaum, & Mattson, 2000). Such observations occur in natural settings such as homes, playgrounds, schools, hospitals, bars, nursing homes, and athletic events.

Some of the more reliable and useful observational measures of aggressive incidents include; the Overt Aggression Scale (OAS) (Yudofsky et al., 1986), the Modified - OAS (M-OAS) (Coccaro et al., 1991), the Rating Scale for Aggressive Behavior in the Elderly (RAGE) (Patel & Hope, 1992), the Staff Observation Aggression Scale (SOAS) (Palmsteirna & Wistedt, 1987), and the Staff Observation Aggression Scale-Revised (SOAS-R) (Nijman et al., 1999). The OAS, considered the grandfather of all research tools in violent incidents (Bowers, 1999), uses incident-based recording by
nurses immediately after a violent incident and includes severity ratings within the categories of verbal aggression, physical aggression, property damage, and self-harm. A modified version of the OAS, the M-OAS, is used by clinicians to assess the efficacy of psychotropic medications for outpatients and contains four aggression items: Verbal Assault, Assault Against Objects, Assault Against Self, and Assault Against Others. The RAGE measures the quantity and severity of aggressive behavior in a psycho-geriatric population on a four-point scale (0-3) for each of the 21 items in addition to a total score. The Staff Observation Aggression Scale (SOAS) measures individual episodes of aggressive behavior for psychiatric inpatients and provides a total score (0-12) and sub-scores for the means, aims, and results of an individual episode of aggressive behavior on a five point scale (0-4). The Staff Observation Aggression Scale-Revised (SOAS-R) includes a new scoring system to objectify the severity of the violent episode. Thus, aggression scales are currently available for use with a variety of populations and provide measurement of different forms of aggression (e.g., verbal, physical).

The aggression measures discussed above demonstrate good psychometric properties (i.e., inter-rater reliability and internal consistency) (Bowers, 1999; Endicott, Tracy, Burt, Olson, & Coccaro, 2002; Shah, Chiu, & Ames, 1997). Furthermore, they provide researchers and clinicians the ability to assess and compare the severity of individual violent incidents. A common weakness among these measures of violent incidents includes the conflation of severity with outcome in terms of injury (Bowers, 1999). Additional weaknesses among these measures, as with other behavior rating forms, is the presence of rater subjectivity in assessing the actions of another person, as well as the reactivity of the person being rated. However, by demonstrating acceptable
psychometric properties, these measures have minimized the effects of subjective ratings and reactive subjects.

The primary distinction between normal/citizen aggression and police aggression is that some police aggression is sanctioned by the state and recognized as instrumental to meet the goals of the state. In other words, aggression is tolerated to meet the goals of the state. However, the distinction provides little assistance with the measurement of police force. It is therefore important to develop a means to observe and measure aggression as it occurs in policing, rather than categorize according to the appropriateness of the response, which is the current standard in measures of police use of non-deadly physical force.

Police Use of Force

The use of force within policing is an important issue for administrators, police officers, as well as citizens. However, difficulties arise when individuals or organizations attempt to define and subsequently create policy or laws regarding excessive use of force. One problem is the varied definitions of force existing across jurisdictions, states, and agencies. Another difficulty is the objective categorization and determination of excessive versus acceptable levels of force. These difficult decisions are often driven by policy and the law, which evolve across time. Thus, the definition, categorization, and determination of excessive force in policing are not static or stable issues, but rather a complex system that is routinely questioned and modified within our criminal and civil system. This ever-changing system may also impact the empirical examination of police use of force, and therefore each of the above issues will be addressed below.
Defining Police Use of Force

One of the most basic problems with existing research on the police use of force is the lack of a universal definition of police use of force and the use of excessive force (Alpert & Smith, 1994; Geller & Toch, 1995; McEwen, 1996; Terrill, 2001). For example, Kania and Mackey (1977) define force as “the exertion of power to compel or restrain the behavior of others” (p.29). Terrill (2001) defines force as acts that threaten or inflict physical harm on citizens, a definition that is based on the National Academy of Sciences’ definition of violence. Both of these definitions are deliberately broad, capturing all police behavior that compels or restrain citizens and may threaten or inflict harm on citizens. Given these definitions, a significant proportion of interactions between officers and citizens involve force.

Generally, police use of force can be divided into three categories: first, non-physical force, which includes threats or acts that compel compliant behavior; second, physical force, which incorporates some type of physical contact; and third, deadly force, which refers to acts that threaten or inflict physical harm on citizens and are likely to have lethal consequences (i.e., the presentation or use of a handgun) (Adams, 1999a). Moving beyond the simple idea of force to descriptions or categories of force, the definitional process becomes even more vague. For instance, police use of force is described and defined by researchers and policy makers by using a variety of terms, including; “police aggression,” “improper force,” “brutality,” “extralegal force,” “abusive force,” “illegitimate force,” “excessive force,” and “unnecessary force,” most of which represent some degree of indiscrétion by the police use of force (Adams, 1999a).
The description of force as excessive is one that interests researchers and practitioners alike. However, there is little agreement regarding the amount of force that is represented by the description “excessive.” This is most likely due to confusion in defining excessive force. For instance, the term “excessive force” is defined by Klockars (1996) as “the use of more force than a highly skilled police officer would find necessary to use in that particular situation” (p. 8). Adams (1999a) defines excessive force as force that exceeds administratively, professionally, or legally permissible force. Whereas Griffin and Bernard (2003) define excessive force as “the amount of force beyond that which is necessary to affect a legitimate police function.” (p. 5). McEwen (1996) defines excessive force simply as too much force in a given incident.

Fyfe (1995) divides excessive force into two types; extralegal violence, and unnecessary force. Extralegal violence, or brutality, is described as “the willful and wrongful use of force by officers who knowingly exceed the bounds of their office.” (p. 165). Unnecessary force “occurs when well-meaning officers prove incapable of dealing with the situations they encounter without needless or too hasty resort to force.” (Fyfe, 1986, p. 207). Fyfe’s distinction between these two types of excessive force is found in the intent of the officer.

Perhaps the most comprehensive definition of excessive force is provided by Geller and Toch (1995), who divide the subject into sub-problems, including:

- any force when none is needed;
- more force than is needed;
- any force or a level of force continuing after the necessity for it has ended;
- knowingly wrongful uses of force;
- well-intentioned mistakes that result in undesired uses of force;
- departmental constraints that needlessly put officers in the position of using more force – and/or using it more often – than otherwise would occur (e.g., problems with training, supervision, deployment, assignment, practices, equipment, procedures, and policies precluding use of certain tactics or tools);
- frequent use of force by particular officers, particular units or departments, even if each instance seems justifiable (p. 292).

Whereas other theorists address excessive force with a focus on the individual encounter, they lose sight of systemic excessive force. Geller and Toch (1995) recognize that an officer’s individual encounter with a suspect may not be deemed excessively aggressive, yet across these encounters (i.e., by one or more officers), patterns emerge that suggest the application of excessive force. Although this is a fairly comprehensive definition, there remains a great deal of inference to be made by someone judging the behavior of a particular officer and the situation in which excessive force has been used.

For the purposes of the present study, two definitions, based on this review, were developed. First, police use of force is defined as an officer, sworn to enforce the law, utilizes some degree of his/her authority (whether physical or verbal) in an official capacity to manage citizen behavior. Second, police use of non-deadly physical force is defined as an officer, sworn to enforce the law, utilizes some degree of physical interaction to manage citizen behavior. Defining police use of force and police use of non-deadly physical force in this manner provides for the development of a scale for the measurement of these concepts.
Administrative and Legal Aspects of Police Use of Force

Administrative policy and law do little to reduce the uncertainty of labeling the force used by police as excessive. Police are generally guided in their use of force decisions by their own departments’ policies and procedures. Unfortunately, individual departments have little legal guidance in the development of these policies and procedures, and much of what is written is done so without a clear objective standard (Jacobi, 2000). For instance, one of the most influential policies concerning police use of force is that developed by the International Association of Chiefs of Police (IACP). This model policy states in part, “Police officers shall use only that force that is reasonably necessary to...protect themselves or another from physical harm, or to restrain or subdue a resistant individual; or to bring an unlawful situation safely and effectively under control.” (IACP, 1993). Most departments use the same subjective “reasonable” standard as the guiding policy (Jacobi, 2000).

Similarly, officers lack clear and objective guidance through criminal law. The federal criminal statute covering an officer’s use of improper or excessive force is Title 18 USC §§ 242. This statute deals specifically with deprivation of individual rights under color of law. The statute states in part:

Whoever, under color of any law, statute, ordinance, regulation, or custom, willfully subjects any person...to the deprivation of any rights, privileges, or immunities secured or protected by the Constitution or laws of the United States...shall be fined under this title or imprisoned not more than one year, or both; and if bodily injury results from the acts committed in violation of this section or if such acts include the use, attempted use, or
threatened use of a dangerous weapon, explosives, or fire, shall be fined under this title or imprisoned not more than ten years, or both; an attempt to kill, shall be fined under this title, or imprisoned for any term of years or for life, or both, or may be sentenced to death.

However, in an effort to avoid the same vagueness as found in policies and procedures, the Supreme Court limited the function of 18 USC §§ 242 by imposing a unique mens rea (intent) requirement (Screws v. United States, 1945). In the Screws v United States case, the Supreme Court held that section 242 was impermissibly vague and there was “no ascertainable standard of guilt” (p. 95). This has made the criminal statute essentially ineffective in defining excessive force situations through subsequent criminal case law (Lurie, 2000).

Legally, police find the most guidance through civil litigation. 42 USCS §§ 1983, the federal civil parallel to the federal criminal statute (18 USCS §§ 242), enables civil litigation for deprivation of rights under color of authority. 42 USCS §§ 1983 states:

Every person who, under color of any statute, ordinance, regulation, custom, or usage of any State or Territory or the District of Columbia, subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunities secured by the Constitution and laws, shall be liable to the party injured in an action at law, suit in equity, or other proper proceeding for redress.

Although section 1983 claims are the most frequent and effective means of raising excessive force accusations, they are limited. Similar to section 242 violations, officers
are presumed to act lawfully, thus shifting the burden of proof to the person alleging excessive force (82 ALR 4th 598).

The Supreme Court, in Graham v. Conner et al. (1989), set legal the standard by which we currently measure excessive force claims for feasibility. In Graham v. Conner et al (1989) the Court held that the rights violated in police brutality cases are every person's right to be free from unreasonable seizures under the Fourth Amendment. A successful claim under section 1983 must allege that the defendant acted under color of law and that the defendant deprived the plaintiff of a federally secured right. The Court held that “the ‘reasonableness’ of a particular use of force must be judged from the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight” (p. 1871). The Court also held that courts are only to look to the actions of officers and not to the intent of officers. The Court decided that the “reasonableness” of a specific officer’s conduct “is not capable of precise definition or mechanical application” (p. 1871). Thus, this objective reasonableness standard could only be defined and judged from the perspective of a reasonable officer at the scene, responding to rapidly developing situations rather than a retrospective view from an impartial observer. The Court identified "[t]he factors to be considered in determining when the excessive use of force gives rise to a cause of action under § 1983: (1) the need for the application of force; (2) the relationship between that need and the amount of force that was used; (3) the extent of the injury inflicted; and (4) whether the force was applied in a good faith effort to maintain and restore discipline or maliciously and sadistically for the very purpose of causing harm" (p. 1869).
Policies, procedures, and criminal law provide little actual guidance to police regarding their use of force decisions. Vague policies and legal precedence leave officers and departments open to various interpretations of proper action in use of force situations. Civil law improves upon this difficult situation only slightly by offering the "objective reasonableness" standard. Thus, clear policies or procedures simply do not exist, leaving agencies and officers to look elsewhere for guidance on use of force. A standardized behavioral observation measure that elicits the salient factors of excessive force may provide an additional source of guidance.

Explaining Police Use of Force

Most explanations of police force are derived from broader theories of police behavior. These theories are intended to explain an abundance of different police behaviors, including various forms of police misconduct, and are divided into three distinct categories including individual, situational, and organizational theories (Friedrich, 1980). Individual theories explain police behavior (including police force) using variables related to the individual characteristics of the officer (i.e. experience, race, gender, education, and height) (Friedrich 1980; Terrill, 2001). Situational theories explain police behavior using characteristics and behavior of the suspect(s) and complainant(s), structural characteristics apparent in the situation (i.e., visibility and approach), and the nature of the incident (i.e. violent or non-violent) (Friedrich, 1980). Organizational theories explain police behavior in terms of the influence various agency and officer differences have on individual police officer’s behavior (i.e. standard operational procedures, policies, formal and informal rules, incentives and disincentives) (Friedrich, 1980; Sherman, 1980b; Terrill, 2001).
**Individual Theories.** Research regarding individual theories has been largely inconsistent over the past 30 years. Cohen and Chaiken (1972) studied the relationship between the background characteristics of 33 officers and various work performance variables, including use of force complaints, and discovered that age, race, and education were significant predictors. They found that older, white officers with more education received fewer complaints. Since then, researchers have consistently shown that officer race is not related to police use of force (Friedrich, 1977; Garner et al., 1995; Worden, 1996; Terrill, 2001).

Regarding experience, research shows that less experienced officers patrol more aggressively (Friedrich, 1980, Worden, 1996), make more officer-initiated stops (Worden, 1996), and use force more often (Terrill, 2001) than more experienced officers.

Garner et al. (1996) is the only study to show a gender effect, concluding that male officers are more forceful than their female counterparts. The lack of this effect in past studies may be explained by a limited amount of female police officers to observe and make comparisons (Reiss, 1966). However, most recently Terrill (2001) demonstrated with some confidence that male officers were no more likely to use force than their female counterparts.

Research regarding officer education provides differing results. For instance, early research revealed that educated officers receive fewer citizen complaints (Cohen and Chaiken, 1972; Cascio, 1977). A more recent study shows that educated officers were more likely to use force (Worden, 1996). However, the most recent research regarding police officer education reveals that less educated officers are more likely to use force than officers with higher levels of education (Terrill, 2001).
Some researchers have developed belief systems to categorize officers according to their views on certain subjects (Muir, 1977; White, 1972; Brown, 1981; Worden 1989). For instance, Muir (1977) questioned officers about their views of human nature and their attitudes toward coercive authority. Brown (1981) studied the relationship between the discretionary decisions of officers from three different southern California departments. These studies are criticized as being imprecise due to testing multiple behavioral hypotheses simultaneously (Worden, 1996; Terrill, 2001). More recently, Worden (1996) tested officer attitudes and the relationship to the single variable use of force. Worden found that officers with negative views toward citizens were more likely to use both reasonable and unreasonable force, and officers with more favorable views of force were more likely to use improper force. Terrill (2001) failed to show a relationship between three different measures of attitude and police use of force.

*Organizational Theories.* Over the past thirty years, two types of organizational theories explaining police behavior have persisted (Terrill, 2001), those relating to the formal structure of the organization and those relating to the informal structure of the organization, also called the police subculture (Sherman, 1980b). Formal organizational theories suggest that police behavior is the result of formal rules, regulations, policies, procedures, and direction from top administrators. Deviant police behavior is seen as a result of weakness in these areas (Wilson, 1968; Fyfe, 1979). Wilson (1968) provides one of the lasting explanations of police behavior resulting from the organization. According to Wilson, depending on the situation in which the department operates, one of three different styles of policing evolves among officers: watchman, legalistic, or service. The watchman style emphasizes informal police intervention (i.e. persuasion, threats, or
physical mistreatment) to maintain order. The legalistic style utilizes strict adherence to law enforcement, disregarding community problems that are not crimes. The service style focuses on community problems as a whole. Wilson suggests that the Watchman style is more likely to result in police deviance, specifically the excessive use of force.

Informal organizational theories suggest that police behavior is the result of an informal police culture that serves to protect and isolate officers from internal and external scrutiny. This subculture enables officers to develop their own styles (Sherman, 1980b; Brown, 1981).

In studies emphasizing the effects of organizational policy on the use of deadly force, researchers have supported organizational theories, suggesting that agencies adopting more restrictive policies see decreases in the discharge of firearms (Fyfe, 1979) and citizens killed by police (Sherman & Cohn, 1986).

**Situational Theories.** Researchers have consistently found that situational variables play the largest role in explaining police use of excessive force (Friedrich, 1980; Reiss, 1968; Terrill, 2001). Reiss (1968) Toch (1969) and Friedrich (1980) discovered that police were more likely to use force if a citizen was antagonistic, agitated, intoxicated, lower-class, felony suspect, and without witnesses (another citizen or officer). Worden (1996) found that improper force is more likely to occur in incidents involving violent crimes and those involving citizens who are: adult, black, male, drunk, mentally disturbed, hostile, or antagonistic.

Regarding age, Friedrich (1980) found that police are more likely to use deadly force on 18 to 25 year old citizens. However, most recent studies show that suspect age is
not a significant factor related to police behavior in general (Klinger, 1995) and specifically, the police use of force (Thompson & Lee, 2004).

**Extent of Police Force**

The amount of force used by police consists of two different dimensions. First, police force can vary by the rates of force used in departments, jurisdictions, or by officers. For instance, due to differing policies, officers in one department may legitimately use force more often to execute arrests than officers in another department. Second, a measurement of the amount of force utilized by one officer to execute an arrest may differ from the amount of force utilized by another officer. For instance, police in one jurisdiction may have fewer less-than-lethal force options (chemical agents or stun guns), and thus may resort to higher levels of physical force relative to another jurisdiction having those options. Similarly, the excessive use of force differs from excessive force in that the former refers to force that is used too frequently, whereas the latter refers to the application of too much force in a given incident.

Data on the extent of police use of force originate from four different sources, including observational studies, use of force reports, surveys, and citizen complaints (Terrill, 2001), and provide varying details of the amount of force used by police. Observational studies tend to show that police use physical force sparingly and excessive force rarely. For instance, Reiss (1968) examined 1,565 police-citizen encounters and determined that 44 (2.8%) involved the use of physical force, 37 (2.3%) of which were judged to be excessive. Using the same data, Friedrich (1980) found that 51 (3.3%) of the encounters involved reasonable physical force, and 29 (1.8%) encounters involved excessive force. Worden (1996) analyzed 1,528 police-citizen encounters from the Police
Services Study (1977) and concluded that police used reasonable force 2.4 percent of the time, and excessive force 1.5 percent of the time. Bayley and Garofalo (1989) examined 467 potentially violent police-citizen encounters and found that physical force was used in 37 cases, or 8 percent of the time. In 1988, Fyfe examined approximately 2,000 potentially violent police-citizen encounters and found that police used more force than firm voice commands about 12 percent of the time. Using Fyfe’s (1988) data, Klinger (1995) used a subset of the cases, classified as disputes (n=241), and found that police used some form of physical force 17 percent of the time. With variations in the type of police-citizen encounters and types of force, observational studies show that police use physical force between 2.4 and 17 percent of the time, and excessive force between 1.5 and 2.3 percent of the time.

Studies based on use of force reports also provide somewhat varied data on police force. For instance, using arrest reports, Croft (1985) found some form of physical force used in approximately 2 percent of the 123,500 arrests analyzed. In another study, Croft and Austin (1987) found that force was used in approximately 4 to 5 percent of the arrests analyzed in two jurisdictions. Lundstrom and Mullan (1987) used force reports from arrests and found that force was used 14 percent of the arrests. In 1992, McLaughlin studied the use of force reports from the approximate 11,000 arrests made in Savannah, Georgia and found that physical force was used 1 percent of the time. The highest rate of force was found in the study by Garner et al. (1995), which showed that police used some form of physical force in 22 percent of the 1,585 arrests analyzed. While the earlier studies based on use of force reports did not delineate the type and extent of force used, generally these studies show that police use physical force in anywhere between 1 and 22
percent of the arrests. This difference is generally attributable to the different ways force is conceptualized (Terrill, 2001).

Surveys of citizens also provide data on the extent of police force. In a survey of citizens in 15 U.S. cities, Campbell and Schuman (1968) found that 7 percent of Black respondents and 2 percent of White respondents reported being “roughed up” by police. In a survey of 806 citizens of Denver, Colorado, Bayley and Mendelson (1969) found that 15 percent of Hispanics, 9 percent of Blacks, and 4 percent of Whites reported personally experiencing police brutality. A more recent survey (Gallop, 1991) revealed that 5 percent of citizens surveyed reported that they were physically mistreated or abused by police and 20 percent reported that they knew someone who had been physically mistreated or abused. Thus, some surveys demonstrate higher police brutality rates toward Blacks and Hispanics as compared to Whites, with one in five individuals having direct knowledge of excessive police force.

The use of citizen complaints for assessing the extent of police use of force appears to be the most limited. Not every citizen files a complaint as a result of an interaction that may have included excessive force by an officer. For instance, a 1987 survey revealed that only one out of every three citizens who reported experiencing police physical abuse actually filed a formal complaint with the police department (Winick, 1987). Still, citizen complaints provide us with some perspective. Out of 441 officer complaints filed with the New York City Police Department, 164 concerned the use of police force (Chevigny, 1969). In a more recent study of 691 complaints filed with 165 agencies in Washington State, 123 involved the use of physical force (Dugan & Breda, 1991).
Prevalence reports suggest that .8 to 58.1 percent of all police-suspect encounters involve the use of some type of force (Garner, Maxwell & Heraux, 2002). Reviewing various forms of data available (e.g., observations, citizen complaints), provides additional information on the extent of force. Although the extent of force is an important factor to consider, it is also important to assess information regarding the amount of force utilized within a specific situation. The observation or analysis of a specific police-suspect encounter often includes the use of standardized measures of police force.

**Measures of Police Use of Force**

Before reviewing the current measures of police use of force, an explanation of the concept “measure” is necessary. Measuring police use of force here refers to the means to conceive and capture the amount of force applied relative to suspect resistance in a given situation. This measurement is limited to micro or individual level processes, as opposed to macro level processes, or rates of police use of force. Previous explanations of police force developed from studies using force as a dependent measure have been limited by utilizing nomothetic approaches. In some cases, this nomothetic approach has resulted in individual level explanations.

Establishing a practical and comprehensive objective measure of force based on an idiographic approach is a relatively new idea. Within the past 10 years, researchers within the criminal justice literature have presented five somewhat objective idiographic measures of use of force. The next few sections will describe these measures and discuss the limitations of each.

Three of the five objective measures are derived from Garner et al.’s (1995) study, which include physical force, maximum force, and Continuum of Force. First, the
"physical force" measure is a simple force used or not used dichotomy. Using this dichotomy, all uses of non-deadly physical force are combined into one "force used" category. Variation within the "force used" category is missed, thus limiting any practical conclusions of correlation with levels of force applied.

Garner et al.'s (1995) second objective measure, "maximum force," assesses suspect and officer behavior on a continuous scale ranging from 0 (no force) to 100 (maximum force). The single most severe use of force by officers is used in an attempt to reach an interval level of measurement of police force. The maximum force measure is limited by rating only the highest use of force within an interaction, therefore discounting much of the behavior that occurs before and after the single most severe use of force.

Garner et al.'s (1995) third objective measure, "Continuum of Force," incorporates a seven step ranking of force, which is based on the Force Continuum. The Force Continuum is a well-established tool that guides most officers in the appropriate amount of force relative to suspect resistance in a given situation (Desmedt, 1984; Connor, 1991; McLaughlin, 1992; Garner et al., 1995; Klinger, 1995; Terrill, 2001). For example, in the State of Florida, the Force Continuum (Response to Resistance Matrix) provides six levels of citizen resistance, including; presence, verbal, passive physical, active physical, aggressive physical, and aggravated physical. The continuum also provides six levels of police response, including; officer presence, communication, physical control, intermediate weapons, incapacitating control, and deadly force (see Appendix A). Police agencies in many other states provide similar guidelines, with minor variations (Garner et al., 1995). Thus, the continuum captures several aspects of force,
and acknowledges that police force is an interactional process that depends upon the
actions of the citizen as well as the officer.

Using this continuum, Garner et al. (1995) coded arrests according to the highest
amount of force and resistance observed. For example, police force was coded along
seven categories including: 0) no force, 1) police presence, 2) verbal commands, 3)
control and restraint, 4) chemical agents, 5) tactics and weapons – other than chemicals
and firearms, and 6) firearms use. Additionally, suspect force (resistance) was coded
along seven categories including: 0) no resistance, 1) psychological intimidation, 2)
verbal noncompliance, 3) passive resistance, 4) defensive resistance, 5) active aggression,
and 6) firearms use.

A benefit of the Continuum of Force measure is that it provides the first attempt
to closely approximate the Force Continuum as used by most law enforcement agencies.
By using the Force Continuum as a model by which to create their measure, Garner et al.
(1995) employ a familiar and a relatively simple measure for practitioners to apply.

However, Garner et al.’s (1995) Continuum of Force measure is limited in two
ways. First, it does not capture variations of force within the categories. For example,
within control and restraint, the measure fails to denote the specific amount or type of
control/restraint used by the officer, such as the use of handcuffs versus the use of pain to
gain compliance. Second, the Continuum of Force measure ranks categories of force
along an ordinal scale, again limiting the capture of variation and any practical
conclusions of correlation. For example, the difference between the categories of
psychological and verbal resistance is weighted the same as the difference between the
categories of active resistance and the use of a firearm (Garner et al., 1995, p. 160). An
improved measure, such as the measure proposed in the current study, would capture the variation of force applied on a continuous scale, irrespective of pre-established categories.

The fourth objective idiographic measure is the Force Factor, which measures suspect level of resistance and officer level of force on a Likert scale ranging from 1 (lowest resistance/force) to 4 (highest resistance/force) (Alpert & Dunham, 1999). The force factor is calculated by subtracting the highest level of police force from the highest level of citizen resistance. Thus, force factor scores closer to zero represent levels of force that are well matched to the amount of resistance offered.

Similar to Gamer et al.’s (1995) Maximum Force, the Force Factor is limited in that it does not consider the entire police/citizen encounter. Rather, scores are based on the highest level of police force and suspect resistance, thus ignoring a large part of the behavior to be analyzed. An improved measure, such as the measure proposed in the current study, would take into account the entire police/citizen encounter, rather than one small part of the interaction.

Finally, the Resistance Force Comparative Scale (RFCS) measures officer force and suspect resistance on a Likert scale ranging from 1 (lowest force/resistance) to 4 (highest force/resistance) (Terrill, 2001). This measure is similar to Alpert and Dunham’s (1999) force factor, yet is taken a step further by dividing the encounter into sequences and measuring the force relative to resistance in each sequence. Terrill defines a sequence as “any occurrence of either citizen resistance, police force, or both” (p.79). Terrill further describes a sequence as “always characterized by the citizen action followed by the police action” (p. 79). For example, in the first sequence of an interaction the officer
might first encounter little or no resistance and use little or no force. In a subsequent sequence, an officer might encounter moderate resistance, and apply a significant amount of force in response. The score for each sequence is coded into one of three categories, according to the officer's use of more, less, or equivalent force, relative to citizen resistance, using the force continuum. The overall score for the encounter is calculated by summing the scores of each sequence.

While Terrill's (2001) RFCS is currently the most useful idiographic measurement of police use of physical force, three limitations exist. First, the RFCS is a measurement of the appropriateness of police force according to the force continuum, not a measure of police force independent of pre-established categories. The RFCS measures officers' adherence or deviation from the Force Continuum, which limits measurement to categories established by police practitioners. The Force Continuum is an important means to categorize citizen resistance, police response, and compare these behaviors to guide police and arrive at conclusions as to the appropriateness of the force used. However, these categories have yet to be empirically tested in a measure of police force for research on the subject. The present study will empirically develop the salient factors of police use of force irrespective of the categories established by police.

Second, the RFCS lacks the ability to detect small changes in the amount of force applied relative to suspect resistance, a limitation shared by the Force Factor. This limitation is facilitated by the use of ordered data (based on the Force Continuum) to create the RFCS's three-category interval-level dependent score (more force, less force, or equivalent force relative to citizen resistance). The ordered nature of force conceived along the Force Continuum does not allow for the capture of differences within
categories, or the comparison of differences between categories, since the amount of force which causes changes between categories is not necessarily the same. In other words, there may be a small amount of force applied to cause a change between the first (presence) and second (verbal) categories of police force, as opposed to a larger amount of force applied to cause changes between the fifth (physical) and sixth (deadly) categories of force. An improvement to this measure would consider behavior by both officers and suspects on a continuous scale, irrespective of preset categories. The present study will allow for a comparative assessment (continuously) of the officer and suspect.

Third, the RFCS provides no information regarding measurement reliability or validity. This limitation is incumbent with all current idiographic measures of police force. Whitley (1996) appropriately labels measurement instruments such as this “ad hoc research measures” (Whitley, 1996), as they are developed to fit the study at hand. According to Whitley, a proper measurement instrument is a “developed research measure” (Whitley, 1996), which is empirically derived and provides reliability and validity estimates at the least. The measure proposed by the current study will be developed using established psychometric techniques, thus allowing the report of reliability and validity statistics prior to its use in the field.

Current idiographic measures of police force generally suffer from four major limitations. First, they produce dichotomous or ordered data, or are dependent on dichotomous or ordered data for a continuous outcome, thus limiting the capture of variability. Second, current idiographic measures rely heavily on pre-established categories of police force/resistance, thus limiting the capture of variation within and between these categories. The use of these categories also inhibits the inclusion of other
Factors that may be related to police force, such as aggression-specific factors. Third, current idiographic measures of police force fail to take into consideration the entire police/citizen encounter, or sequence the encounter, thus failing to capture and account for all behaviors as they occur from initial contact through final disposition. Fourth, current idiographic measures of police force are not empirically developed using established instrument development techniques, thus preventing the use of validity and reliability estimates prior to their use. Given the extent of limitations of current idiographic measures, it is reasonable to suggest that an improved measure of police force would be beneficial.

Factors Theoretically Related to Police Use of Force

Since empirically derived scales of police use of force do not exist, this section examines the theoretical factors related to; officers’ general ability to deal with use of force situations, suspect created factors, and officer reaction to suspect behavior, which may include intent-driven excessive force. There is no empirical basis for the organization of the factors in this manner. Instead, these theoretical factors were organized according to the overlap encountered during a review of the pertinent literature. The following review outlines the aggression and police use of force-based theoretical background for the scale items proposed.

The factors theoretically related to officers’ general ability to deal with use of force situations include frustration, officer training, experience, and lack of self-control. Frustration is defined as the blockage of goal-directed behavior and is described as the classic aversive instigator (Anderson & Huseman, 2003; Dollard et al., 1939). Frustration evokes a drive to aggress unless it is inhibited by fear, morals, or some other motive that
is counter to the drive to aggress. This is similar to the drive to eat when hungry or sleep when tired (Dollard et al., 1939). Police officers can become frustrated when they encounter non-compliant, resistive, or combative subjects, particularly when they are not properly trained in how to deal with these situations. The officer’s goal of arresting these subjects becomes, at least temporarily, blocked, thus facilitating the aggressive drive and increasing the probability of a shift from instrumental to reactive or hostile aggression.

Often frustrations are inaccurately viewed as provocations because the goal blockage can be directly attributed to a person (Anderson & Huseman, 2003; Berkowitz, 1993). Additionally, a person may be the object of increased aggression when justified frustrations, unrelated to the person, are experienced by the aggressor (Berkowitz, 1993; Geen, 2001). For instance, malfunctioning handcuffs, or improper training on handcuffing techniques may frustrate a police officer during the course of an arrest. Even slight resistance on the part of the arrestee may result in the application of additional frustration-instigated aggression. The idea that the target of the aggression is not the original source of the frustration has recently become well known as “displaced aggression” (Anderson & Huseman, 2003; Marcus-Newhall, Pedersen, Carlson, & Miller, 2000).

Inadequate training may also contribute to an officer’s ability to manage use of force situations. For example, poor or insufficient training may lead to the officer experiencing displaced aggression, and thus, frustration-instigated aggression toward the suspect. Differences in use of force between police departments have been linked to different training philosophies (Alpert & Dunham, 1999). Such differences may occur when departments endorse techniques requiring more effort, or limit access or training.
regarding less than lethal equipment (i.e. Tasers, pepper spray). During a resistive encounter, the officers’ frustration from the inability to control the subject might be avoided with proper training or access to the proper equipment when needed.

Experience is also demonstrated as a variable related to an officer’s use of force. For instance, researchers have found that less experienced officers patrol more aggressively, initiate more contacts with citizens (Friedrich, 1977; Worden, 1989), and are more likely to use deadly force (Alpert & Dunham, 1999). The longer the officer is on the force, the lower the ratio of force applied for a given level of resistance (Alpert & Dunham, 1999). Experience and training provide officers with legitimate means of controlling use of force situations. The lack of proper training and experience may lead officers to react to resistive subjects impulsively and/or emotionally, without controlling the situation, the suspect, or themselves.

The final officer-related variable in use of force situations is self-control, which is greatly influenced by the degree of impulsivity or emotions on the part of the officer (Krakowski, 2003). Impulsivity is defined as the failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others. (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, DSM-IV). Impulsivity is characterized as a quick and immediate response, one that occurs without reflection. Such a response often produces irritation and may be accompanied by aggression (Geen, 2001), therefore leading an officer to possibly utilize more force than necessary or indicated in a given situation. Well-trained and experienced officers should exhibit higher ratings of self control, and lower ratings of impulsivity and emotion in use of force situations. Thus, frustration, training, experience, and self-control are factors theoretically...
shown to relate generally to aggression and specifically to police use of force, and may manifest themselves to observers in use of force situations.

Aside from officer variables, certain factors are theoretically related to the suspect, including provocation and threat. A provocation is any behavior that interferes with the attainment of a goal (Anderson & Huseman, 2003). Provocations can be verbal in nature (verbal aggression such as slights, insults, abusive language, etc) or physical in nature (physical aggression such as physical resistance, or more active and overt actions toward an officer). Provocation is considered an eliciting condition that may not only increase the likelihood of aggression (Berkowitz, 1982, 1993), but is also considered the strongest situational instigator of human aggression (Berkowitz, 1993; Geen, 2001; Anderson & Huseman, 2003). Provocation occurs in limitless situations because of differences in the behaviors that are provoking to various individuals. For example, situations that are considered provocative are defined by different subcultural codes of honor or personal respect (Horowitz & Schwartz, 1974; Nisbett and Cohen, 1996). The police subculture certainly ascribes to honor and respect in most situations (Herbert, 1998), and are likely to be provoked when these codes are threatened or questioned.

Evidence for provocation as an instigator to the use of force is also found within the police literature. By resisting officers’ attempts to arrest or subdue, suspects challenge the legitimacy of the police to exercise authority, which provokes officers (Reiss, 1968). Furthermore, hostile and antagonistic citizens who physically resist or fight with officers are more likely to encounter the use of force and improper force (Worden, 1996). Therefore, questions, challenges, resistance, or other threats to officer authority serve as provocations and are likely to result in the use of improper or excessive force.
Related to provocation, threat is another suspect factor of police use of force. A threat can provoke aggression, or serve as a primer for aggressive conditions (Geen, 2001; Zillman, 1971). Numerous stimuli can serve as aggression primes, with or without provocation (Bettencourt & Kernahan, 1997; Anderson, Benjamin, & Bartholow, 1998), and with or without awareness (Anderson & Huseman, 2003). For instance, the presence of a weapon (as opposed to some other non-threatening, inanimate object) is demonstrated to increase the aggression of research participants in field and laboratory experiments (Berkowitz & LePage, 1967; Berkowitz & Donnerstein, 1982; Carlson, Marcus-Newhall, & Miller, 1990). Police officers are trained to recognize numerous items as weapons, and are trained to react to protect themselves and others threatened by these weapons. The mere presence of a weapon (not possessed by the officer) is likely to be perceived as a threat and should therefore increase instrumental aggression by police officers. Keeping in mind that different individuals react differently to a threat (Baumeister, & Boden, 1998; Baumeister, Smart, & Boden, 1996), officers may instrumentally or reactively aggress. Thus, a threat may provoke officers to utilize excessive force to manage or control a suspect.

A suspect’s behavior during interactions with police officers may greatly contribute to the use of force employed. However, the officer’s reactions to potential provocation or threats are also factors theoretically related to the subsequent use of force. These factors may involve intent-driven excessive force. Officer reaction factors include negativism, anger/irritability, fear, and verbal as well as physical aggression. Negativism refers to the state produced by negative affect, which serves as an instigator to aggression (Berkowitz, 1993; Anderson & Huseman, 2003). The link between negativism and
aggression has been shown to exist in various clinical studies (Poznanski, & Zrull, 1970; Pfeffer et al., 1987). Furthermore, inductions of depressive moods (including negative affect) are associated with increases in aggressiveness (Berkowitz, & Troccoli, 1990; Miller & Norman, 1979). However, this relationship is not always direct and may be moderated by additional variables, having to do with past experiences (Geen, 2001).

In the police literature, theorists have described personality types to explain the various styles of policing (Wilson, 1968; Worden, 1996; White, 1972). These personalities shape the traits and behaviors used in an officer’s everyday activities, including the use of force. For instance, the description “tough cop” refers to officers whom are most likely to use force improperly (White, 1972). One of the defining characteristics of the “tough cop” is his/her cynicism or negativism. Generally, these types of officers see themselves as a negative force in people’s lives and thus, conduct themselves negatively (Worden, 1996). Officers with more negative attitudes toward citizens are more likely to use improper force, and may “(a) conceive of the police role in narrow terms, limited to crime-fighting and law enforcement, (b) believe that this role is more effectively carried out when officers can use force at their discretion, and (c) regard the citizenry as unappreciative at best and hostile and abusive at worst” (Worden, 1996, p. 27). In contrast to the “tough cops”, problem solvers tend to conceive the role of police as assisting the public with their problems, and are least likely to use improper force or force at all (White, 1972; Worden, 1996). Thus, negativism is a factor theoretically and empirically associated with aggressive police use of force, and may manifest itself to observers of the improper or excessive use of police force.
Anger (i.e., irritability) is another factor theoretically related to officer reaction in use of force situations. Geen (2001) has found that intensity of anger and level of aggression go hand in hand, and both are a function of the level of physiological excitation. This is an idea based on Zillman’s (1971) excitation transfer theory. Furthermore, anger is a variable used in the definition of affective (also called hostile) aggression (Anderson & Huesmann, 2003). This type of aggression is regarded as “impulsive, thoughtless (i.e., unplanned), driven by anger, having the ultimate motive of harming the target, and occurring in reaction to some perceived provocation” (Anderson & Huesman, 2003, p. 5). The display of anger, often perceived as irritability, is also directly linked to aggression. “The regulation of emotion is relevant to both violence and impulse control,” (Krakowski, 2003). Strong emotional states often accompany violent acts that are considered impulsive. Irritability, temper outbursts, or a greater emotional responsiveness are often present in violent or impulsive individuals.

The display of anger/irritability as an officer reaction is also considered by researchers in the police literature. Officers may repeatedly tend to take disagreements by citizens personally or react to them angrily. Such oversensitivity to affronts can derive from an underlying sense of inadequacy or feelings of self-doubt (Toch, 1969). Therefore, anger or irritability are not only central themes in general human aggression, but are likely to present themselves within the specific realm of policing. It is expected that these factors may be detectable by observers of police-suspect interactions.

Fear is another variable that may be present in an officer’s reaction in use of force situations. Fear is an affective state that is related directly to hostile and instrumental aggression (Taylor, 1967), and as a moderating variable to aggression via arousal and
anger (Berkowitz, 1993; Monopolis & Lion, 1985). The fight or flight theory serves as a basis for fear as a contributor to aggression (Kingsbury et al., 1997). Specifically, aggression becomes imminent to some people who are in fear and are forced to decide whether to aggress or retreat. In policing, the flight option is less viable than in most other situations. As Toch (1996) states, in policing “fear also inspires compensatory conduct to ‘prove’ its nonexistence” (p. 102), so to prevent being seen as fearful, officers react in ways that protect their self-image and create needless situations to prove their bravery (Toch, 1996). Thus, fear is a factor related to aggression and police use of force, and should manifest itself in use of force situations.

Finally, verbal and physical aggression are factors that are related to an officer’s reaction in use of force situations. Verbal and physical aggression are factors identified by Choynowski (1995) in a study of the factorial structure of aggression. Additionally, verbal and physical aggressions are well documented in various aggression measures (e.g., Overt Aggression Scale (OAS), the Rating Scale for Aggressive Behavior in the Elderly (RAGE), and the Staff Observation Aggression Scale (SOAS)). Verbal aggression is generally defined as verbal threats, gestures, screaming, or abusive language (Arboleda-Florez, Crisanti, Rose & Holley, 1994; Reiss, 1968; Yudofsky et al., 1986). Officers are often trained and encouraged to use such language or gestures to quickly capture the attention of the suspect. Physical aggression is generally defined as a physical act that is meant to harm another individual (Anderson & Bushman, 2002). In policing, the use of physical aggression is regulated to a greater extent than the use of verbal aggression, as it is often the basis of use of force complaints. Thus, verbal
aggression and physical aggression relate to aggression as well as police use of force, and may manifest themselves to observers in use of force situations.

The above-mentioned factors each explore contributions of suspect as well as officer behavior in the use of police force. In addition to theoretical and empirical evidence connecting the individual factors to the use of force, one previous study examined the factorial structure of aggression and identified 13 factors, including: nonconformity, verbal aggression, malice, negativism, physical aggression, boldness, vicarious aggression, self-aggression, resentment, suspiciousness, irritability, lack of self-control, and vengefulness (Choynowski, 1995). These factors are similar to those identified in additional studies of aggression (Anderson & Huseman, 2003; Berkowitz, 1993; Geen, 2001; Dollard et al., 1939).

A large part of the factors theoretically related to aggression have been validated empirically through the use of self-report studies, and are not the same as the salient observable factors behaviorally assessed (Palmstierna, 2000). Since all of the cognitive and emotional factors derived from a self-report measure are not likely to be salient to observers and raters of aggression (Palmstierna, 2000), this review did not include items logically unobservable (i.e. self-aggression, vicarious aggression, resentment, etc.). The purpose of the current study is to develop a behavioral rating instrument suitable to rate police use of force on the factors theoretically and empirically derived herein.

STATEMENT OF PURPOSE

Previous literature regarding; 1) aggression, 2) police use of force, and 3) the measurement of both of these constructs reveals that police use of force is best defined among the dimensions of; frustration, provocation, training, experience, lack of self-
control, threat, fear, irritability, non-conformity, boldness, verbal aggression, physical aggression, malice, irritability, and negativism. Various researchers have made reference to these factors as dimensions of aggression and police use of force (Choynowski, 1995; Terrill & Mastrofski, 2002; Toch, 1990; Worden, 1996; Zillman, 1983). However, no model or instrument that defines and assesses the inclusion of these factors in a measure of police force currently exists. The purpose of the present study was to develop a behavioral rating instrument to measure the observable and salient dimensions of police use of force, and establishes psychometric properties in terms of (a) internal consistency as a form of reliability, (b) item sampling adequacy in terms of content-related validity, and (c) construct-related validity.
CHAPTER III
METHODOLOGY

Participants and Sampling

Thirty-four potential subject matter experts (SMEs) were contacted, via electronic mail and (or) in person, and asked to assist with rating videos and evaluating potential questionnaire items (the content validity study). Despite multiple attempts, 15 of the potential SMEs did not respond. Of the remaining 19 potential SMEs who did respond, five completed the study as requested, two completed a portion of the requested materials, four asked for more information and agreed to assist, but did not follow through, four responded and declined to assist due to time constraints, three responded and declined to complete the research, citing their lack of credentials as SMEs in this area of research, and one declined to assist without explanation.

The five subject matter experts (SMEs) who agreed to participate were requested to complete both the ratings of videos and evaluation of items. However, one SME completed the ratings of videos, but did not complete the evaluation of items. Therefore, an additional SME, with a background in psychology and aggression, was asked to complete only the evaluation of items.

The six subject matter experts (SMEs) whose data comprises the ratings of videos and content validity study include three “practioner” experts, and five “academic” experts, with some overlap due to SMEs who were both practitioners and who taught and conducted empirical research in the field. The first SME (SME 1 – a practioner expert) has a bachelor’s degree in Criminology and 10 years of law enforcement experience, including experience as a tactical operator and defensive tactics/firearms instructor. SME
1 is currently the statewide coordinator for all defensive tactics training for a large state law enforcement agency.

The second SME (SME 2 – an academic/practitioner expert) is an administrator with over 28 years of law enforcement experience in a large (over 3,800 officers) local police department. SME 2 holds a PhD in Public Administration and has a background in training, teaching and research in patrol procedures, use of force, defensive tactics, field force concepts, high-risk stops, and tactical decision-making. SME 2 has supervisory and administrative experience in law enforcement management, leadership, functions and operations, policy and procedures, and ethics.

The third SME (SME 3 – an academic expert) is a nationally recognized expert in policing/use of force. SME 3 has a PhD with an emphasis in Criminal Justice, with over 30 years of research and teaching experience in policing, and is currently the Chair of a Department of Criminal Justice at a large public university. SME 3 has authored numerous published police use of force texts, published numerous peer-reviewed articles, and is an editor or ad hoc reviewer for various criminal justice journals.

The fourth SME (SME 4 – an academic/practitioner expert) has a PhD in clinical psychology with an emphasis in aggression. SME 4 has over 10 years of teaching and research experience in the field of psychology/aggression. SME 4 currently conducts forensic assessments of aggressive incidents within an inpatient mental health facility.

The fifth SME (SME 5 – an academic/practitioner expert) has a PhD in experimental (behavioral) psychology. SME 5 has over 5 years of teaching and public safety experience with an emphasis on critical incident response behavior. SME 5 is a senior public safety engineer on contract to two federal agencies with a primary role in
designing, executing, and providing behavioral operational assessments for multi-disciplinary training exercises.

The sixth SME (SME 6 – an academic/practitioner expert) is a nationally recognized expert in policing/use of force. SME 6 was employed as a police officer for four years, has a PhD in sociology with an emphasis in police/use of force, has over twenty years of research and teaching experience in policing, and is currently an associate professor at a large public university. SME 6 has authored numerous police/use of force texts and peer-reviewed papers, and is an editor or ad-hoc reviewer for various criminal justice journals.

Materials

Videos

Videos depicting real police-citizen encounters (not staged or otherwise scripted) were selected from various clips available in the news media, police training academies/institutes, police agencies, television programs (i.e. “Cops”), commercially available video tapes, and other public/private sources. A large portion of the videos screened came from private collections (e.g. police trainers). Most videos depicted encounters as recorded through dash-mounted police video cameras. Approximately 350 video clips were screened for encounters that; 1) depicted some form of police use of force (mostly arrest scenarios), 2) did not depict the use of a handgun or force that resulted in death, 3) depicted all or most of the encounter from initial contact to the conclusion of the encounter (in some cases an arrest), and 4) included all or most of the audio with moderate clarity. This initial screening criteria was followed by further screening that eliminated videos with; 1) too many officers involved in a physical
confrontation, 2) undesirable camera angles that limited the capture of behavior, 3) editing that cut out critical interactions, and 4) audio overlay (i.e. narrating) that occurred during critical interactions.

Once screened, 14 videos, ranging from 52 seconds to 5 minutes and 9 seconds, depicting police use of force encounters were selected for ratings by subject matter experts (SMEs). Videos depicting more than one officer involved in the encounter included screen-shots at the beginning of the videos with arrows denoting the individual officers whose behavior was to be judged (as opposed to the other officers present). Videos depicting the use of intermediate weapons (e.g. Taser, pepper spray) included descriptions and illustrations of the weapons and capabilities/effects (see Appendix B). The 14 videos were digitized, then uploaded to a website to be viewed and rated by SMEs.

**Procedure**

*Website*

A website was developed with links to each of the 14 videos. A unique web address was provided to the SMEs who agreed to assist with the study. The website allowed SMEs to randomly access and view each video, then rate the force used by officers in each video.

DeVellis' (1991) eight-step guide to scale development provided a basis for the content validity study. The development of the Police Force Observational Rating Scale (PFORS) consisted of the following four steps, with the remaining four steps omitted due to study limitations.
Step One: Clearly define the construct to be measured. Police use of force has been defined using the descriptors of violence, aggression, morality, and misprisions of position. The factors (constructs) theoretically underlying these descriptors include; nonconformity, boldness, frustration, training, provocation, verbal aggression, lack of self-control, physical aggression, negativism, malice, irritability, threat, and fear, all defined in Appendix C.

Step Two: Generate a pool of potential items to be included in the scale. Items were to be concise, yet meaningful (DeVellis, 1991), while minimizing the degree of inference required of participants (Whitley, 1996). A total of 71 initial items were generated (Appendix D).

Step Three: Determine the format for measurement. Step three occurred concurrently with step two (DeVellis, 1991). Streiner and Norman (1995) suggest that researchers consider the number of steps in the response set and the labeling of the points on the scale. Nunnally & Bernstein (1994) suggest that researchers consider whether measures produce ordinal or interval level data. The data from rating scales typically does not produce actual interval level data because the true distance between successive categories is commonly not the same. However, if there is not extreme skew in the distribution of scores, data from rating scales can be analyzed as though they were interval level data without producing extreme bias (DeVellis, 1991). Thus, a four-point Likert scale was constructed for the development of the PFORS, limiting the respondent to selecting a degree of agreement or disagreement with each statement rather than offering a neutral option. Specifically, response options ranged from strongly disagree (1) to strongly agree (4), with these terms as the extremes.
Step Four: The content validity study, whereby items are qualitatively reviewed by: 1) experts who have extensively studied police use of force; and 2) lay experts, such as police officers or other use of force practitioners (Rubio, et al., 2003; DeVellis, 1991). Academic and lay experts in the fields of aggression and police use of force were contacted and asked to review the initial pool of items (Appendix D). Reviewers/SMEs were asked to evaluate: 1) the clarity of each item; 2) how relevant they thought each item was to the construct police use of force; 3) to which theoretical factor of police use of force each item belongs; and 4) the feasibility of each item in a final scale to measure police use of force (Rubio, et al., 2003; Waltz & Bausell, 1981).

Regarding the clarity and conciseness of each item, reviewers rated items on a four-point Likert scale (1 = item is not clear, 2 = item needs major revision to be clear, 3 = item needs minor revision to be clear, 4 = item is clear). Reviewers rated the relevancy of items on a four-point Likert scale (1 = not relevant, 2 = unable to assess relevance without item revision, 3 = relevant, but needs minor revision, 4 = relevant and succinct). Using these ratings, a Content Validity Index (CVI) was calculated (Rubio, et al., 2003; Lynn, 1985). The CVI for each item is the proportion of experts who give it a rating of three or four, and the CVI for the entire instrument is the proportion of total items judged to be content valid. A CVI of ≥.80 was required to establish content validity (Rubio et al., 2003; Lynn, 1986). Items that did not meet this criterion were eliminated from the item pool.

Reviewers were also provided a list of the theoretical factors of police use of force and asked to associate each item with a factor of the scale (Rubio et al., 2003). Using these associations, a Factorial Validity Index (FVI) of the items was calculated as the
proportion of correctly associated items. An FVI of $\geq .80$ was required to establish the factorial validity (Rubio et al., 2003). Items that did not meet this criterion were eliminated from the item pool. Items meeting the CVI and FVI criterion formed the version of the PFORS for further use in the psychometric analysis.

Subject matter experts were asked to view the 14 videos of police encounters and rate the force used by officers depicted in each video. The experts rated each video on a continuum of 1 to 9, 1 representing an inadequate amount of force used by the officer, and 9 representing an excessive amount of force used by the officer. The nine-point scale was constructed with the intent of subsequently collapsing the ratings into the three categories (excessive, adequate, and inadequate) with at least 3 videos assigned to each category.
CHAPTER IV

RESULTS

Within the content validity study, items were rated for clarity, relevancy, and feasibility. To meet criteria for inclusion in the scale, each item was required to have inter-rater reliability (≥.80) within each category. Regarding clarity of each item, responses of 1 (item is clear) or 2 (item needs minor revisions to be clear) were collapsed to a single “clear” category. Similarly, items rated as 3 (item needs major revisions to be clear), or 4 (item is not clear) were collapsed to a single “unclear” category. 57 of the 71 items met the Content Validity Index (CVI) criteria of ≥.80 in the “clear” category after collapsing (Appendix D).

Regarding the relevancy of each item, responses of 1 (item is relevant) or 2 (item needs minor revisions to be relevant) were collapsed to a single “relevant” category. Similarly, items rated as 3 (item needs major revisions to be relevant), or 4 (item is not relevant) were collapsed to a single “not relevant” category. 61 of the 71 items met the CVI criteria of ≥.80 in the “relevant” category after collapsing (Appendix D).

Regarding the feasibility of each item, response choices were dichotomous and potential responses included “keep the item in the final scale” or “remove the item.” SMEs were not provided with a specific guideline for rating feasibility, but were able to reflect on their ratings of clarity and relevancy. SME responses yielded 49 of the 71 items meeting the CVI of ≥.80 agreement to “keep the item in the final scale” (Appendix D).

Regarding the assignment of items to factors, SMEs were required to select a factor that fit each item, regardless of their previous ratings of clarity, relevancy, or feasibility. SMEs were provided the option of rating the item as “other, specify” which
enabled them to create a factor they believed to be more fitting to the item. For instance, reviewers suggested additional factors such as “control”, “politeness” and “animated”. Raters also made several comments regarding overlap in the assignment of items to factors. For instance, on several items raters selected “Other, Specify”, then typed “training, experience”. A total of 17 items met factor assignment criteria of ≥.80 inter-rater agreement (Appendix D).

Therefore, a total of 45 of the original 71 items met the CVI criteria of ≥.80 for both clarity and relevancy; 44 of the 45 selected items further met the feasibility criteria of ≥.80; and 11 the 44 selected items further met the Factor Validity Index criteria of ≥.80 (Appendix D). SMEs successfully rated a variety of items as clear, relevant, feasible, and belonging to varying factors related to the use of force in policing. The item rating process for the content validity study yielded a potential total of 11 items to be included in the Police Force Observational Rating Scale (PFORS).

In addition to rating scale items, SMEs rated a total of 14 videos depicting police/subject interactions (Appendix E). Each video was rated on a scale of 1 (inadequate force) to 9 (excessive force). Videos rated as 1, 2, or 3 were collapsed into a single category “inadequate” force used in the encounter. Videos rated as 4, 5, or 6 were collapsed into a single category “adequate” force used in the encounter. Videos rated as 7, 8, or 9 were collapsed to a single category “excessive” force used in the encounter. See Appendix E for raw and collapsed video data.

Videos 1, 7, 8, 9, 10, 11, 12, and 14 met criteria (≥.80) for assignment to the “adequate” category. This result exceeded the requirement of three videos per category. Videos 5 and 6 met criteria for assignment to the “inadequate” category. This result failed
to meet the requirement of three videos per category, therefore compromising further
development of the scale. Video 4 met criteria for assignment to the excessive category.
This result also failed to meet the three video per category requirement. The remaining
videos (2, 3 & 13) failed to demonstrate adequate inter-rater reliability for assignment to
any of the three categories.
CHAPTER V
DISCUSSION

The purpose of the present study was to construct a behavioral rating/observational scale of police use of force. One significant limitation in the content validity study prohibited further development of the scale. Specifically, the study lacked an adequate number of viable videos (minimum of three in each category) for depicting behavior occurring in the excessive and inadequate force categories.

While lack of viable videos prohibited further development of the proposed scale, other limitations were present as well and may have impacted the general course of the study. For example, the present study was unable to benefit from previous scale development within the area of police use of force. The current research proposed a novel approach to the development of an empirically based scale for the behavioral observation/rating of police use of force. This approach was innovative in two significant ways. One, this approach is the first known attempt to empirically develop a scale for the measurement of police use of force using well-established psychometric principles. Previous attempts to develop scales for the measurement of police use of force lack theory-driven evolution, a basis of scale development using the principles of psychometrics. While future studies will benefit from the theory developed herein, the current study suffers from the lack of prescience in this area. Two, this innovative approach includes a theoretical bridge between the psychological concept of aggression and police use of force. While other studies of police use of force include explanations of variation in the level of force
used through factors of aggression, no previous studies used these factors as a theoretical foundation for the development of a scale for the measurement of police use of force.

The goal of the proposed research included completion of a content validity study as a step in the development of a model for the measurement of police use of force. However, limitations with the number of videos that met criteria within each category led to limitations in external validity and therefore prohibited continuing with further development of the PFORS. A minimum of three videos in each of the categories (inadequate, adequate, and excessive) denoting use of force would allow for the appropriate degree of variability in the representation of behaviors in each category. While eight videos met criteria for inclusion in the “adequate” category, only two met criteria for inclusion in the “inadequate” category, and only one met criteria for inclusion in the “excessive” category. The myriad of behaviors that may occur in situations involving officers’ use of inadequate and/or excessive force were severely underrepresented in the 350 videos reviewed by this researcher and were limited to those behaviors depicted in one or two specific situations. Furthermore, both videos that met criteria for the inadequate category (videos 5 and 6) depicted an “ambush” scenario wherein the officers depicted were punched by surprise and lost consciousness, thus further limiting variable behavior in this category. Thus, the present study was limited by the variability in police use of force depicted in videos available to the researcher.

Analysis of the video rating data does not explain the lack of ratings in the excessive or inadequate categories. The inability to obtain three videos rated as
excessive as well as three rated as inadequate may be due to one or more of the following: 1) the researcher lacked available videos that demonstrated behaviors within the two extreme categories, 2) the researcher was ineffective in appropriately filtering down the 350 videos to the 14 videos selected for rating, and/or 3) the subject matter experts were ineffective in appropriately labeling the officer behavior depicted in the videos. Each of these explanations must be considered as a potential influence in the discontinuance of the scale development.

With regard to video access, police versus suspect interaction footage is generally readily available. However, videos depicting police using inadequate or excessive force versus subject resistance are not as easily obtained. While it is clear that inappropriate force incidents (either inadequate or excessive) occur, they are not as frequent as incidents involving appropriate force (Garner et al., 1996; Croft, 1985). The result is the availability of fewer inappropriate force incidents captured on video, which likely contributed to this limitation. Aside from the limitations to their existence, it is understandable that police agencies likely limit access to video footage depicting inappropriate force by officers.

The researcher contacted several individual departments, and while some acknowledged that video footage existed, none provided access to videos. Perhaps agencies would be more willing to disclose videos for research that was being conducted by an internal member of the department. Openly disclosing videos to external researchers may have moral, ethical and possibly legal implications that policy agencies do not want to experience. Future studies in this area would benefit from gaining access to a large number of police/subject interaction videos directly
from individual police agencies. Videos collected directly from the agencies are less likely to be subjected to pre-screening, thus improving the prospects of obtaining videos depicting inadequate or excessive force.

Given the limitation in gaining access to videos from law enforcement agencies, the researcher contacted dozens of public and private organizations that produce police videos for officer training purposes. Similar to police agencies, most did not allow access to videos. However, a few did respond, and under limited circumstances, provided access and/or video footage. For example, after some negotiation, one organization sent dozens of police videos that were screened, some of which are included in the videos utilized for the current study. This organization offered access to caches of raw video footage, and/or to conduct large scale screening and duplication of video footage, but at a cost prohibitive price. Future researchers may benefit from grant support to defray significant cost in obtaining videos.

Another organization allowed access to a vault of video footage that included mostly non-police related situations. Although this organization allowed access, they could not provide assistance with the screening of videos for police encounters, and required a fee for the time taken to screen the videos, and an additional fee for the duplication of applicable video footage. Both fees, the cost of travel to the location of the footage, and the time required to screen video footage, made this organizations’ offer cost prohibitive. Additionally, this organization’s description of the footage provided little chance that a search would have resulted in significant success. Future researchers may consider collaborating with a police video production organization in the planning phases of the study to increase the likelihood of gaining access to viable
videos. Lack of formal collaboration with police departments and/or private organizations may have limited the range in behaviors available on videotape to this researcher. This limitation may have subsequently contributed to the SMEs inability to rate the necessary number of videos as “inadequate” as well as “excessive” in use of force displayed by the officer.

With regard to selection of videos to be rated, the researcher initially screened approximately 350 videos that; 1) depicted some form of police use of force (mostly arrest scenarios), 2) did not depict the use of a handgun or force that resulted in death, 3) depicted all or most of the encounter from initial contact to the conclusion of the encounter (in some cases an arrest), and 4) included all or most of the audio with moderate (or better) clarity. This initial screening criteria was followed by further screening that eliminated videos with; 1) too many officers involved in a physical confrontation, 2) undesirable camera angles that limited the capture of behavior, 3) editing that cut out critical interactions, and 4) audio and/or video overlay (i.e. narrating) that occurred during critical interactions. It is likely that more videos, particularly in the extreme categories (excessive and inadequate force), would have been included if the researcher did not screen as described above. However, the unacceptable tradeoff would have been significant threats to the construct validity of the proposed instrument.

With regard to SME qualifications and abilities as raters, it appears the SMEs were well qualified to rate the videos appropriately as requested. Four of the SMEs who rated videos have PhD’s within the area of Criminal Justice or Psychology, two of which are regular contributors to police use of force literature. The other two PhD SMEs are experts in the fields of aggression and behavior ratings. The fifth SME,
who is not a PhD, has ample police experience and is the defensive tactics training
coordinator for a large state law enforcement agency. While the data does indicate
that the ratings of one SME were slightly higher overall, they were not significant
enough to justify removal or substitution of data. Thus, it appears that the SMEs
utilized in this study were not only well qualified to assess police behavior on the
videos and rate the videos accordingly, but they also demonstrated relative internal
consistency.

The present study undoubtedly experienced several limitations, the most
significant of which was the inability to proceed from a content validity study to
development of the proposed scale. However, the current research still contributes to
the body of knowledge regarding police use of force in three ways. One, this research
introduces a previously unestablished bridge between measures of aggression and
measures of police use of force. Police use of force is intrinsically aggressive and its
measurement can benefit from the evolution of similar scales that also measure
aggression. Two, this research contributes to the body of knowledge regarding police
use of force by introducing the psychometric method of scale development. To date,
no empirically derived scales for the measurement of police use of force are reported
in the literature. Researchers must instead rely on ad-hoc measures with no estimates
of reliability or internal consistency. Lack of psychometric data limits the significance
of the conclusions that are made and based on research utilizing these measures.
Three, this research contributes to the body of knowledge regarding police use of
force by providing a theoretical basis for the underlying factors of police use of force,
including behavioral and psychological factors related through the study of
aggression. Future studies will hopefully benefit from the results in the present study toward the development of an empirically derived model of police use of force.
### APPENDICES
Appendix A

Response to Resistance Matrix

#### MATRIX
RECOMMENDED RESPONSE TO RESISTANCE
AND LEVELS OF RESISTANCE

<table>
<thead>
<tr>
<th>Resistance Level</th>
<th>Aggravated Physical</th>
<th>Aggressive Physical</th>
<th>Active Physical</th>
<th>Passive Physical</th>
<th>Verbal</th>
<th>Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Officer Presence Levels:**

- **1:** Effective Presence
- **2:** Communication
- **3:** Physical Control
- **4:** Intermediate Weapons
- **5:** Incapacitating Control
- **6:** Deadly Force

**Effective:** 2/1/2002

---

Incorporated by Reference in Rule 11B-27.0011(4)(c)1., F.A.C.
Appendix B

Illustrations/Descriptions of Intermediate Weapons Used in Videos

Table B1

This video depicts the use of a taser. Please read the following to understand how a taser works.

Tasers and stun guns are high-voltage, low-current stimulators (figure) that can cause involuntary muscle contractions and sensory responses, such as various degrees of pain and the feeling of exhaustion. The electrodes are fixed in stun guns but are shot out as darts from tasers. These devices produce electrical stimuli in the form of short-duration (small fraction of a millisecond), repetitive pulses (5–30 pulses/s), each of 50 000 volts. Since currents can be conducted by electrical arcs, effective contact with the body of the person targeted can be made even if the darts (electrodes) that carry the electrical charge land on thick clothing or if one lands on the ground and the other on the person.

(Fish & Geddes, 2001)

Table B2

This video depicts the use of pepper spray. Please read the following to understand how pepper spray works.

The video will start in 30 seconds.

One form of non-lethal force is oleoresin capiscum (OC) pepper spray. OC spray is a naturally occurring inflammatory agent found in cayenne peppers. When sprayed on a person, the individual almost immediate swelling around the eyes, a fierce burning sensation, and restricted breathing due to inflammation of the respiratory tract (Lumb & Friday, 1997).
Appendix C
Factors with Definitions

Verbal aggression: Verbal threats, gestures, screaming, or abusive language

Physical aggression: A physical act that is meant to harm another individual

Anger/irritability: A strong emotion; a feeling that is oriented toward some real or supposed grievance; oversensitivity to affronts

Fear: An emotion experienced in anticipation of some specific pain or danger (usually accompanied by a desire to flee or fight)

Self-control/Impulsivity: The failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others

Frustration: The blockage of goal-directed behavior

Training: Activity leading to skilled behavior

Experience: The accumulation of knowledge or skill that results from direct participation in events or activities

Provocation: Any behavior that interferes with the attainment of a goal

Threat: Something that is a source of danger

Negativism: Characterized by skepticism and a disagreeable tendency to deny or oppose or resist suggestions or commands

Non-conformity/Boldness - failure to conform to accepted standards of behavior; the trait of being willing to undertake things that involve risk or danger

Vengefulness/Malice: A malevolent desire for revenge; feeling a need to see others suffer
## Appendix D

### List of Proposed Scale Items and Corresponding Selection Criteria

<table>
<thead>
<tr>
<th>Item</th>
<th>Clarity – C</th>
<th>Relevancy – R</th>
<th>Feasibility – F</th>
<th>Factor Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The officer behaved as if he/she was inexperienced</td>
<td>*</td>
<td></td>
<td></td>
<td>Experience</td>
</tr>
<tr>
<td>The officer over-reacted.</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer addressed the suspect as “sir” or “ma’am”</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An experienced officer would have managed this situation better.</td>
<td>*</td>
<td></td>
<td></td>
<td>Experience</td>
</tr>
<tr>
<td>The suspect provoked/disrespected the officer</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer gave contradicting commands to the suspect (e.g., “get up,” then “get down”; “shut up,” then “tell me what happened”)</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer repeated him/her self frequently during the situation</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer became more forceful (with verbal commands) as the situation continued</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer ignored the suspect</td>
<td>CR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer told the suspect to “shut up” (or listen, keep quiet, etc.)</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer was frustrated</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer used inflammatory/provoking remarks (e.g., “do you want to go to jail?”)</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer appeared to lose his/her temper</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer did not want to listen to the suspect</td>
<td>CR</td>
<td></td>
<td></td>
<td>Frustration</td>
</tr>
<tr>
<td>The officer spoke faster as the situation progressed</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect questioned the officer’s authority (e.g., “you can’t make me do that,” “I am going to sue,” etc.)</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer was verbally unprofessional toward the suspect</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer had a short temper.</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer should have resolved this situation quicker</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer did not appear to have the situation under control</td>
<td>CRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer appeared to be properly trained to manage this situation.</td>
<td>CRF</td>
<td></td>
<td></td>
<td>Training</td>
</tr>
</tbody>
</table>

C – Meets clarity criteria; R – Meets relevance criteria; F – Meets feasibility criteria; * - no criteria met
Factor is listed if Factor criteria are met.
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A well-trained officer would have managed this situation better.</td>
<td>R</td>
<td>Training</td>
<td></td>
</tr>
<tr>
<td>The officer was verbally insulting</td>
<td>CRF</td>
<td>Verbal Aggression</td>
<td></td>
</tr>
<tr>
<td>The officer showed fear (winced, flinched, grimaced, cringed, shook, shied away, drew back, or cowered)</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer appears to have a negative view of the suspect.</td>
<td>CR</td>
<td>Negativism</td>
<td></td>
</tr>
<tr>
<td>The officer disrespected the suspect</td>
<td>CR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer behaved differently than most officers would in this situation</td>
<td>CR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer did not conform to acceptable standards for police work</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer had a bad attitude</td>
<td>RF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect disobeys (did not follow) the officer’s commands</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer used derogatory comments.</td>
<td>CRF</td>
<td>Verbal Aggression</td>
<td></td>
</tr>
<tr>
<td>The officer unnecessarily hit the suspect</td>
<td>CRF</td>
<td>Physical Aggression</td>
<td></td>
</tr>
<tr>
<td>The officer effectively managed the suspect</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect challenged the officer (e.g., “go ahead, arrest me,” etc.)</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect physically resisted the officer</td>
<td>CRF</td>
<td>Physical Aggression</td>
<td></td>
</tr>
<tr>
<td>The officer unnecessarily pushed the suspect’s head into the ground</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect was verbally insulting (e.g., “you pig,” “dumbass,” etc.)</td>
<td>CR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The suspect threatened the officer (e.g., “I’m gonna kick your ass”)</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer tried to hurt the suspect</td>
<td>RF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer used foul language when talking to the suspect</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer was animated (e.g., used hands/facial expressions and/or varying voice inflections) when he/she spoke to the suspect</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer shouted profanities at the suspect.</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer attacked the suspect</td>
<td>CRF</td>
<td>Physical Aggression</td>
<td></td>
</tr>
<tr>
<td>The officer’s force unnecessarily continued after the suspect was handcuffed</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The officer could not control him/herself.</td>
<td>CRF</td>
<td>Self-Control/impulsivity</td>
<td></td>
</tr>
<tr>
<td>The tactics used by the officer appeared to be more aggressive than defensive</td>
<td>CRF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C - Meets clarity criteria; R - Meets relevance criteria; F - Meets feasibility criteria; * - no criteria met Factor is listed if Factor criteria are met

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
| 47 | The officer told the suspect he/she was frustrating, aggravating, angering, and/or pissing off the officer | RF |
| 48 | The officer was overly aggressive | CR |
| 49 | The officer held the suspect’s head down too long or too forcefully | CRF |
| 50 | The officer continued hitting the suspect after he/she stopped resisting the officer | CRF |
| 51 | The officer seems unhappy | * Negativism |
| 52 | The officer unnecessarily interrupted the suspect repeatedly | CRF |
| 53 | The officer was verbally abusive toward the suspect (e.g., name calling, demeaning, etc) | CRF |
| 54 | The officer had good intentions during the interaction with the suspect | * |
| 55 | The officer did not intend to harm the suspect. | CRF |
| 56 | The officer applied handcuffs with the intention of hurting the suspect | CRF |
| 57 | The officer applied handcuffs unnecessarily tight | CRF |
| 58 | The officer tried to hurt the suspect | R |
| 59 | The officer’s voice changed (octave, tone) as the situation progressed | CRF Fear |
| 60 | The officer continued hitting the suspect after he was compliant | CRF |
| 61 | The officer antagonized the suspect | CRF Provocation |
| 62 | The officer unnecessarily threw/pushed/pinned the suspect | CRF |
| 63 | The officer seemed irritable | R |
| 64 | The officer lost control of him/herself | CRF Self-Control/Impulsivity |
| 65 | The officer unnecessarily interrupted the suspect | CR |
| 66 | The officer unnecessarily told the suspect to “shut up” | CR |
| 67 | The officer appeared angry | R |
| 68 | The officer feared the suspect | RF Fear |
| 69 | The suspect threatened the officer | CRF |
| 70 | The officer appeared to be threatened by the suspect | CRF |
| 71 | The officer appeared intimidated by the suspect | CRF |

C – Meets clarity criteria; R – Meets relevance criteria; F – Meets feasibility criteria, * - no criteria met Factor is listed if Factor criteria are met

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix E

Video Data

Table E1

Subject Matter Expert Video Rating Data

<table>
<thead>
<tr>
<th>Rater</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Table E2

Subject Matter Expert Video Rating Data – Collapsed

<table>
<thead>
<tr>
<th>Rater</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
REFERENCES

82 ALR 4th 598, Burden of Proof in civil action for making arrest as to reasonableness of force used, p.598.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


