Police Interactions as Complex Social Interactions: Situational Analysis of Police Minority Encounters

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Abstract

The present study explores racial differences in how and when police use force are reflective of emotional and contextual differences in these encounters. Drawing on Holmes and Smith's theory of race and police brutality, as well as the literatures linking emotionality to aggression and linking race to emotional responses, we explore the relationship between race, emotions, and police use of force by systematically coding and analyzing body-worn camera footage of 288 police-citizen interactions, including 70 of which resulting in force. Results suggest that though police are more likely and faster to use force against Black and Latino suspects, the effects of race and ethnicity are no longer significant in models controlling for officer and suspect emotionality, situational intensity, and aggression. Conclusions. The findings highlight the importance of examining the context in which force occurs, as well as the usefulness of studying police interactions through body-worn cameras.

*Keywords:* Police Use of Force, Body-Worn Cameras, Police-Minority Interactions, Contextual Analysis

At the core of policing is the control of specific groups (Reiner, 2010). While these groups are a product of social construction, grounded in history, and amplified by insecurity and uncertainty, it does not diminish the practical reality that differential policing occurs among these groups. These groups go by many names. To Skolnick (1966), they reflected the officers' or agencies' "symbolic assailant", to Wacquant (1999) the "Suitable Enemy", and according to Wilson (2012) and others they stand for the *dangerous* class or *underclass*. While the terms used vary, comparatively these groups disproportionately reflect racial and ethnic minorities. In the context of the United States, Black and Latino communities have been, and continue to be over policed, receiving disproportionate police deployments (Beckett, Nyrop, & Pfingst, 2006; Beckett, Nyrop, Pfingst, & Bowen, 2005; Blasi & Stuart, 2008), aggressive policing policies (Fagan & Davies, 2000; Fagan, Geller, Davies, & West, 2009; Gelman, Fagan, & Kiss, 2012), and are disadvantaged in arrest decisions (Fridell, 2007; Huizinga et al., 2007).

Explanations for why these groups receive a differential experience vary widely, though one of the most commonly tested theories develops from conflict theory (Chambliss, 1999; Garland, 2001) with a specific emphasis on the minority-group-threat hypothesis. Briefly, this hypothesis offers that the perceived threat of a given group explains their differential experience (Holmes, 2000; Kane, 2003). Yet, these aggregate-based explanations have been criticized for not explaining the behaviors of individual officers (Holmes & Smith, 2008) or for not taking into consideration the sociocultural and historical context of specific areas (Smith, 1986).

In response, several microsocial perspectives emerged to discuss this shortcoming, including arguments regarding social identity and in-group/outgroup bias (Holmes & Smith, 2008), as well as implicit bias (Fridell & Brown, 2015; Fridell & Lim, 2016). These microsocial perspectives argue that police, implicitly or explicitly, view minorities differently. There are

many explanations for why these groups are viewed differently, though as race and ethnicity scholars (see Sellin, 1938), as well as policing scholars (Bayley, 2002) offer, the police, like society, are experiencing a conflict between cultures. This is shown in the research of Holmes and Smith (2008, p. 117), arguing that a "cultural chasm" between the closed police subculture and popular stereotypes of minorities result in an increased likelihood that police will view minority behavior as more threatening. Subsequently, officers are likely to experience more severe unconscious mental responses (negative emotional states) when dealing with minority suspects and are therefore more likely to engage in more aggressive conscious mental choices when dealing minorities (Holmes & Smith, 2008).

Interestingly, however, while there is a large and well supported body of literature suggesting that minorities in the United States, and Black communities specifically, are differentially policed, research is less clear in terms of police use of force. For example, Fryer (2016) notes that police in New York City were more likely to use force against black suspects conditional on incident-level characteristics (whether the suspect was arrested or had weapons or contraband on them). Even more recently, Kahn and colleagues (2017) engaged in detailed coding of incident-level characteristics to highlight how use of force varies by race within situations. Specifically, they coded the incident narratives into a set of discrete sequences. Results show that Black and Latino suspects received greater levels of force earlier in the interaction. This is an important insight, as even if there are no racial differences in the ultimate level of force used, results documenting that force is applied more quickly against certain groups are still suggestive of bias.

As it concerns lethal force by the police, the contemporary research remains mixed. Most recently, Wheeler and colleagues (2017) compared use of force incidents in which police officers

drew their weapons and did not fire to incidents in which the police drew their weapons and fire. Wheeler and colleagues (2017) find that African-Americans are less likely to be shot than Whites with such data, though unlike Fryer's work, their focus is solely on the shoot/don't shoot decision. A series of recent studies by James and colleagues (James, Vila and Daratha, 2013; James, James, and Vila, 2016; James, Klinger, & Vila, 2014) have produced support for a so-called "reverse racism effect" suggesting that police are slower to shoot and less likely to make errors when dealing with Black suspects. Though James and colleagues note that their simulation research is more realistic and accurate than prior laboratory studies on police use of force, scholars have cautioned that lab scenarios still do not contain the same risk as actual situations and thus may not reflect actual police behaviors (Fridell, 2016; Terrill, 2016).

When considering the methodological limitations associated with this body of research, it is unsurprising the results are conflicting. In fact, these prior studies are often limited in three very important areas. First, much of this research focuses on officer involved shootings (for an exception, see Fryer, 2016). Though such events are important, the clear majority of police use of force applications is minor (Klinger, 1995). Therefore, research on biased application of force must explore lower level uses of force and exceed *if* force occurs by understanding how it happens (Willits & Makin, 2017). Second, much of this recent work does not model the context in which force is used, in that it either relies on laboratory experiments (James et al., 2016), police incident-data (Fryer, 2016; Klinger, Rosenfeld, Isom, & Deckard2016), or crowdsourced data (Ross, 2015; Nix, Campbell, Byers, & Alpert, 2017).

The central limitation of these studies and their associated methodologies is that they are rarely able to capture when or how these contacts are different. As social ecology theorists express (see Klinger, 1997), the ecological context in which these interactions take place and

have taken place shape the frequency of encounters and nature of those encounters. While some studies try to contextualize these interactions (Terrill & Reisig, 2003), these studies are often resource intensive, expensive, and often do not capture important variables because data is analyzed during observations, or field notes are reviewed well after the interaction has taken place. Third, these studies are often atheoretical, trying to test for bias, without considering the theoretical explanations for why race or ethnicity would matter. Without a guiding theory, it is difficult to find intervening or control variables that are necessary to explain the importance of race in predicting a given outcome. For example, in many of the aforementioned studies, these studies are unable to account for the role of emotional responses in police use of force, which could be tested via the frustration-aggression hypothesis or other suited theories. Given the centrality of emotional responses to prior explanations of race and policing (Holmes & Smith, 2008), not accounting for variability in emotional states is a limitation.

In an effort to overcome these limitations, we argue that observational research is essential to understanding how and when police use force and whether, why, and to what degree race matters. Though there has been prior observational research on police encounters (Klinger, 1995; Terrill, 2003, 2005), such research is an exception to the general trend in police use of force research. Recently, Willits and Makin (2017) introduced an analytical strategy for body-worn camera data, which they suggested could help disentangle the impact of race from community context (see Brunson & Miller, 2006) to isolate the influence race, ethnicity, or gender have on police behavior. Using situational analysis and controlling for contextual factors, this analytical approach allows researchers to explore the nature of how force occurs. This is important, because factors like the time until force is used and the duration of force used could reflect potential racial and ethnic biases in officers. Indeed, Willits and Makin (2017) revealed

differences in *how* use of force occurred, with force used more quickly against Black suspects. However, as with prior studies, their approach was largely atheoretical in explaining why police were quicker in using force, though the police were not more likely to use force against black suspects.

Therefore, this research builds on the theoretical explanations for why police interactions with minorities *are* different to test if police interactions with minority suspects are emotionally different, and if these emotional differences are associated with use of force. If, as some scholars offer, race alone explains the differential response, testing this theory in an area *lacking* concentrated poverty and visible disorder should allow for the detangling of race from environment.  To test this influence, we analyze body camera footage of incidents associated with criminal code violations. These incidents are either officer initiated or dispatch driven. We then measure aggressive behaviors and emotional states associated with these interactions. Second, we explore aggressive behaviors and emotional states within criminal code violations involving use of force.

**Minority-Group-Threat**

A hallmark of the role of police in modern society is the legal authorization to use force (Bittner, 1973). Force is therefore one of many legally authorized mechanisms to control behavior, and its frequency of use and severity is both permitted and restrained by the sociopolitical and historical context (Chevigny, 1995). It is for this reason that use of force is not evenly dispersed in societies and is most often seen in areas with higher levels of conflict (Chevigny, 1995). However, as Wacquant (2008) offers, these differential experiences are not unique to all marginalized groups. In fact, the very experience of racism varies based on the

racial and ethnic group, and is bound to the prominence of intersectionality (Wilson, 2009; Song, 2004; Xu & Lee, 2013).

As this body of research suggests, racial and ethnic minorities receive a differential experience in society, including experiences with police. The basic theoretical model used in policing is the functionalist/orthodox and divided society/radical frameworks (Reiner, 2010; Weitzer, 1995). Most developed western democracies, including the United States, reflect the functionalist model or Orthodox model, wherein the police offer a service to the community (preserving existing order and enforcing laws for the general interest of the community) (Reiner, 2010). On the other end of the continuum is the divided society (Weitzer, 1995) or radical (Reiner, 2010) model, wherein the police secure the interests of the political elite, suppress political opposition, and control the movement and behaviors of marginalized groups, including racial and ethnic minorities or the poor.

One central limitation of this theoretical framework is it exists as a macro level explanation. Said another way, policing may reflect principles of the functionalist/orthodox, while specific communities experience a police response corresponding with the divided society/radical model. This theoretical limitation was noted by Reiner (2010) offering that police researchers must come to understand the radical and orthodox not as models or frameworks. Rather, these models must be conceptualized as a continuum, wherein the sociodemographic, political, and historical context of an area influences the frequency of interactions and shapes how those interactions unfold overtime.

This body of knowledge connects largely to the social ecology of police work, attempting to explain why specific areas and specific groups experience a differential experience with police (Klinger, 1997). Specific to racial and ethnic differences, there is an extensive body of research

showing racial and ethnic differences with comprehensive works dedicated to discussing these disparate outcomes (see Walker, Spohn, & DeLone, 2012; Gabbidon & Greene, 2013).

While there is a large body of research showing differential experiences by minority groups, the most consistently applied theory, with comparative efficacy, is the minority-group-threat hypothesis (Goldkamp, 1976; Smith & Holmes, 2014; Jacobs & O'Brien, 1998; Liska & Yu, 1992; Nowacki, 2015; Sorensen, Marquart, & Brock, 1993). According to Smith and Holmes (2014), this theory suggests, "the presence of large minority populations, whether real or perceived, heightens fear of crime among white citizens" (p. 85) and insecurity coupled with uncertainty mandates the police control these groups through formal and informal sanctions. Use of force then becomes one mechanism of social control, which exists on a continuum of routine to excessive. Specific to the latter, Jacobs and O'Brien (1998) show that police killing of Black citizens are disproportionately greater in areas with higher Black populations and in areas with greater Black population growth. Specific to non-lethal force, Smith and Holmes (2014) show that sustained excessive force complaints are greater in highly segregated cities.

Deciding whether use of force or excessive use of force links to an actual bias in police behaviors is essential, as the evidence on this point is mixed. Though there may be bias in the rates in which police use force, this does not necessarily imply bias in the decision to use force. There are times that force needs to occur, and its application cannot be simplified and reduced to a negative outcome. Though many scholars working from the conflict or minority-group-threat perspective take evidence of a link between minority group threat and police use of force rates as evidence of bias, others suggest that this is a misinterpretation of the evidence suggesting environmental factors such as neighborhood crime, are powerful predictors (Terrill & Reisig, 2003. Research suggests, for example, that disproportionate use of force against Black suspects

is reflective of the types of encounters in which police interact with Black suspects (known as the place hypothesis). Fyfe (1978), for example, suggests that Black suspects shot by the police are far more likely to have firearms than whites are. Moreover, White (2002) argues that the threat posed by Black suspects is at least partially responsible for the disproportionate shooting of Black males. Similarly, research suggests that the differential rate at which police use force against Blacks is spurious due to the confounding factor of neighborhood conditions (Brunson & Miller, 2006; Terrill & Reisig, 2003). However, this body of research assumes that interactions with black suspects *are* different, without directly measuring if, when, and how these interactions are different.

**Police Interactions as Complex Social Interactions**

Though this body of research on police use of force is comprehensive and varied, absent from this research are objective measures that could detect, at the situational level, racial bias. For example, at the situational level, what does implicit bias look like? If policing is best studied as a complex social interaction, research must account for the link between situational/emotional dynamics and racial variation in police encounters, including use of force. To date, no research has tried to explore the social psychology of police-community interactions. This is regrettable, both because emotions are central to understanding violence more broadly, as we will argue here, but also because one of the clearest theoretical arguments as to why the decision to use force might be racially biased focuses on emotional responses (Holmes & Smith, 2008).

Holmes and Smith (2008) express that while traditional approaches to studying race and police, like conflict theory, offer a general framework for understanding why police agencies might direct disproportionate resources to the policing of minority communities, these approaches do not explore why police agencies would engage in such work, given the costs

associated with inappropriate use of force (Littlejohn, Smitherman, & Quick, 1984). They further argue that conflict theorists ignore the agency of police departments, which is highly problematic given the central focus of safety that is emphasized in police culture (Herbert, 1998). Indeed, Holmes and Smith (2008) argue that officer violence is often the response to perceived, real or otherwise, risks to their personal safety.

Race matters, they suggest, because of a dynamic interplay of social and emotional group processes. Specifically, they argue that "police officers and minority citizens see one another as members of entirely different worlds" (Holmes & Smith, 2008, p. 116) and that police view minorities as "criminally inclined and prone to violence" while minorities often view police as "authoritarian thugs".  Thus, researchers hypothesize that police-minority interactions are primed for aggressive encounters. It is hypothesized that emotions play a central role in this process for the police, as they are more likely to have unconscious and automatic negative emotional responses when dealing with minority citizens. As a gross simplification, Holmes and Smith (2008) fundamentally argue that encounters with minorities result in outgroup stereotype activation, which increases perceptions of risk, which then generates negative emotional responses like anger and fear, which increase the chances that police use more force than necessary in a given situation.

A wide variety of psychological, sociological, and criminological theories link emotions to violence. Emotionality is central to Collins' (2009) micro-sociological theory of violence, Agnew's (1992) general strain theory, Van Gelder's (2013) hot and cold perspective on criminal decision making, and has a major role in a variety of other perspectives, including control balance theory (Tittle, 2004) and situational action theory (Wikström & Treiber, 2009). Yet the oldest and most developed tradition of examining the link between emotions and violence is the

work building from Dollard and colleagues' (1939) Frustration-Aggression Hypothesis. We emphasize this work here, as much of the work done to extend this perspective is congruent with Holmes and Smith's (2008) theory of race and police brutality. The expansions focusing on outgroup categorization and threat perceptions overlap well with Holmes and Smith's (2008) work and can help to offer a more comprehensive theoretical grounding to hypothesize why minorities – particularly young men of color – experience different interactions with the police than do whites.

**Frustration-Aggression Hypothesis**

The original Frustration-Aggression Hypothesis offered a simplistic explanation to aggression in that "Aggression is always a consequence of frustration" (Dollard et al., 1939, p.1). However, while the explanation was a broad generalization, the authors introduced the complexity of understanding frustration. To Dollard and colleagues (1939), frustration was best understood as any blockage of an individual's goals. Moreover, frustration manifested as external to the achieved goal. Said another way, the greater the individual's perceived return from achieving the goal and the higher frequency at which the goal is blocked, the greater is the likelihood that an individual would act aggressively towards the subject of the goal blockage. Reformulations of the Frustration-Aggression Hypothesis have specified that aggressiveness is dependent upon the degree to which the goal blockage produces negative affect, and individuals are more likely to act aggressively when this perceived aversive goal blockage is perceived as intentional and unjust (Berkowitz & Harmon-Jones, 2004; Berkowitz, 1989). Though intentional provocation is still regarded as the strongest predictor of aggression (Groves & Anderson, 2016; Anderson & Bushman, 2002), many scholars have added various factors to help the prediction of

aggressive behavior through a dynamic interplay between stress, cognitive scripts, threat appraisals, and resulting behaviors.

When an individual experiences an acute stressor, such as a police officer responding to a call or high-intensity situation, this stressor sets off a chain of cognition whereby the individual appraises the event and evaluates the proper response based on cognitive scripts, or schemata (Groves & Anderson, 2016; DeWall, Anderson, & Bushman, 2011; Berkowitz, 1989; Lazarus & Folkman, 1984). These scripts are cognitive guides created throughout an individual's lifetime that are comprised of memories, observations, internalized values and beliefs, and judgments of proper responses (Grandey, Dickter, & Sin, 2004; Anderson & Bushman, 2002; Huesmann, 1988). If an individual has developed aggressive scripts through observation, prior behavior, or internalized values, he or she is more likely to behave aggressively towards the source of an acute stressor, thus reinforcing an aggressive script-appraisal-behavior process (Anderson & Bushman, 2002; DeWall et al, 2011; Huesmann, 1988).

These cognitive scripts can also include stereotypes, which are learned (through both socialization and interpretations of personal experiences) associations between groups and their attributes, often categorized automatically by the brain to efficiently process information (Cox & Devine, 2015; Miller, Maner, & Becher, 2010). This categorization process likewise aids in the avoidance of harm by making associations between groups and their perceived level of threat (Miller et al., 2010), with the brain often engaging in self-protective processing when meeting members of an outgroup (Cosmides, Tooby, & Kurzban, 2003; Kurzban, Tooby, & Cosmides, 2001; Miller et al., 2010). Environmental and contextual cues tend to activate self-protective outgroup biases, with darkness or nighttime, masculinity of the outgroup member, and angry facial expressions all contributing to heightened threat appraisals for an individual meeting an

outgroup member (Miller et al., 2010; Öhman & Mineka, 2001; Quillian & Pager, 2001; Schaller, Park, & Mueller, 2003). Internal factors within the individual perceivers that enhance these outgroup-biased threat appraisals include fear and chronic beliefs of danger (Miller et al., 2010; Schaller et al. 2003), the latter of which is a prevailing cultural theme within much of United States police occupational culture (Crank, 2004).

These environmental cues and their activation of these outgroup-biased threat appraisals, as well as the pervasive cultural stereotypes of minorities – particularly Black men – being associated with criminality or violence (Correll, Urland, & Ito, 2006; Cox & Devine, 2015; Miller et al., 2010; Quillian & Pager, 2001) have additive effects on stress-induced threat appraisals. These appraisals, when combined with the aforementioned aggressive scripts and goal blockages, may increase the likelihood of a police officer responding with force more quickly or at higher levels when dealing with a minority (particularly minority male) suspect than when this officer is responding to a situation with a White suspect. These situations may also escalate in emotional intensity when minority suspects who have experienced past unjust encounters with the police respond with the same injustice-driven frustration as discussed by Berkowitz and Harmon-Jones (2004).

Taken together, Holmes and Smith's (2008) work on race and police use of force, the Frustration-Aggression Hypothesis, and work focusing on outgroup bias and threat perceptions produce a set of specific and testable hypotheses related to race and police use of force.

*Hypothesis 1:* Police encounters involving minorities are more likely to result in police use of force and the faster application of force.

*Hypothesis 2:* Police encounters involving minorities display higher levels of emotionality, intensity, and aggression than those with white suspects.

*Hypothesis 3*: Police encounters with higher levels of emotionality, intensity, and aggression are more likely to result in police use of force and in the faster application of force

*Hypothesis 4*: There are no racial differences in the probability that force is used or the time at which force is used, controlling for emotional responses, situational intensity, and aggression.

**Methods**

*Data*

Data for this research includes observational data in the form of unredacted body worn camera footage recorded between 2013 and 2016. Data were acquired from a police agency that has less than 100 officers serving a smaller community (under 100,000 residents). The agency also provided basic information related to each incident, though the agency did not give full access to incident reports. This agency's use of force policy requires officers to file a report when force is used to subdue (restrain) an individual. Recognizing force is a rare occurrence in police interactions, we use data from 4 years (2013-2016) to examine incidents involving use of force. Additionally, officers must "tag" the archival footage under the category "Use of Force".

Our comparison incidents were constrained to footage that was categorized as "Patrol Initiated" and "Incident Call" criminal code violations occurring between July 2016 and December 2016. Our decision to limit analysis to these interactions was to capture those incidents were use of force is more likely to occur and where agency policy requires that officers activate their BWC. The dataset has 288 number of incidents, including 80 criminal code violations initiated by the police officer where no force was used, 138 incidents where the officer was dispatched to the scene and no force was used, and 70 use of force incidents.

Recognizing BWC footage gives an unfiltered representation of police-citizen interactions, and that coding video footage requires some level of researcher judgment, we

employ a two-stage coding process to minimize error. Stage one uses team coding, where coders annotate videos individually and the annotations are compared to assess inter-rater reliability. Stage 2 uses a consensus coding approach to reconcile individual items. Items not meeting consensus were marked for review by the lab manager and research team. In total, the research assistants for this project coded a total of 4687 hours of footage.

Department policy requires officers to activate their BWCs as they approach an incident, thus most videos start with the officer in the car or walking toward a scene. For instances where force was used, police employed it on average, at 7 minutes and 09 seconds into the interaction and applied force three times per incident (n=3.57). Ninety percent (n=63) of force incidents occurred with male suspects. In addition, 64.3% (n=45) of those experiencing use of force were white, with Hispanic and black suspects constituting 11.4% (n=8) and 14.3% (n=10) of cases respectively.

For the 218 incidents that did not involve force, 63.3 percent (n=138) were incidents in which police respond to calls for service and 36.7 percent (n=80) of incidents were police initiated. Sixty-four percent (n=147) of incidents occurred with male suspects. In addition, of the 218 incidents, 77.9% (n=169) of suspects were white. Hispanic and black suspects were 6.9% (n=15) and 8.8% (n=19) respectively. Other racial groups were represented in 13.4% of the remaining incidents.

*Variables*

*Dependent Variables.* Our first dependent variable is a simple binary measure of whether force was used or not. In addition to this, and following with the work conducted by James, James, and Vila (2016) and Willits and Makin (2017), we also examine time until force is used as a survival variable showing the time until force was used, with incidents in which force was

not used being recorded as censored. To calculate time to force, we marked the time point at which the officer *clearly* made it known to the suspect that they were a police officer and calculated the duration of time before the initiation of force.

*Independent Variables.*

**Emotionality**. To capture the emotionality of the incident, we coded measures of situational intensity, the emotional state of the officer, the emotional state of the suspect, and the level of aggression of the incident. Intensity is coded as a binary variable, where the coders were instructed to assign a value of 1 to incidents that reflected an extreme degree of energy and feeling.  To measure levels of aggression, coders assigned values on a scale from 1 to 3 (where 1 = standard encounter, 2 = heightened levels of aggression, and 3 = extreme levels of aggression on the part of the suspect).  For emotional states of both officers and suspects, coders used a 4-point scale where 0 indicated a calm, nearly emotionless state and a 3 indicated a high emotional state (depicted by extreme signs of rage, like uncontrolled yelling, or distress, marked by wailing).

*Use of Force Incidents.* For the suspect's emotional state, 37.1 percent (n=26) of incidents were low, 48.6 percent (n=34) were medium, and 14.3 percent (n=10) were high. For the officer's emotional state, 61.4 percent (n=43) of incidents were low, 35.7 percent (n=25) were medium, and 2.9 percent (n=2) were high. Furthermore, 55.7 percent (n=38) of incidents were high in intensity. Lastly, 30 percent (n=21) of incidents had no signs of aggression, 55.7 percent (n=39) had a medium level of aggression, and 14.3 percent (n=10) had a high level of aggression.

*Non-Use of Force Incidents.* For the suspect's emotional state, 8.7 percent (n=19) of incidents were emotionless, 73.9 percent (n=161) were low, and 17 percent (n=37) were medium, and 0.5 percent (n=1) were high. For the officer's emotional state, 22.9 percent (n=50) of incidents were emotionless, 74.3 percent (n=162) were medium, and 2.8 percent (n=6) were medium. Furthermore, 3.2 percent (n=7) of incidents were high in intensity. Lastly, 86.7 percent (n=189) of incidents had no signs of aggression, 12.4 percent (n=27) had a medium level of aggression, and 0.9 percent (n=2) had a high level of aggression.

**Suspect Characteristics.** We also include gender and race/ethnicity of the suspect in our analysis. Gender is coded as a dummy variable, indicating if the suspect is male. Race/ethnicity is measured with a set of three dummy variables (White, Black/Hispanic, and Other Race), with White used as the reference category in the analysis below. Coders made racial determinations based on BWC footage, which often would include audio descriptions of suspects and/or the statement of suspect names. For incidents involving use of force, we were able to further verify racial codes using additional information provided by the police agency, though this was not possible in incidents not involving use of force. We were unable to include officer demographics as the vast majority of the officers are male and predominately white.

**Incident Characteristics.** We include a day and night indicator, suspect arrested, whether bystanders are present, and communication balance to capture incident characteristics. Day and night is coded as a dummy variable, indicating if the incident occurred at night. Suspect arrested is coded as a dummy variable, indicating the suspect was arrested. Bystanders present is also coded as a dummy variable, indicating if bystanders are present. Descriptive statistics on all measures of emotionality, suspect characteristics, and incident characteristics are presented in Table 1.

***INSERT TABLE ONE ABOUT HERE***

*Analytical Strategy*

To analyze the role of situational emotionality, intensity, and aggression on police use of force and examine whether these factors explain any racial patterns related to use of force, we present a series of regression models. Given the relatively small sample size, we present results comparing White suspects to Latino and Black suspects to suspects of a different race/ethnicity. Though we are aware of the dangers of conflating Latino and Black experiences as related to police activities, early exploratory data analysis suggested that the probability that force was used and the timing of force were different for individuals from these two groups than from individuals coded as white or as being another race/ethnicity. Indeed, preliminary bivariate models gave support for hypothesis 1. Specifically, early results showed that police are statistically significantly more likely to use force against Black and Latino suspects and use force faster against them as well. A simple bivariate logistic regression model showed that the odds were 202% ($e^{1.105} = 3.019$) greater that force was used against Blacks and Latino than others, while bivariate Cox regression models indicate that the hazard ratio was 123% greater ($e^{.803} = 2.232$) for individuals in these groups.

Kaplan-Meier curves of the time until force by race and ethnicity status are presented below in Figure 1, which further provide support for hypothesis 1. This plot shows that the survival function for suspects coded as Black or Latino quickly drops below the lines for White or Other Race, suggesting that across the life-course of a police encounter, the risk of survival (or, in this case, of not having force applied) is lower for Blacks and Latinos than for others.

***INSERT FIGURE 1 ABOUT HERE***

To test Hypothesis 2, that encounters involving minority suspects were more likely to involve higher levels of situational emotionality, intensity, and aggression, we present another series of bivariate logistic and ordinal logistic regression models in which the dummy variable for Black or Latino suspects is used to predict these situational factors. Table 2, below shows these results.

***INSERT TABLE 2 ABOUT HERE***

These results offer mixed support for hypothesis 2, as the Black or Latino indicator variable is statistically significantly related in a positive direction to both situational intensity and aggression. Specifically, the odds that a situation was coded as intense were 102% (e.$^{.701}$ = 2.016) greater when a Black or Latino suspect was involved, while the odds that a situation was coded as aggressive were 150% (e$^{.916}$=2.499) greater for situations involving Black or Latino suspects. Interestingly, minority status was not significantly related to either officer or suspect emotional state.

Next, to test hypotheses 3 and 4, we present a series of logistic regression models with use of force as the dependent variable, and Cox regression models with time until force as the dependent variable. Our goals are first to examine whether and how situational emotions, intensity, and aggression are related to use of force and time at which force is used (hypothesis 3) and next to figure out if these factors mediate the relationship between minority status and use of force related outcomes (hypothesis 4). As there was considerable collinearity between emotional states, intensity, and aggression, we include these factors in separate models for both the logistic

regression (Table 3) and Cox regression models (Table 4). In both cases, models 1 and 2 include

suspect and officer emotionality, models 3 and 4 include situational intensity, and models 5 and

6 include situational aggression. In each case, we first present a model that only uses

emotionality or intensity or aggression to predict use of force and then a larger model, which

includes these factors, measures of race and ethnicity, and control variables.


***TABLE 3 ABOUT HERE***


       The logistic regression models give general support for hypotheses 3 with officer and

suspect emotionality, situational intensity, and situational aggression significantly predicting use

of force in all six models. The magnitude of the coefficients for these variables are quite large. In

model 2, for example, a 1-unit increase in the emotional state of the officer is associated with an

over 1100% ($e^{2.564}$ = 12.988) increase in the odds that force is used. Similarly, situations with

high levels of intensity and situations with higher levels of aggression are all both significantly

statistically and substantively more likely to result in use of force. Though odds-ratios of this

scale might often call warning to the potential for overfitting, in this case, the clear majority of

incidents in which force is used involve high levels of officer and suspect emotionality, are

coded as intense, and are coded as highly aggressive. This result is not particularly surprising,

indeed, as it would be highly problematic if police used force often in calm interactions.

       These models also give general support for hypothesis 4. Unlike the basic bivariate

models described above, race and ethnicity is not a significant predictor of use of force in models

4 and 6. Once emotionality of the officer and suspect, situational intensity, and aggression are

accounted for, police are no more likely to use force against Blacks or Latinos than White suspects. Interestingly, the same is not true for model 2.

Next, we examine the time until force using a set of Cox proportional hazard models. Though the logistic regression models demonstrated general support for hypotheses 3 and 4, we have previously argued that racial bias in use of force can also manifest in how force is used. In particular, police may be more likely to use force quickly against minority suspects. The results of these models are displayed in table 4.

***INSERT TABLE 4 ABOUT HERE***

Like the logistic regression models, these models give strong support for hypothesis 3. Officer and suspect emotionality, situational intensity, and aggression are all statistically significantly and positively related to the time until force is used. Put simply, the police use force faster in scenarios that are highly emotional, intensive, and aggressive.

These models also give strong support for hypothesis 4. Though preliminary models and the Kaplan Meier curve above show that force is used faster against Black and Latino suspects, these differences are not significant in models 2, 4, or 6 in table 4. This suggests that the instantaneous risk that force is used against Black and Latino suspects is no greater than for other suspects, once emotionality, intensity, and aggression are accounted for.

**Discussion**

This is the second study to use police body-worn-camera footage as a data source to study police interactions with suspects. Our results support prior research suggesting that police interactions with minority suspects are qualitatively and quantitatively different. Police encounters with minority suspects appear to have a higher probability of having force used and that force occurs quicker in the interaction. The latter was found in the study conducted by Willits and Makin (2017) and seems to further support the findings of Kahn and colleagues (2017) in that force occurs quicker in an interaction for minority suspects. While the prior two studies are important steps towards examining the micro social context of police use of force, or police encounters for that matter, these studies did not treat police interactions as complex social interactions. While they applied situational analysis, they did not try to measure the degree to which an encounter was complex or "messy".

Our intent to model police interactions, as inherently complex social interactions, was the introduction of proxy measurements of emotional states, levels of aggression, and intensity. Holmes and Smith (2008) argued that emotional states are associated with use of force. Our results do support that emotional states are associated with use of force and appear to influence how quickly that force occurs in the interaction. Additionally, we do find that police are more likely and are faster to use force when situations have higher degrees of intensity and when the suspect is acting in an aggressive manner towards the officer. This is not surprising, given the decision to use force often occurs within intense situations. What is interesting is that police, in our study, are more likely and faster to

use force against minorities because situations involving minorities are more likely to be intense and display higher levels of aggression.

The reasons for this difference is important when taking into consideration that when we control for the emotionality (on the part of the suspect and officer), the intensity, and aggression of the incident, the odds that force occurs against a minority suspect are similar to white suspects. Prior literature would suggest that the suspects demeanor is influencing the officer's reaction (Mastrofski, Reisig, & McCluskey, 2002), which may be primed by the lived or shared experiences of minority suspects. In fact, suspects acting aggressively significantly decreases the time until force is used. Our results suggest that there is a potential feedback loop that is influencing when force is used and how quickly that force is used. However, again, our results are unable to answer why police encounters with minority suspects display higher intensity and aggression on the part of the suspect. Could it be that police interactions with minority suspects are more intense and display hostility because the interaction is primed because of prior experiences with the police. As Hemmens and Levin (2000) introduced, aggressive police procedures increase hostility toward the police (p. 493).

Willits and Makin (2017) suggested the number of bystanders could account for the difference, as they noticed that police interactions with minorities most often occurred within the proximity of others. However, the number and proximity of bystanders' present were not found to be significantly related to the use of force (either if it occurred or how quickly it occurred) (Willits & Makin, 2017).

A potential explanation, and one that our study is unable to test, is that the initial contact may start a "chain reaction," due to situational circumstances increasing the experienced intensity of the interaction, reflecting in the suspect's demeanor and the officer's emotional state. As our results demonstrate, officer emotionality has a strong influence on when force occurs in the interaction. However, this emotionality seems to be driven by situational intensity and aggression circumstances.

**Future Research**

In light of the discussion above, future research should attempt to better operationalize and understand the separate and combined contributions of officer and suspect emotionality, situational intensity and aggressive behavior contexts. In particular, it may be useful to use biometric data indexing officer acute and chronic psychological stress as a specific emotional factor in coalition with BWC footage to investigate how these factors may be contributing to use of force. For example, in testing for bias, it would be important to examine if emotional factors (detected biometrically) influence the level of force used and the duration that force is applied.

Further, with regard to situational factors, the current study examined time of day and location of incident, though many other factors are likely of equal or greater import in potentiating use of force. Any elements that may amplify the perception of threat for either the suspect or the officer (i.e., presence of alcohol or drugs, darkness or other limitations to vision, repeated contact with a particular suspect or officer, etc.) should be incorporated to understand how these elements are contributing to these complex social interactions.

**Limitations**

While our models were successful in finding when race influences officer behavior, and when suspect demeanor was more successful in predicting when and how force occurred, there are several specific limitations of this research. First, and most importantly, these results are not meant to be generalizable. Data obtained originates from a single agency in a particular social setting, with analysis reflecting incidents identified as criminal code violations. This has two important implications. First, we analyzed a relatively small number of interactions. Second, given that the incidents all involved criminal code violations, we are unable to discuss whether interactions involving minorities are different in other types of police contacts. We present these results and our analytical strategy as a means of invigorating observational research using body-worn camera footage, which we believe allows for an actual examination of how and when police use force against minorities, and as an effort at guiding research on use of force to examine the underlying theoretical processes. Yet, our results are necessarily exploratory and it would be disingenuous and dangerous to generalize our findings. Indeed, more recorded observational research from both rural and urban locations with large and small police agencies is needed to build a broad knowledge-base about how the potential interplay between race, situational dynamics, and police use of force.

Second, given the context in which the footage was collected, it was necessary to combine ethnic groups. More data is needed to parse out differences between different racial and ethnic groups. Related to this, the relatively limited number of observations involving minority suspects also limited our ability to examine interactions. Indeed, preliminary results suggested that situational risk

factors were especially high in situations involving minority males, though we felt uncomfortable presenting these results given the lack of incidents involving minority women.

A third important limitation is that while we employ a rigorous coding strategy, our identification of emotional states, intensity, and aggression relies on subjective human coder appraisals of visual and audio information. One potential consequence is that the coders themselves might view minority suspects as more aggressive and situations involving minorities as more intense. Literature suggests there is a cognitive difference in the perception of threat and selective attention for black men (see Ito & Urland, 2005; Trawalter, Todd, Baird, & Richeson, 2008), that white females are more likely to be more attentive to Black male faces, which includes the assessment of threat. Future research should explore other methods for examining situational dynamics, including potentially research examining measurable audible markers of stress and emotionality. Conducting a bias assessment on coders, would also offer an additional means of determining to what extent is the coders race or ethnicity influencing the coding of the variables. While the coders are mixed across gender, race, and ethnicity, their implicit or explicit bias could be influencing the results. Further, a great deal of research suggests that the camera angle and shot length influence our perceptions of individuals and their social meaning to the viewer (see Meyerowitz, 1986). This may mean that visual elements of the camera footage itself is playing a role in the social perceptions of the interactions and influencing the coding of emotionality, intensity and aggression.

Related to this, there are several factors which might also influence use of force outcomes and be related to suspect race which were missing in the current analysis. We are unable to account for the location of an incident, which is problematic as prior research

suggests that neighborhoods may mediate race effects (Terrill and Reisig, 2003). Similarly, we are unable to determine if any of these interactions are repeat contacts, which might vicariously prime police officers in one way or another for a specific type of interaction. Similarly, we do not have the ability to measure alcohol and drug use in the non-use of force interactions, which has previously been linked to use of force outcomes (Willits & Makin, 2017; Kaminski et al. 2004). Lastly, we note that we are unable to account for officer characteristics in the current study. This is regrettable as training, experience, and, potentially, implicit biases among the officers might help further explain when and how police use force against minority suspects. Taken as a whole, it is likely that our model suffers from some form of omitted variable bias. Still, the results regarding situational factors and police use of force outcomes is strong, as is the mediation effect on race.

Lastly, though our study examined several theoretical concepts, which have not been explored in recorded observational research in the past, police use of force incidents are dynamic situations. As Collins (2009) argues, violence typically follows a back and forth process with emotional buildup and frustration. While we measured a number of time-based variables, our overall analysis of the incident is static in that we are simply exploring variation in the final outcome of police-citizen interactions. Though the coding of such camera footage data is likely to be extremely time intensive, research following Kahn and colleagues' (2017) approach of dividing incidents into specific time sequences is likely to be extremely valuable in understanding the dynamics behind when and how police use force, as well as understanding the role that race might play in this process.

**Conclusion**

To summarize, it appears that once accounting for intensity, emotionality, and aggression, the odds that force occurs against minority suspects are similar to that of white suspects. However, our results suggest that police interactions with minority suspects display higher levels of intensity, emotionality, and aggression. Why these interactions are qualitatively different is an important question that our present study is unable to answer. It is our hope that future researchers will integrate our methodology into mixed-method designs to understand what shapes these interactions, and more importantly what can be done to ameliorate the intensity, emotionality, and aggression within these contacts.

## References

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology, 30*(1), 47-88.

Anderson, C.A. & Bushman, B.J. (2002). Human Aggression. *Annual Review of Psychology, 53*, 27-51.

Bayley, D. (2002). Policing Hate: What can be done? *Policing & Society, 12*(2), 83-91.

Beckett, K., Nyrop, K., & Pfingst, L. (2006). Race, Drugs, and Policing: Understanding Disparities in Drug Delivery Arrests. *Criminology, 44*(1), 105-137.

Beckett, K., Nyrop, K., Pfingst, L. & Bowen, M. (2005). Drug Use, Drug Possession Arrests, and the Question of Race: Lessons from Seattle. *Social Problems, 52*, 419–441.

Berkowitz, L. & Harmon-Jones, E. (2004). Toward an Understanding of the Determinants of Anger. *Emotion, 4*(2), 107-130.

Berkowitz, L. (1989). Frustration-Aggression Hypothesis: Examination and Reformation. *Psychological Bulletin, 106*(1), 59-73.

Bittner, E. (1973). *The functions of the police in modern society*. National Institute of Mental Health, Center for Studies of Crime and Delinquency.

Blasi, G., & Stuart, F. (2008). *Has the Safer Cities Initiative in Skid Row Reduced Serious Crime?* Los Angeles, CA: UCLA School of Law.

Brunson, R. K., & Miller, J. (2006). Young black men and urban policing in the United States. *British journal of criminology, 46*(4), 613-640.

Chambliss, W. J. (1999). *Power, politics, and crime*. Boulder, CO: Westview Press.

Chevigny, P. (1995). *Edge of the knife: Police violence in the Americas*. New York, NY: New Press.

Collins, R. (2009). *Violence: A micro-sociological theory*. Westport, CT: Greenwood Publishing Group.

Correll, J., Urland, G.R., & Ito, T.A. (2006). Event-related potentials and the decision to shoot: The role of threat perception and

    cognitive control. *Journal of Experimental Social Psychology, 42*, 120-128.

Cosmides, L., Tooby, J., & Kurzban, R. (2003). Perceptions of race. *Trends in Cognitive Sciences, 7*, 173-179.

Cox, W.T.L. & Devine, P.G. (2015). Stereotypes Possess Heterogenous Directionality: A Theoretical and Empirical Exploration of

    Stereotype Structure and Content. *PLoS ONE, 10*(3), 1-27.

Crank, J.P. (2004). *Understanding Police Culture, 2nd Edition*. Cincinnati, OH: Anderson Publishing Company.

DeWall, C.N., Anderson, C.A., & Bushman, B.J. (2011). The general aggression model: Theoretical extensions to violence.

    *Psychology of Violence, 1*(3), 245-258.

Dollard, J., Doob, L., Miller, N., Mowrer, O.H., & Sears, R. (1939). *Frustration and Aggression*. New Haven, CT: Yale University

    Press.

Fagan, J., & Davies, G. (2000). Street Stops and Broken Windows: Terry, Race and Disorder in New York City. *Fordham Urban Law*

    *Journal, 28*, 457–504.

Fagan, J., Geller, A., Davies, G., & West, V. (2009). Street Stops and Broken Windows Revisited: The Demography and Logic of

    Proactive Policing in a Safe and Changing City. *Columbia Law School Public Law & Legal Theory Working Paper Group*.

Fridell, L. A. (2007). *Fair and Impartial Policing: Recommendations for the City and Police Department of San Francisco*. San Francisco, CA: San Francisco Office of the Mayor.

Fridell, L. A. (2016). Racial Aspects of Police Shootings. *Criminology & Public Policy, 15*(2), 481-489.

Fridell, L., & Brown, S. (2015). Fair and impartial policing: A science-based approach. *The Police Chief, 82*(6), 20-25.

Fridell, L., & Lim, H. (2016). Assessing the racial aspects of police force using the implicit-and counter-bias perspectives. *Journal of Criminal Justice, 44*, 36-48.

Fryer, R. (2016). *An empirical analysis of racial differences in police use of force*. National Bureau of Economic Research Working Paper, 22399.

Fyfe, J. J. (1978). *Shots fired: An examination of New York City police firearms discharges* (No. 78-14335 UMI). State University of New York at Albany, School of Criminal Justice.

Gabbidon, S. L., & Greene, H. T. (2013). *Race, crime, and justice: A reader*. New York, NY: Routledge.

Garland, D. (2001). *The Culture of Control: Crime and Social Order in Contemporary Society*. Oxford, U.K.: Oxford University Press.

Gelman, A., Fagan, F., & Kiss, A. (2012). An Analysis of the New York City Police Department's 'stop-and-Frisk' Policy in the Context of Claims of Racial Bias. *Journal of the American Statistical Association, 102*, 813–823.

Goldkamp, J. S. (1976). Minorities as victims of police shootings: Interpretations of racial disproportionality and police use of deadly force. *The Justice System Journal, 2*(2), 169-183.

Grandey, A.A., Dickter, D.N., & Sin, H. (2004). The customer is *not* always right: customer aggression and emotion regulation of service employees. *Journal of Organizational Behavior, 25,* 1-22.

Groves, C.L. & Anderson, C.A. (2016). Aversive Events and Aggression. In Bushman, B.J. (Ed.), *Aggression and Violence: A Social Psychological Perspective.* New York, NY: Routledge.

Hemmens, C. & Levin, D. (2000), 'Resistance is Futile: The Right to Resist Unlawful Arrest in an Era of Aggressive Policing', Crime and Delinquency, 46: 472–96.

Herbert, S. (1998). Police subculture reconsidered. *Criminology, 36(2),* 343–369.

Holmes, M. D. (2000). Minority threat and police brutality: Determinants of civil rights criminal complaints in US municipalities. *Criminology, 38(2),* 343-368.

Holmes, M. D., & Smith, B. W. (2008). *Race and police brutality: Roots of an urban dilemma.* Albany, NY: SUNY Press.

Huesmann, R.L. (1988). An Information Processing Model for the Development of Aggression. *Aggressive Behavior, 14,* 13-24.

Huizinga, D. H., Thornberry, T., Knight, K., Lovegrove, P., Loeber, R., Hill, K., & Farrington, D. P. (2007). *Disproportionate Minority Contact in the Juvenile Justice System: A Study of Differential Minority Arrest/referral to Court in Three Cities: A Report to the Office of Juvenile Justice and Delinquency Prevention.* Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Ito, T. A., & Urland, G. R. (2005). The influence of processing objectives on the perception of faces: An ERP study of race and gender perception. *Cognitive, Affective, & Behavioral Neuroscience, 5(1),* 21-36.

Jacobs, D. & O'Brien, R. (1998). The Determinants of Deadly Force: A Structural Analysis of Police Violence. *American Journal of Sociology, 103*(4), 837-862.

James, L., James, S. M., & Vila, B. J. (2016). The Reverse Racism Effect: Are Cops More Hesitant to Shoot Black than White Suspects? *Criminology & Public Policy, 15*(2), 1-23.

James, L., Klinger, D., & Vila, B. (2014). Racial and ethnic bias in decisions to shoot seen through a stronger lens: experimental results from high-fidelity laboratory simulations. *Journal of Experimental Criminology, 10*, 323-340.

James, L., Vila, B., & Daratha, K. (2013). Results from experimental trials testing participant responses to White, Hispanic and Black suspects in high-fidelity deadly force judgment and decision-making simulations. *Journal of Experimental Criminology, 9*(2), 189-212.

Kahn, K. B., Steele, J. S., McMahon, J. M., & Stewart, G. (2017). How suspect race affects police use of force in an interaction over time. *Law and Human Behavior, 41*(2), 117-126.

Kaminski, R. J., Digiovanni, C., & Downs, R. (2004). The use of force between the police and persons with impaired judgment. *Police Quarterly, 7*(3), 311-338.

Kane, R. J. (2003). Social control in the metropolis: A community-level examination of the minority group-threat hypothesis. *Justice Quarterly, 20*(2), 265-295.

Klinger, D. A. (1995). The Micro-Structure of Nonlethal Force: Baseline Data from an Observational Study. *Criminal Justice Review, 20*(2), 169-186.

Klinger, D. A. (1997). Negotiating order in patrol work: An ecological theory of police response to deviance. *Criminology, 35*(2), 277-306.

Klinger, D., Rosenfeld, R., Isom, D. & Deckard, M. (2016). Race, crime, and the micro- ecology of deadly force. *Criminology and Public Policy, 15,* 193-222.

Kurzban, R., Tooby, J., & Cosmides, L. (2001). Can race be erased? Coalition computation and social categorization. *Proceedings of the National Academy of Sciences, 98,* 15387-15392.

Lazarus, R.S. & Folkman, S. (1984). *Stress, Appraisal, and Coping.* New York, NY: Springer Publishing Company, Inc.

Liska, A. E., & Yu, J. (1992). Specifying and testing the threat hypothesis: Police use of deadly force. In A. E. Liska (Ed.), *Social Threat and Social Control* (pp. 53-68). Albany, NY: State University of New York Press.

Littlejohn, E. J., Smitherman, G., & Quick. A. (1984). Deadly Force and its Effects on Police-Community Relations. *Howard Law Journal, 27,* 1131-1184.

Mastrofski, S. D., Reisig, M. D., & McCluskey, J. D. (2002). Police disrespect toward the public:        An encounter- based analysis. *Criminology, 40*(3), 519-552.

Meyerowitz, J. (1986). Television and interpersonal behavior: Codes of perception and response. In G. Gumpert, & R. S. Cathcart (Eds.), *Inter/media: Interpersonal communication in a media world* (3rd Ed., pp. 253). New York: Oxford University Press.

Miller, S.L., Maner, J.K., & Becker, D.V. (2010). Self-Protective Biases in Group Categorization: Threat Cues Shape the Psychological Boundary Between "Us" and "Them". *Journal of Personality and Social Psychology, 99*(1), 62-77.

Nix, J., Campbell, B. A., Byers, E. H. & Alpert, G. P. (2017). A bird's eye view of civilians killed by police in 2015: Further evidence of shooter bias. *Criminology and Public Policy, 16*, 1-32.

Nowacki, J. S. (2015). Organizational-level police discretion: An application for police use of lethal force. *Crime & Delinquency, 61*(5), 643-668.

Öhman, A., & Mineka, S. (2001). Fears, phobias, and preparedness: Toward an evolved module of fear and fear learning. *Psychological Review, 108*, 483-522.

Quillian, L. & Pager, D. (2001). Black neighborhoods, higher crime? The role of racial stereotypes in evaluations of neighborhood crime. *American Journal of Sociology, 107*, 717-767.

Reiner, R. (2010). *The politics of the police*. Oxford, UK: Oxford University Press.

Ross, C. T. (2015). A multi-level Bayesian analysis of racial bias in police shootings at the county-level in the United States, 2011– 2014. *PloS one, 10*(11), e0141854.

Schaller, M., Park, J. H., & Mueller, A. (2003). Fear of the dark: Interactive effects of beliefs about danger and ambient darkness on ethnic stereotypes. *Personality and Social Psychology Bulletin, 29*, 637-649.

Sellin, T. (1938). Culture conflict and crime. *American Journal of sociology, 44*(1), 97-103.

Skolnick, J. H. (1966). *Justice Without Trial: Law Enforcement in Democratic Society*. New York, NY: John Willey & Sons.

Smith, B. W. & Holmes, M. D. (2014). Police use of excessive force in minority communities: A test of the minority threat, place, and community accountability hypotheses. *Social Problems, 61*(1), 83-104.

Smith, D. A. (1986). The neighborhood context of police behavior. *Crime and Justice, 8*, 313-341.

Song, M. (2004). Introduction: Who's at the bottom? Examining claims about racial hierarchy. *Ethnic and Racial Studies, 27*(6), 859-877.

Sorensen, J. R., Marquart, J. W., & Brock, D. E. (1993). Factors related to killings of felons by police officers: A test of the community violence and conflict hypotheses. *Justice Quarterly, 10*(3), 417-440.

Terrill, W. (2003). Police Use of Force and Suspect Resistance: The Micro Process of the Police-Suspect Encounter. *Police Quarterly, 6*(1), 51-83.

Terrill, W. (2005). Police Use of Force: A Transactional Approach. *Justice Quarterly, 22*(1), 107-138.

Terrill, W. (2016). Deadly Force: To Shoot or Not to Shoot. *Criminology & Public Policy, 15*(2), 491-496.

Terrill, W. & Reisig, M. D. (2003). Neighborhood context and police use of force. *Journal of Research in Crime and Delinquency, 40*(3), 291-321.

Tittle, C. R. (2004). Refining control balance theory. *Theoretical Criminology, 8*(4), 395-428.

Trawalter, S., Todd, A. R., Baird, A. A., & Richeson, J. A. (2008). Attending to threat: Race-based patterns of selective attention. *Journal of Experimental Social Psychology, 44*(5), 1322-1327.

Van Gelder, J. L. (2013). Beyond rational choice: The hot/cool perspective of criminal decision making. *Psychology, Crime & Law, 19*(9), 745-763.

Wacquant, L. (1999). 'Suitable enemies' Foreigners and immigrants in the prisons of Europe. *Punishment & Society, 1*(2), 215-222.

Wacquant, L. (2008). *Urban outcasts: A comparative sociology of advanced marginality*. Cambridge, UK: Polity Press.

Walker, S., Spohn, C., & DeLone, M. (2012). *The color of justice: Race, ethnicity, and crime in America*. Belmont, CA: Wadsworth Publishing Company.

Weitzer, R. J. (1995). *Policing under fire: Ethnic conflict and police-community relations in Northern Ireland*. Albany, NY: Suny Press.

Wheeler, A. P., Phillips, S. W., Worrall, J. L., and Bishopp, S. A. (2017). *What Factors Influence an Officer's Decision to Shoot? The Promise and Limitations of Using Public Data*. Invited presentation at Washington State University.

White, M. D. (2002). Identifying situational predictors of police shootings using multivariate analysis. *Policing: An International Journal of Police Strategies & Management, 25*(4), 726-751.

Wikström, P. O. H., & Treiber, K. H. (2009). Violence as situational action. *International Journal of Conflict and Violence, 3*(1), 75-96.

Willits, D. W. & Makin, D. A. (2017). Show Me What Happened: Analyzing Use of Force through Analysis of Body-Worn Camera Footage. *Journal of Research in Crime and Delinquency*, 0022427817701257.

Wilson, W. J. (2009). *More than just race: Being black and poor in the inner city (issues of our time)*. New York, NY: WW Norton & Company.

Wilson, W. J. (2012). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago, IL: University of Chicago Press.

Xu, J., & Lee, J. C. (2013). The Marginalized "Model" Minority: An Empirical Examination of the Racial Triangulation of Asian Americans. *Social Forces, 91*(4), 1363-1397.

**Table 1. Descriptive Statistics [N(%)] for Force Incidents and Non-Use of Force Incidents (N=288)**

| Variable | Use of Force Incidents (N=70) | Non-Use of Force Incidents (N=218) |
|---|---|---|
| *Officer Emotional State* | | |
| Emotionless | 0(0.0) | 50(22.9) |
| Low Emotional State | 43(61.4) | 162(74.3) |
| Medium Emotional State | 25(35.7) | 6(2.8) |
| High Emotional State | 2(2.9) | 0(0.0) |
| *Suspect Emotional State* | | |
| Emotionless | 0(0.0) | 19(8.7) |
| Low Emotional State | 26(37.1) | 161(73.9) |
| Medium Emotional State | 34(48.6) | 37(17.0) |
| High Emotional State | 10(14.3) | 1(0.5) |
| *High Intensity* | 38(54.3) | 7(3.2) |
| *Aggression* | | |
| Normal Situation | 21(30.0) | 189(86.7) |
| Medium Level of Aggression | 39(55.7) | 27(12.4) |
| High Level of Aggression | 10(14.3) | 2(0.9) |
| *Race* | | |
| White or Caucasian | 45(64.3) | 169(77.9) |
| Black or African American | 10(14.3) | 19(8.8) |
| American Indian or Alaska Native | 0(0.0) | 1(0.5) |
| Native Hawaiian or Pacific Islander | 0(0.0) | 4(1.8) |
| Asian | 2(2.9) | 6(2.8) |
| Middle-Eastern | 4(5.7) | 13(6.0) |
| Other | 9(12.9) | 5(2.3) |
| *Hispanic* | 8(11.4) | 15(6.9) |
| *Male* | 63(90.0) | 147(67.4) |
| *Arrest Made* | 45(64.3) | 49(22.5) |
| *Bystanders Present* | 41(58.6) | 17(53.7) |
| *Night* | 60(85.7) | 136(62.4) |

**Table 2. Ordered Logistic Regression Results Comparing Race and Emotionality**

|  | Officer Emotional State | Suspect Emotional State | Intensity State | Aggression |
|---|---|---|---|---|
| *Black or Latino Suspects* | 0.344 | 0.330 | 0.701[*] | 0.916[**] |
|  | (0.400) | (0.374) | (0.420) | (0.369) |
| Observations | 183 | 183 | 183 | 183 |

*Note.* [*]p<0.1; [**]p<0.05; [***]p<0.01

**Table 3. Binomial Logistic Regression Results Comparing Use of Force and Emotionality**

|  | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Constant* | -5.877** | -8.898** | -1.899** | -3.956** | -4.449** | -5.831** |
|  | (0.695) | (1.167) | (0.193) | (0.994) | (0.481) | (0.742) |
| *Officer Emotional State* | 2.465** | 2.564** |  |  |  |  |
|  | (0.481) | (0.535) |  |  |  |  |
| *Suspect Emotional State* | 1.524** | 1.744** |  |  |  |  |
|  | (0.305) | (0.399) |  |  |  |  |
| *Intensity State* |  |  | 3.746** | 3.726** |  |  |
|  |  |  | (0.479) | (0.556) |  |  |
| *Aggression* |  |  |  |  | 2.337** | 2.052** |
|  |  |  |  |  | (0.304) | (.332) |
| *Latino or Black Suspect* |  | .931 |  | 0.738 |  | 0.416 |
|  |  | (.528) |  | (.501) |  | (.474) |
| *Other Non-White Suspect* |  | .187 |  | .135 |  | -.104 |
|  |  | (.578) |  | (.580) |  | (.534) |
| *Male Suspect* |  | 1.744** |  | 1.234* |  | 1.031* |
|  |  | (0.610) |  | (0.542) |  | (0.494) |
| *Arrest Made* |  | 1.441** |  | 1.204** |  | 1.361** |
|  |  | (0.413) |  | (0.384) |  | (0.355) |
| *Bystanders Present* |  | -.964* |  | -0.592 |  | -0.269 |
|  |  | (0.429) |  | (0.400) |  | (0.361) |
| *Day/Night* |  | 1.217* |  | 1.006* |  | 0.658 |
|  |  | (0.505) |  | (0..468) |  | (0.438) |
| Observations | 283 | 283 | 283 | 283 | 283 | 283 |
| Log Likelihood | -106.422 | -83.094 | -109.603 | -94.358 | -118.597 | -104.845 |
| Akaike Inf. Crit. | 218.85 | 184.19 | 223.21 | 204.72 | 241.19 | 225.69 |

*Note.* *p<0.05; **p<0.01. Standard errors in parentheses.

**Table 4. Cox Regression Results Comparing Time to Force and Emotionality**

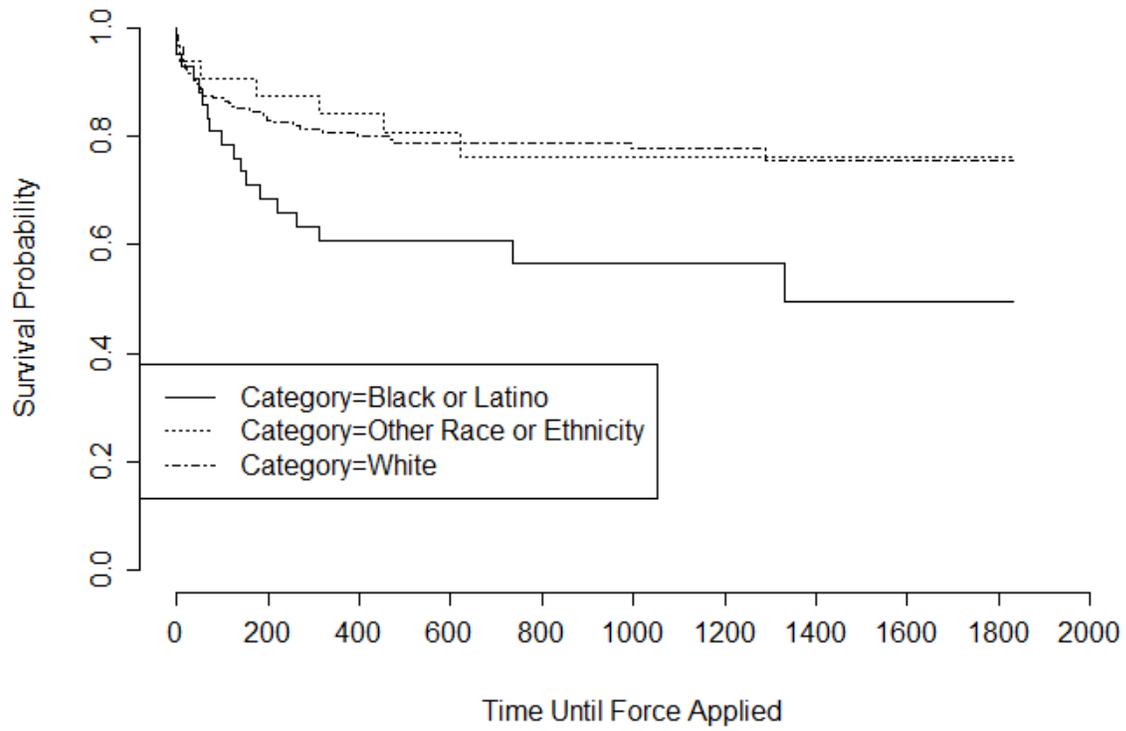| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Officer Emotional State* | 1.208** | 1.300*** | | | | |
| | (.213) | (.227) | | | | |
| *Suspect Emotional State* | .779** | 0.499** | | | | |
| | (.191) | (.190) | | | | |
| *Intensity State* | | | 2.080** | 1.648** | | |
| | | | (.203) | (.237) | | |
| *Aggression* | | | | | 1.390*** | 1.000** |
| | | | | | (0.155) | (.172) |
| *Latino or Black Suspect* | | .140 | | .272 | | .017 |
| | | (.297) | | (.292) | | (.292) |
| *Other Non-White Suspect* | | .075 | | -.072 | | -.054 |
| | | (1.078) | | (.931) | | (.411) |
| *Male Suspect* | | .987* | | .874* | | .859* |
| | | (.414) | | (.409) | | (.410) |
| *Arrest Made* | | .938** | | .629* | | .838** |
| | | (.270) | | (.284) | | (.273) |
| *Bystanders Present* | | -.383 | | -.020 | | -.054 |
| | | (.254) | | (.249) | | (.246) |
| *Day/Night* | | .680 | | .578 | | .629 |
| | | (.363) | | (.363) | | (.358) |
| Observations | 283 | 283 | 283 | 283 | 283 | 283 |
| Pseudo-$R^2$ | .253 | .338 | .246 | .299 | .209 | .267 |
| Log Likelihood | -336.798 | -319.638 | -338.075 | -327.800 | -344.837 | -334.078 |

*Note.* *$p<0.1$; **$p<0.05$; ***$p<0.01$

**Figure 1. Kaplan-Meier Plot of Time until Force by Race/Ethnicity of Suspect**

**Table 1. Descriptive Statistics [N(%)] for Force Incidents and Non-Use of Force Incidents (N=288)**

| Variable | Use of Force Incidents (N=70) | Non-Use of Force Incidents (N=218) |
|---|---|---|
| *Officer Emotional State* | | |
| Emotionless | 0(0.0) | 50(22.9) |
| Low Emotional State | 43(61.4) | 162(74.3) |
| Medium Emotional State | 25(35.7) | 6(2.8) |
| High Emotional State | 2(2.9) | 0(0.0) |
| *Suspect Emotional State* | | |
| Emotionless | 0(0.0) | 19(8.7) |
| Low Emotional State | 26(37.1) | 161(73.9) |
| Medium Emotional State | 34(48.6) | 37(17.0) |
| High Emotional State | 10(14.3) | 1(0.5) |
| *High Intensity* | 38(54.3) | 7(3.2) |
| *Aggression* | | |
| Normal Situation | 21(30.0) | 189(86.7) |
| Medium Level of Aggression | 39(55.7) | 27(12.4) |
| High Level of Aggression | 10(14.3) | 2(0.9) |
| *Race* | | |
| White or Caucasian | 45(64.3) | 169(77.9) |
| Black or African American | 10(14.3) | 19(8.8) |
| American Indian or Alaska Native | 0(0.0) | 1(0.5) |
| Native Hawaiian or Pacific Islander | 0(0.0) | 4(1.8) |
| Asian | 2(2.9) | 6(2.8) |
| Middle-Eastern | 4(5.7) | 13(6.0) |
| Other | 9(12.9) | 5(2.3) |
| *Hispanic* | 8(11.4) | 15(6.9) |
| *Male* | 63(90.0) | 147(67.4) |
| *Arrest Made* | 45(64.3) | 49(22.5) |
| *Bystanders Present* | 41(58.6) | 17(53.7) |
| *Night* | 60(85.7) | 136(62.4) |

**Table 2. Ordered Logistic Regression Results Comparing Race and Emotionality**

|  | Officer Emotional State | Suspect Emotional State | Intensity State | Aggression |
|---|---|---|---|---|
| *Black or Latino Suspects* | 0.344 | 0.330 | 0.701[*] | 0.916[**] |
|  | (0.400) | (0.374) | (0.420) | (0.369) |
| Observations | 183 | 183 | 183 | 183 |

*Note.* [*]p<0.1; [**]p<0.05; [***]p<0.01

## Table 3. Binomial Logistic Regression Results Comparing Use of Force and Emotionality

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Constant | -5.877** | -8.898** | -1.899** | -3.956** | -4.449** | -5.831** |
| | (0.695) | (1.167) | (0.193) | (0.994) | (0.481) | (0.742) |
| Officer Emotional State | 2.465** | 2.564** | | | | |
| | (0.481) | (0.535) | | | | |
| Suspect Emotional State | 1.524** | 1.744** | | | | |
| | (0.305) | (0.399) | | | | |
| Intensity State | | | 3.746** | 3.726** | | |
| | | | (0.479) | (0.556) | | |
| Aggression | | | | | 2.337** | 2.052** |
| | | | | | (0.304) | (.332) |
| Latino or Black Suspect | | .931 | | 0.738 | | 0.416 |
| | | (.528) | | (.501) | | (.474) |
| Other Non-White Suspect | | .187 | | .135 | | -.104 |
| | | (.578) | | (.580) | | (.534) |
| Male Suspect | | 1.744** | | 1.234* | | 1.031* |
| | | (0.610) | | (0.542) | | (0.494) |
| Arrest Made | | 1.441** | | 1.204** | | 1.361** |
| | | (0.413) | | (0.384) | | (0.355) |
| Bystanders Present | | -.964* | | -0.592 | | -0.269 |
| | | (0.429) | | (0.400) | | (0.361) |
| Day/Night | | 1.217* | | 1.006* | | 0.658 |
| | | (0.505) | | (0..468) | | (0.438) |
| Observations | 283 | 283 | 283 | 283 | 283 | 283 |
| Log Likelihood | -106.422 | -83.094 | -109.603 | -94.358 | -118.597 | -104.845 |
| Akaike Inf. Crit. | 218.85 | 184.19 | 223.21 | 204.72 | 241.19 | 225.69 |

*Note.* *p<0.05; **p<0.01. Standard errors in parentheses.

**Table 4. Cox Regression Results Comparing Time to Force and Emotionality**

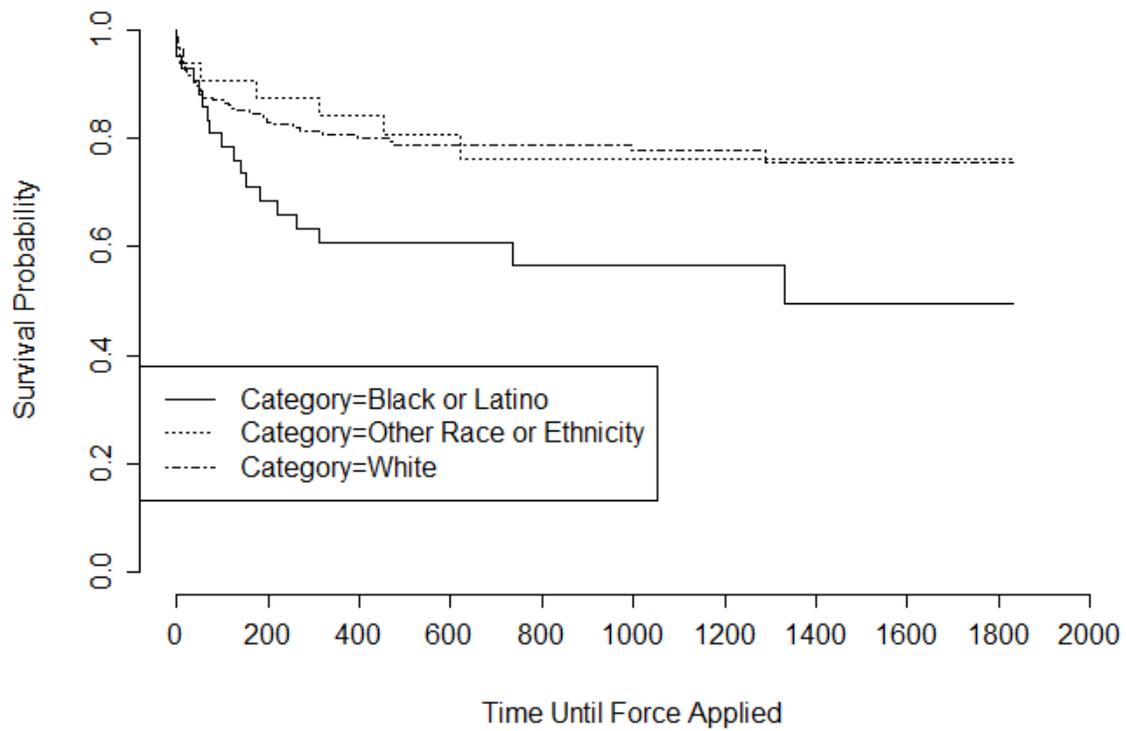| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| *Officer Emotional State* | 1.208** | 1.300*** | | | | |
| | (.213) | (.227) | | | | |
| *Suspect Emotional State* | .779** | 0.499** | | | | |
| | (.191) | (.190) | | | | |
| *Intensity State* | | | 2.080** | 1.648** | | |
| | | | (.203) | (.237) | | |
| *Aggression* | | | | | 1.390*** | 1.000** |
| | | | | | (0.155) | (.172) |
| *Latino or Black Suspect* | | .140 | | .272 | | .017 |
| | | (.297) | | (.292) | | (.292) |
| *Other Non-White Suspect* | | .075 | | -.072 | | -.054 |
| | | (1.078) | | (.931) | | (.411) |
| *Male Suspect* | | .987* | | .874* | | .859* |
| | | (.414) | | (.409) | | (.410) |
| *Arrest Made* | | .938** | | .629* | | .838** |
| | | (.270) | | (.284) | | (.273) |
| *Bystanders Present* | | -.383 | | -.020 | | -.054 |
| | | (.254) | | (.249) | | (.246) |
| *Day/Night* | | .680 | | .578 | | .629 |
| | | (.363) | | (.363) | | (.358) |
| Observations | 283 | 283 | 283 | 283 | 283 | 283 |
| Pseudo-$R^2$ | .253 | .338 | .246 | .299 | .209 | .267 |
| Log Likelihood | -336.798 | -319.638 | -338.075 | -327.800 | -344.837 | -334.078 |

*Note.* *p<0.1; **p<0.05; ***p<0.01

**Figure 1. Kaplan-Meier Plot of Time until Force by Race/Ethnicity of Suspect**