

METAPHORS AND WEAPONS OF WAR

METAPHORS AND WEAPONS OF WAR:
A CONCEPTUAL METAPHOR ANALYSIS
OF POLICE USE OF WAR METAPHORS
AND MILITARIZED EQUIPMENT

A Dissertation

Presented to

the Faculty of the Graduate School
at the University of Missouri-Columbia

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

by

TYLER JIMENEZ

Dr. Jamie Arndt, Dissertation Supervisor

JULY 2021

METAPHORS AND WEAPONS OF WAR

The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

METAPHORS AND WEAPONS OF WAR:
A CONCEPTUAL METAPHOR ANALYSIS
OF POLICE USE OF WAR METAPHORS
AND MILITARIZED EQUIPMENT

presented by Tyler Jimenez,
a candidate for the degree of Doctor of Philosophy,
and hereby certify, in their opinion, it is worthy of acceptance.

Professor Jamie Arndt

Professor Laura King

Professor Todd Schachtman

Professor Brian Houston

METAPHORS AND WEAPONS OF WAR

DEDICATION

I thank Jamie Arndt for his excellent mentorship throughout my time at the University of Missouri. Additionally, I thank Mike Corcoran, Peter J. Helm, Brian Houston, Milla Jimenez, Laura King, Melissa Lewis, Todd Schachtman, Hannah Volpert-Esmond, Sarah Ward, and Jake Womick, each of which contributed to my experience in graduate school and scholarly development. Prior to graduate school, I learned a lot from Brian Burke, Annette Donald, Justin McBrayer, Dugald Owen, Janice Templeton, and Daniel Weidler. Many thanks to my wife, Milla, family, Eric, Denise, Erica, and Colin, friends, Michael Gallegos and Taylor Martinez, and dog, Crouton, for their support and encouragement. Finally, I thank the Robert Wood Johnson Foundation's Health Policy Research Scholars Program, especially Lydia Isaac, Thomas LaVeist, and Keshia Pollack Porter for their training, support, and commitment to building a culture of health.

WEAPONS AND METAPHORS OF WAR

ACKNOWLEDGEMENTS

I thank my advisor Jamie Arndt and committee members Laura King, Todd Schachtman, and Brian Houston for their input on study design and previous drafts.

WEAPONS AND METAPHORS OF WAR

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	ii
LIST OF FIGURES.....	iv
LIST OF TABLES.....	v
ABSTRACT.....	vi
Chapter	
1. INTRODUCTION.....	1
2. PRESENT STUDY.....	11
3. GENERAL DISCUSSION.....	19
APPENDIX	
1. Appendix A: Full R code for retrieving, cleaning, and analyzing data.....	24
2. Appendix B: Words pilot tested for inclusion in LIWC dictionary assessing war metaphors.....	28
3. Appendix C: Words pilot tested for inclusion in LIWC dictionary assessing police-related words.....	30
4. Appendix D: Figures.....	32
5. Appendix E: Tables.....	35
REFERENCES.....	38
VITA.....	46

WEAPONS AND METAPHORS OF WAR

LIST OF FIGURES

Figures

1. Equipment transferred to sampled police departments.....31
2. Word cloud generated from full sample of tweets.....32
3. Google searches for ‘police killing’ in the US, 2004-2021.....33

WEAPONS AND METAPHORS OF WAR

LIST OF TABLES

Tables

1. Regression models predicting militarized equipment from war metaphor usage...34
2. Bivariate correlations between study variables.....35
3. Regression models predicting militarized equipment from other word categories.36

WEAPONS AND METAPHORS OF WAR

METAPHORS AND WEAPONS OF WAR: A CONCEPTUAL METAPHOR ANALYSIS OF POLICE USE OF WAR METAPHORS AND MILITARIZED EQUIPMENT

Tyler Jimenez

Dr. Jamie Arndt, Dissertation Supervisor

ABSTRACT

The “War on Drugs” exemplifies one way in which policing is metaphorically compared to war. As conceptual metaphor theory demonstrates, metaphors shape attitudes and behaviors toward the concept they are used to understand. It is then perhaps unsurprising that war metaphors for policing have become more common alongside the militarization of police. Still, no research has examined the link between police use of war metaphors and acquisition of military equipment. Using ecological and social media data, the study began to examine this link. Specifically, 241,084 social media posts from police departments ($N = 80$) were coded for the presence of war metaphors, which were then used to predict the amount of military equipment acquired through the federal 1033 Program. Building from conceptual metaphor theory, it was hypothesized that police use of war metaphors would be positively associated with their department acquisition of militarized equipment. The results did not support this hypothesis; potential reasons for this are considered. Exploratory analysis generated potentially interesting findings regarding police usage of war metaphors following acts of police violence and associations between death-related words and militarized equipment acquisitions.

WEAPONS AND METAPHORS OF WAR

INTRODUCTION

“We are at war,” said Lt. Col. Dave Grossman, “You are the Delta Force. You are the Green Beret. You are British SAS. Can you accept that? Every single one of you is in the frontline of a live ammo combat patrol every day of your life”. This motivational speech was not given to soldiers on a military base, but rather police officers in a high school auditorium (McLaughlin, 2020). A former West Point instructor turned police trainer, Grossman attempts to instill in police what he calls a “warrior mindset” (Grossman, 2014). In an online training video—sold for \$79.99—Grossman employed an extended metaphor: “Around the world, warriors in blue...and warriors in green...find themselves facing the same kind of missions. Increasingly, the police must face organized opponents armed with assault rifles and bombs. Indeed, they may face deliberate acts of war from international terrorists”. Grossman is not alone in his use of war metaphors when describing policing. Perhaps nowhere is this as clear as in the War on Drugs. In a linguistic analysis of Presidential speeches about the War on Drugs, Elwood (1995) found frequent use of war metaphors, including references to “national security”, “battle”, “crusade”, and “enemies”.

The current study begins to examine whether the use of war metaphors is more than ornamental and perhaps systematically connected to the actual militarization of police. As noted by Kraska and Kappeler (1997), the frequent use of war metaphors when describing police has coincided with the rise of police militarization. Since the 1970s, U.S. police have come to resemble the military in terms of equipment, culture, organization, and operation (Kraska, 2007). While one study has found reading about police as warriors (vs. guardians) led to greater support for police use of militarized

WEAPONS AND METAPHORS OF WAR

equipment (Thibodeau et al., 2017), whether police use of war metaphors is associated with actually acquiring militarized equipment has yet to be examined. To fill this gap, I build from theoretical and empirical work on conceptual metaphor theory (e.g., Lakoff & Johnson, 1980a), which demonstrates metaphors are frequently used to understand abstract concepts and that the specific metaphor used shapes how people think about and behave toward that concept. If war metaphors shape how police think about policing, and those cognitions in turn inspire consonant behavior, then police departments using war metaphors should be particularly likely to acquire militarized equipment. Although this reasoning implies a causal pathway, the present study begins with a foundational inquiry of the association between naturalistic use of war metaphors among members of police departments and police militarization.

Conceptual Metaphor Theory

People often use metaphors to make sense of their social world. According to conceptual metaphor theory (CMT; Lakoff & Johnson, 1980), this process occurs when a complex or abstract concept—called the *target*—is compared to a simple or concrete concept—called the *source*. For example, cancer and its treatment—widely perceived as ambiguous and confusing (Han et al., 2006)—is often metaphorically compared to war (Potts & Semino, 2019; Sontag, 1978). War is a powerful and widely used metaphor (Steinert, 2003), and is similarly used to describe policing and crime (Thibodeau et al., 2017; Thibodeau & Boroditsky, 2011). Importantly, such use of metaphor is not merely linguistic window dressing, but a cognitive tool which shapes subsequent attitudes and behaviors. Metaphors influence attitudes and behaviors through a process called

WEAPONS AND METAPHORS OF WAR

conceptual mapping, in which knowledge about aspects of the source are transferred to the target (Landau, 2017).

Returning to the example of comparing cancer to war, the process of conceptual mapping may transfer knowledge about war—such as being difficult and exhausting—to an individual’s understanding of cancer. This newly transferred knowledge is then used when deciding how to think about and behave toward cancer and its treatment. Consistent with this reasoning, Hauser and Schwarz (2020) found reading about cancer as a war (vs. a journey) increased the perceived difficulty of treatment, with the idea being that knowledge about the difficulty of war was used to understand the difficulty of cancer.

Similarly, war metaphors influence attitudes toward policing; reading about police officers as warriors rather than guardians led to greater support for police use of militarized equipment (Thibodeau et al., 2017). This latter study is consistent with the metaphoric fit hypothesis, which predicts metaphors for communicating about problems are most influential when the recommended solution shares the metaphoric framing. For example, Landau et al. (2018) found reading about UV radiation as an enemy increased intentions to use sunscreen, but only when sunscreen was compared to armor. Together, these studies suggest using aggressive metaphors to describe problems can motivate aggressive solutions.

These studies are examples of the most common paradigm in conceptual metaphor research in which participants are exposed to a metaphoric framing and then asked about their attitudes or behavioral intentions. Such methods have demonstrated the causal influence of exposure to metaphors in a variety of domains. However, they do not lend themselves to understanding how people use metaphors in everyday communication

WEAPONS AND METAPHORS OF WAR

and how this usage reflects their attitudes and behaviors. To examine these research areas, discourse analysis has identified metaphor usage in newspapers (Santa Ana, 1999), presidential speeches (Xue et al., 2013), and social media (Jimenez et al., 2021). In the latter example, Jimenez and colleagues (2021) examined the metaphoric comparison of immigrants to *inundation* (e.g., a wave of immigrants) in social media discussions about immigration, specifically finding these metaphors were more likely to be used in tweets expressing support for a border wall than in other types of immigration-relevant tweets. This finding suggests metaphor usage may be strategically employed to support one's values, a point I return to later. The link between inundation metaphors and border wall support was further examined in an experimental study finding that reading about immigrants in inundation-metaphoric (vs. literal) terms resulted in greater support for a border wall. The present study builds from the methodology used to examine the use of inundation metaphors on social media to examine the relationship between police use of war metaphors and equipment.

Police Militarization

For much of American history, police and the military have been regarded as distinct entities. This distinction was reflected in policy; for example, the Posse Comitatus Act of 1878 prohibited domestic use of the military. However, this distinction has blurred since the War on Drugs (e.g., Tighe & Brown, 2015). Given the chosen metaphor, it is perhaps unsurprising that the War on Drugs adopted militaristic policing. Again reflected in policy, a 1981 law allowed the military to assist police in domestic anti-drug efforts, enabling actions such as Operation Green Sweep in which the Army raided California marijuana growers (Bishop, 1990). This legislative trend culminated in

WEAPONS AND METAPHORS OF WAR

the 1996 creation of the federal 1033 Program, which transfers surplus militarized equipment to civilian police departments. In the 25 years since, over \$7 billion of militarized equipment has been acquired by police departments through the 1033 Program (*DLA Law Enforcement Support Office*, 2019). Police departments are charged only for transportation and maintenance costs, meaning they can acquire an armored vehicle valued at nearly \$1 million for less than \$3,000.

Throughout this paper, I adopt Kraska's (2007) definition of militarization as the implementation of militarism, the belief that violence is the most appropriate and effective means for solving problems. As police and the military both employ state-backed violence to achieve their goals, and thus police are inherently militaristic to some degree, police militarization is best understood as relative rather than dichotomous (Kraska, 2007; McMichael, 2017). Assessing a police department's level of militarization involves looking for indicators of police militarization, determining where the department falls on the continuum from low to high militarization (Kraska, 2007). Police militarization is comprised of multiple components, two of which—material and cultural—are of present focus (Kraska, 2007). These components and their potential relationship are outlined below.

Material Component of Police Militarization

The material component of police militarization refers to police usage of militarized equipment (e.g., armored vehicles). As Steidley and Ramey (2019) note in their recent review, extant research on police militarization has focused primarily on its material dimension. For example, researchers have identified predictors of police acquisitions of militarized equipment, the majority of which falling into the two broad

WEAPONS AND METAPHORS OF WAR

categories of racism and crime. Specifically, police departments in areas with large Black and Hispanic populations are particularly likely to acquire 1033 Program equipment (Ramey & Steidley, 2018). Importantly, this pattern is found even when controlling for crime and other social conditions, raising the possibility that police militarization is at least partly motivated by racial prejudice. Consistent with this possibility, Jimenez et al. (under review) found a positive relationship between regional aggregates of anti-Black and anti-Native American prejudice and the number of 1033 Program acquisitions. Specifically, police departments in states higher in racial prejudice received more militarized equipment than those in less prejudiced states, even when controlling for violent crime, poverty, and political conservatism.

Still, while crime rates cannot explain the relationship between racial context and police militarization, there is some evidence that police departments respond to local crime by acquiring militarized equipment (Ramey & Steidley, 2018). However, research suggests this response is ineffective and can even backfire; police militarization does not reduce crime (Gunderson et al., 2020), is associated with increased police killings of civilians (Delehanty et al., 2017), and reduces trust in police (Mummolo, 2018).

Cultural Component of Police Militarization

The cultural component of police militarization refers to militaristic beliefs, values, and language adopted by police. Research has demonstrated the majority of police officers hold militaristic principles (Kunselman et al., 2013; Turner II & Fox, 2019). Still, as noted in a recent review of police militarization research, the cultural component of police militarization is understudied (Steidley & Ramey, 2019). This dearth of research is due to at least two factors. First, in 2014—through a Freedom of Information Act

WEAPONS AND METAPHORS OF WAR

petition—1033 Program data became publicly available (Musgrave, 2014). The availability of this data has inspired increased research interest in police militarization, though the nature of these data—a list of equipment transferred to police departments—has channeled most of this research into the material, rather than cultural, component of police militarization. Second, assessing the cultural component of police militarization faces theoretical and methodological challenges. These challenges are expounded upon below.

While impressive research has been conducted on militarized police culture, its connection to the material component of police militarization lacks an explanatory framework. Specifically, while researchers have noted police officers in departments using SWAT teams often compare themselves to soldiers (Kraska & Paulsen, 1997), it is unclear why a link between war metaphors and militarized equipment usage would emerge. Here, conceptual metaphor theory provides an explanation for this link; metaphorically comparing policing to war transfers knowledge about war (e.g., need for aggressive actions and militarized equipment) to policing. Adopting war metaphors may transfer knowledge and cognitive content associated with war to police officers' understanding of their role as police. To “protect and serve” becomes infused with a might makes right mentality. In understanding the police as military at war, the expectation and potential action would be to equip oneself for war.

In addition to the theoretical challenge of linking the materials and cultural aspects of militarization, research on the cultural component of police militarization also faces a number of methodological challenges. First, extant research has been largely ethnographic in nature, which requires considerable time and resources. For example,

WEAPONS AND METAPHORS OF WAR

Kraska and Paulsen (1997) conducted in-depth interviews with police officers in one department, documenting cultural changes paralleling the increased use of SWAT teams. Such field research methods present significant practical challenges for assessing cultural police militarization across many departments. Being able to do so is an important step toward assessing the connection between material and cultural components of police militarization, as quantified levels of cultural police militarization could be used to predict material components such as 1033 Program transfers. Second, police departments and officers are often reluctant to cooperate with policing researchers (Skolnick & Fyfe, 1993).

The present study overcomes these methodological challenges in two ways. First, by assessing cultural police militarization (i.e., use of war metaphors) across departments, it is possible to examine its relationship with material police militarization (i.e., 1033 Program transfers). Second, using publicly available data alleviates concerns that police will be uncooperative with the researcher.

Assessing cultural police militarization through police use of war metaphors deserves further explanation. Attempting to understand peoples' attitudes and values through their language use has a long history within psychological science. In 1915, Sigmund Freud described inferring meaningful information about his patients' mental states from parapraxes (i.e., slips of the tongue). More recently, a large-scale analysis of social media users found systematic differences in linguistic style between political liberals and conservatives, with the former using benevolent language and the latter using language pertaining to threat, power, and tradition (Sterling et al., 2020). In addition to general language use, examining metaphor usage can provide valuable insight into

WEAPONS AND METAPHORS OF WAR

cultural attitudes and values. Critical discourse analysis, focused on how inequality is perpetuated through language, has shown that metaphors are chosen in ways consistent with one's values. For example, in an analysis of Australian governmental policy documents, Marston (2000) found evidence that the "customer" metaphor was employed to describe those living in public housing in ways which disguised the power imbalance between the two parties. Similarly, in a conceptual metaphor-based critical discourse analysis of law articles, Santa Ana et al. (2017) found metaphors are used strategically to support legal arguments regarding U.S. citizenship. These studies demonstrate people use metaphors in ways consistent with their values. Thus, it follows that the values, an important aspect of culture, of a police department may be inferred by their use of metaphors.

Material and Cultural Components of Police Militarization

As noted by Kraska and Paulsen (1997), material police militarization does not occur in a cultural vacuum. Indeed, while documenting the increased use of paramilitary units within one police department, these researchers observed a number of parallel cultural trends such as viewing police as a military branch, the glorification of danger, and constructing an elite status.

Still, to my knowledge, no empirical work has examined the relationship between material and cultural components of police militarization across police departments. Examining the nature of this relationship is important given the profound impact of culture on behavior generally (e.g., Lehman et al., 2004; Triandis, 2007) (e.g., Lehman et al., 2004; Triandis, 2007), and in this specific application, the cultural component of police militarization is likely to guide the application of the material component. For

WEAPONS AND METAPHORS OF WAR

example, across police departments which have acquired armored vehicles, those with more militarized cultures may be particularly likely to use them in everyday policing, whereas those with less militarized cultures may reserve their use for emergency situations. The present study is designed to provide an initial examination of this relationship.

Present Study

The present study aimed to examine the conceptual metaphor theory-derived hypothesis that police use of war metaphors is associated with their acquisition of militarized equipment. To do so, I assessed war metaphors in tweets of police departments using a novel LIWC dictionary. Next, I used these results to predict the amount of militarized equipment acquired through the 1033 Program. It was expected that greater use of war metaphors would be positively correlated with acquisition of militarized equipment. All data and materials are available on OSF: <https://osf.io/mfb8d/>. Code is included in Appendix A.

Method

Data sources

Twitter (police use of war metaphors). To assess police use of war metaphors, tweets—brief text messages made on the social media site Twitter—from the 80 largest city police departments¹ in the U.S. were retrieved (see Appendix B for list of departments). This methodology builds from previous work examining the use of conceptual metaphors in social media (Jimenez et al., 2021). Tweets were retrieved by communicating with Twitter’s application programming interfaces (APIs) via the R package *rtweet* (Kearney, 2016). I attempted to scrape the maximum number of tweets (3,200) allowed by Twitter’s APIs, though due to rate limits the number of tweets retrieved varied. These tweets ranged from 10/7/2010—4/6/2021. Once retrieved, the

¹ This sample size was determined by calculating the minimum number of observations necessary to achieve power = .80 given an expected small-medium effect size. Departments were identified from the 2016 Law Enforcement Management and Administrative Statistics based on their number of full-time officers. Departments from Honolulu and Washington DC were excluded as these regions do not participate in the 1033 Program.

WEAPONS AND METAPHORS OF WAR

sample of 241,084 tweets was subjected to preprocessing consistent with prior research (e.g., Wunderlich & Memmert, 2020). Specifically, URLs, line breaks, and fancy spaces, tabs, and apostrophes were removed and the data reformatted with ascii encoding. Such preprocessing techniques improve the accuracy of linguistic analysis (Angiani et al., 2016). A word cloud was generated from the full sample of tweets (Figure 2).

After the tweets were retrieved and cleaned, they were analyzed using the Linguistic Inquiry and Word Count (Pennebaker et al., 2007; Pennebaker et al., 2015). This program analyzes text by counting words, returning a score representing the percentage of words included in pre-programmed dictionaries.

To develop a novel LIWC dictionary for detecting militaristic metaphors, I compiled a list of military- and police-related words (see Appendix C). This compiling was done by referencing online thesauruses. To validate this list of words, an online sample of participants ($N = 152$) were recruited from Amazon's Mechanical Turk (Mturk). Each participant was presented with a subset of 20 proposed words and asked to categorize them as related to either the military or police. Chi-square tests probed the frequency of each word being categorized as either military- or police-related; words significantly more likely to be categorized according to the proposed category were included in the final LIWC dictionary (chi-square statistics and words included in Appendix C and D). Each department's tweets were analyzed, which returned a score for each department representing the percentage of words in their tweets included in the war metaphor or police relevant dictionary.

1033 Program (acquisition of militarized equipment). Updated quarterly, data on the 1033 Program is made publicly available by the Defense Logistics Agency (DLA;

WEAPONS AND METAPHORS OF WAR

housed within the Department of Defense). For each piece of equipment transferred to police departments, this dataset includes equipment name, classification, and acquisition value. Equipment is commonly understood as either “controlled” or “noncontrolled” (e.g., Ramey & Steidley, 2018), with the former referring to weapons and other militarized equipment and the latter referring to non-militarized equipment such as office supplies. Given the present focus, only controlled equipment were included in the analyses². Data current as of December 31, 2020 was accessed via the R package *MRAP* (Jimenez, 2020). It is important to note that the DLA removes destroyed and/or returned equipment from the dataset before releasing it to the public. Thus, 1033 Program data should be understood as an incomplete snapshot of equipment currently in use, rather than a comprehensive historical record of all equipment transferred through the program. Acquisitions of 1033 Program equipment are mapped in Figure 1.

Control variables. A number of control variables were included to isolate as much as possible the relationship between 1033 Program transfers and war metaphor use. These include number of officers and operating budget (sourced from the Law Enforcement Management and Administrative Statistics), city population and median household income (sourced from the American Community Survey) and violent crime (sourced from the Federal Bureau of Investigation). Additionally, I sought to control for each department’s tendency to hire military veterans. Following Burkhardt & Baker (2019), this was operationalized as whether the department waives educational requirements for military veterans (sourced from the Law Enforcement Management and

²I considered examining the difference between controlled and non-controlled equipment to minimize the potential influence of economic motivation underlying 1033 Program acquisitions. However, only eight departments in the sample had non-controlled equipment listed. This is unsurprising because non-controlled equipment is frequently removed from the dataset by LESO.

WEAPONS AND METAPHORS OF WAR

Administrative Statistics). However, due to limited variability—94% of sampled departments used such waivers—this factor was excluded from analyses.

Results

Preliminary analyses. Descriptive statistics were explored and are presented in Appendix B; tables and figures are presented in Appendix E. Before conducting the main analyses, I checked the assumptions of linear regression and performed statistical tests to ensure appropriate variable selection in the regression model. First, I looked for influential outliers by examining Cook's distance statistic. Following recommendations, cases with scores greater than one were considered influential and removed from subsequent analyses (Cook & Weisberg, 1982). There was only one such case (New York Police Department), leaving a final sample size of $N = 79$. Second, I checked whether there was a linear relationship between the predictor and outcome variables by visually inspecting scatterplots. There was not consistent evidence of linear relationships, thus I computed log transformations of all variables to be used in subsequent analyses. Third, I checked for multicollinearity (i.e., high correlation between predictor variables) by running a regression model with all predictor variables and the outcome variable. Three variables—number of police officers, department budget, and city population—were strongly, positively correlated. I chose one of these variables (city population) to include in subsequent analyses given it was most predictive of the outcome variable; number of police officers and department budget were dropped from subsequent analyses. Fourth, I checked whether the residuals were independent by examining the Durbin-Watson statistic. This statistic ranges from 0-4, with acceptable scores ranging from 1-3 (Harvey, 1990). In the present case, the Durbin-Watson statistic (2.29) indicated that the

WEAPONS AND METAPHORS OF WAR

assumption of independent residuals was met. Fifth, I checked the assumption of homoscedasticity (i.e., model error is constant across predictor variable values) by performing a Breusch-Pagan test (Breusch & Pagan, 1979). This test did not return evidence of heteroscedasticity. Sixth, I checked the assumption that the residuals were normally distributed by conducting a Shapiro-Wilk test (Shapiro & Wilk, 1965). This test was significant ($p = .02$), indicating that the residuals were not normally distributed. However, the sample size is large enough so that the violation of this assumption is unlikely to influence the results (Ghasemi & Zahediasl, 2012).

Main analyses. A linear regression was used to predict the outcome variable (i.e., 1033 Program equipment) from the predictor variable (i.e., war metaphor usage). An additional regression predicted the outcome variable from the predictor variable and control variables. As shown in Table 1, there was no relationship between war metaphor usage and 1033 Program equipment in either model. City population was the only significant predictor of 1033 Program equipment. As many departments did not acquire 1033 Program equipment ($n = 33$), I further examined the main hypothesis by creating a dummy variable (0 = no equipment, 1 = equipment) and conducting a logistic regression predicting receiving any equipment from the predictor variables. As in the case of linear regression, war metaphor usage did not predict receiving any equipment $B = 1.80$, $SE = 1.57$, $p = .25$.

Exploratory analyses. To further explore the data, I conducted a number of analyses. First, the bivariate correlations between study variables were explored and are presented in Table 2. Second, I conducted a series of regression analyses using the PROCESS macro in SPSS to test whether a potential relationship between war metaphor usage and

WEAPONS AND METAPHORS OF WAR

1033 Program equipment acquisition would be moderated by other variables (e.g., city population). There was no evidence of moderation by city population or violent crime ($ps > .55$). There was a marginally significant interaction between war metaphor usage and median household income $B = -9.54$, $SE = 5.85$, $p = .11$. Specifically, a Johnson-Neyman test revealed a marginally significant, positive relationship between war metaphor usage and 1033 Program equipment acquisition at low levels of median household income. However, this result should be interpreted with caution given the effect was not significant.

Third, I explored war metaphor usage as an outcome variable. Specifically, I conducted a linear regression predicting war metaphor usage from all other study variables. This revealed a positive association between police language usage and war metaphor usage $B = .43$, $\beta = .28$, $SE = .18$, $t(77) = 2.35$, $p = .02$; no other variables were significant predictors ($ps > .37$).

Additionally, I explored whether high-profile cases of police violence are associated with war metaphor usage by police. To do so, I started by focusing on the police murder of George Floyd. First, I compared war metaphor usage by police before and after the murder of George Floyd on May 25, 2020. Specifically, I retained tweets made during the month prior to ($n = 6,206$) and following ($n = 8,416$) the murder and conducted a one-way ANOVA predicting war metaphor usage from time period. Interestingly, this revealed a significant effect; war metaphor usage was lower in the month following ($M = .14$, $SD = .75$) than the month prior ($M = .20$, $SD = .93$) to the police murder of George Floyd $F(1, 14620) = 21.82$, $p < .001$, $\eta^2 = .001$. Though of course speculative, one interpretation is that police became aware of increased public

WEAPONS AND METAPHORS OF WAR

scrutiny following the murder and were motivated to avoid displaying a militarized culture.

If this interpretation is correct, we should expect to see a similar pattern following high-profile, but not low-profile, police killings. I utilized Google Trends data to identify examples of each. Specifically, I examined the frequency of searches for “police killing” in the U.S. since 2004. This revealed two spikes in public searches for “police killing”: one in June 2020 and the other in July 2016 (Figure 3). The former coincided with the killing of George Floyd and the latter coincided with the killings of Alton Sterling and Philando Castile on July 5 and 6, respectively. Again, I retained tweets made during the month prior to ($n = 1,252$) and following ($n = 1,686$) the killings and conducted a one-way ANOVA predicting war metaphor usage from time period. Replicating the previously found pattern, war metaphor usage was lower in the month following ($M = .20$, $SD = 1.10$) than the month prior ($M = .32$, $SD = 1.55$) to the killings $F(1, 2936) = 5.90$, $p = .02$, $\eta^2 = .002$. Finally, I performed similar procedures to examine war metaphor usage coinciding with a low-profile police killing: that of Renee Davis³. Davis was killed by police on October 21, 2016. Retaining tweets made during the month prior to ($n = 1,252$) and following ($n = 1,686$) the murder, I conducted a one-way ANOVA predicting war metaphor usage from time period. This revealed no difference in war metaphor before and after the police killing of Renee Davis $F(1, 2714) = .43$, $p = .51$, $\eta^2 < .001$.

Finally, I explored potential relationships between other linguistic categories and 1033 Program acquisitions. Specifically, I analyzed the sample of tweets using the LIWC

³ Renee Davis was identified from an analysis of media coverage of police killings of Black and Native Americans. While killed by police at similar rates, Schroedel and Chin (2017) found killings of Native Americans receive little media attention. Renee Davis, a 23-year-old pregnant woman killed on the Muckleshoot Reservation, is one such case.

WEAPONS AND METAPHORS OF WAR

2015 dictionary, which includes categories such as “we”, “they”, “positive emotion”, “negative emotion”, “anger”, “power”, “risk”, and “death”. I then predicted 1033 Program acquisitions from scores in each of these categories. As shown in Table 3, use of death-related words was positively associated with 1033 Program acquisitions; no other category shared an association. Might this association be due to a third variable, such as violent crime rates? Another regression tested this idea, showing the relationship between death-related words and 1033 Program acquisitions was not diminished by controlling for city population, median household income, and violent crime.

WEAPONS AND METAPHORS OF WAR

General Discussion

The present study was designed to test the hypothesis that police use of war metaphors will be associated with their acquisition of militarized equipment. This hypothesis builds from conceptual metaphor theory, which explains how metaphors guide behavior by transferring knowledge from a source (e.g., war) to a target concept (e.g., policing). To isolate this relationship as much as possible, a number of other potentially explanatory factors (e.g., violent crime) were controlled for.

In short, the hypothesis was not supported; there was no observed link between war metaphor usage and 1033 Program equipment acquisitions. Here, I outline a few potential reasons for why this link was not found.

First, as with any null finding, it is possible the hypothesis was incorrect. War metaphor usage may have no connection to acquiring militarized equipment.

Second, it is possible there is a link between war metaphor usage and 1033 Program acquisitions, but this link cannot be observed through social media posts. As these posts are intended for public view, it seems likely posts are subject to social desirability concerns (Dodou & de Winter, 2014). In other words, social media posts from police may largely reflect the outward facing image police departments want to convey and not accurately represent the naturalistic linguistic patterns that characterize their internal culture. The word cloud (see Figure 2), for example, reveals aggressive words – let alone those that imply war – are not especially common. Future studies might address this limitation by analyzing language not intended for the public. For example, internal police communications may be examined for their use of war metaphors.

WEAPONS AND METAPHORS OF WAR

Third, it is possible there is a link between war metaphor usage and police militarization, but this link cannot be observed in 1033 Program data. As mentioned earlier, while the 1033 Program is a major contributor to police militarization, it is not the only source from which police departments can acquire militarized equipment (Ramey & Steidley, 2018). Indeed, police departments purchase militarized equipment through private companies, as well as alternative governmental programs such as the 1122 Program⁴ (<https://www.dla.mil/Customersupport/Federal/>). As researchers typically operationalize the material component of police militarization as 1033 Program acquisitions (Steidley & Ramey, 2019), there is a need to evaluate other sources of militarized equipment. This is particularly true given potential systematic differences between departments who acquire militarized equipment through the 1033 Program and those who purchase it through private companies.

Fourth, it is possible a relationship exists between war metaphor usage and police militarization, but only under certain conditions. There was some indication of a positive relationship between these variables in low-income areas, though not at a significant level. As the present analyses focused on large police departments, a future study may examine this possibility by sampling departments from more varied socioeconomic situations. Additionally, variables not presently considered, such as department level of police violence, may be tested for their moderating role in this process.

Although the main hypothesis was not supported, exploratory analysis generated interesting findings regarding police usage of war metaphors following acts of police

⁴ This data has not been made publicly available. I have been approved to receive this data through a Freedom of Information Act request.

WEAPONS AND METAPHORS OF WAR

violence. Specifically, I found police usage of war metaphors decreased following the killings of George Floyd, Alton Sterling, and Philando Castile. However, this pattern was not observed following the killing of Renee Davis. Importantly, the first three cases generated considerable media attention and public protest, while the latter case went largely unnoticed at the national level. These findings suggest police may be motivated to reduce their usage of war metaphors when under public scrutiny. While intriguing, this interpretation should be considered speculative until further research can systematically investigate whether such a process occurs. It is also worth noting the unexpected, positive association between police-related words and war metaphor usage. Though perhaps a spurious correlation, it is consistent with the broader idea of police becoming increasingly militarized. It is possible that talking about policing and talking about war go hand in hand.

Finally, exploratory analyses regarding other categories of words revealed an intriguing association between death-related words and 1033 Program acquisitions. Specifically, departments whose tweets contained death-related words (e.g., bury, coffin, kill) received greater amounts of militarized equipment. Such a finding is potentially compatible with terror management theory (e.g., Greenberg et al., 1986; Solomon et al., 2015), findings from which have shown death-related thoughts to be associated with variables relevant to police militarization including political conservatism (Burke et al., 2013), violence (Pyszczynski et al., 2006), and prejudice (Jimenez et al., 2020). It is possible police use of death-related words on social media indicates mortality salience at the department-level, which would motivate defensive responses such as acquiring militarized equipment. Still, alternative explanations, such that areas with more

WEAPONS AND METAPHORS OF WAR

homicides will both use more death-related words and acquire more militarized equipment, are possible. Further research is needed to replicate this association between death-related words and acquisition of 1033 Program equipment and to determine whether the connection can be understood as a terror management process.

Implications for conceptual metaphor theory

While evidence for the hypothesis was not found, the present study can contribute to conceptual metaphor theory by providing a methodological approach that can be adapted for other research areas. A number of conceptual metaphor studies have been designed in attempts to explain social and political phenomena. Researchers have explored the motivating role of metaphor underlying police militarization (Thibodeau et al., 2017), climate change (Flusberg et al., 2017), and building a border wall on the U.S.—Mexico border (Jimenez et al., 2021). Each of these studies examined how exposure to a metaphor (e.g., a wave of immigrants) influenced attitudes toward the social or political phenomenon of interest (e.g., a border wall). While providing valuable information about how metaphors shape public attitudes, attitudes toward a phenomenon should not be mistaken for the phenomenon. By moving from the individual- to the institutional-level, the present study affords an opportunity to examine directly the relationship between war metaphors and police militarization.

Implications for police militarization

The present study can also inform the interdisciplinary understanding of police militarization. As mentioned earlier, police militarization can be understood as having material and cultural components. Extant research has focused primarily on one or the other, with no quantitative work focused on the connection between the two. The present

WEAPONS AND METAPHORS OF WAR

study offers an initial look at the relationship between material and cultural components of police militarization. Examining this relationship is vital for better understanding how police use militarized equipment. Much research has focused on police acquisition of militarized equipment (e.g., Ramey & Steidley, 2018). This research has sourced data on equipment acquisitions through the 1033 Program, however these data only inform acquisition and not usage. Indeed, much less research has examined how police use this equipment once it is in their possession (Mummolo, 2018). It seems likely that how police decide to use militarized equipment depends on the culture of the department. By addressing the relationship between material and cultural components of police militarization, the present study offers an initial step toward a more comprehensive understanding of police acquisition and use of militarized equipment.

Conclusion

Police use of war metaphors and war equipment is widespread. The present study offers an initial look at the relationship between these two phenomena. Although no relationship was observed, the study offers a generative framework through which future research can seek to inform the link between cultural and material components of police militarization.

WEAPONS AND METAPHORS OF WAR

Appendix A: Full R code for retrieving, cleaning, and analyzing data

```
##get token (need to create and include individual key if replicating--see rtweet documentation)
```

```
create_token(  
  app = "INCLUDE APP NAME HERE",  
  consumer_key = "INCLUDE CONSUMER KEY HERE",  
  consumer_secret = "INCLUDE CONSUMER SECRET HERE"  
)
```

```
##install and load packages
```

```
install.packages("rtweet")  
install.packages("httr")  
install.packages("httpuv")  
install.packages("maps")  
install.packages("ggplot2")  
install.packages("ggpubr")  
install.packages("dplyr")  
install.packages("gtrendsR")  
install.packages("lubridate")
```

```
library(rtweet)  
library(httr)  
library(httpuv)  
library(maps)  
library(ggplot2)  
library(ggpubr)  
library(dplyr)  
library(gtrendsR)  
library(lubridate)
```

```
##retrieve tweets from 80 biggest city police departments (run in 2 batches so rate limit not reached)
```

```
nypd_tweets <- get_timeline("NYPDnews", n = 3200)  
chicago_tweets <- get_timeline("Chicago_Police", n = 3200)  
la_tweets <- get_timeline("LAPDHQ", n = 3200)  
philly_tweets <- get_timeline("PhillyPolice", n = 3200)  
houston_tweets <- get_timeline("houstonpolice", n = 3200)  
dc_tweets <- get_timeline("DCPoliceDept", n = 3200)  
dallas_tweets <- get_timeline("DallasPD", n = 3200)  
phoenix_tweets <- get_timeline("PhoenixPolice", n = 3200)  
sanantonio_tweets <- get_timeline("SATXPolice", n = 3200)  
miami_tweets <- get_timeline("MiamiDadePD", n = 3200)  
lasvegas_tweets <- get_timeline("LVMPD", n = 3200)  
baltimore_tweets <- get_timeline("BaltimorePolice", n = 3200)  
detroit_tweets <- get_timeline("detroitpolice", n = 3200)
```


WEAPONS AND METAPHORS OF WAR

```
sanfran_tweets <- get_timeline("SFPD", n = 3200)
honolulu_tweets <- get_timeline("honolulupolice", n = 3200)
boston_tweets <- get_timeline("bostonpolice", n = 3200)
sandiego_tweets <- get_timeline("SanDiegoPD", n = 3200)
atlanta_tweets <- get_timeline("Atlanta_Police", n = 3200)
milwaukee_tweets <- get_timeline("MilwaukeePolice", n = 3200)
columbus_tweets <- get_timeline("ColumbusPolice", n = 3200)
austin_tweets <- get_timeline("Austin_Police", n = 3200)
charlotte_tweets <- get_timeline("CMPD", n = 3200)
jacksonville_tweets <- get_timeline("JSOPIO", n = 3200)
fortworth_tweets <- get_timeline("fortworthpd", n = 3200)
cleveland_tweets <- get_timeline("CLEpolice", n = 3200)
seattle_tweets <- get_timeline("SeattlePD", n = 3200)
denver_tweets <- get_timeline("DenverPolice", n = 3200)
nashville_tweets <- get_timeline("MNPDNashville", n = 3200)
kc_tweets <- get_timeline("kcpolice", n = 3200)
stlouis_tweets <- get_timeline("SLMPD", n = 3200)
louisville_tweets <- get_timeline("LMPD", n = 3200)
okc_tweets <- get_timeline("OKCPD", n = 3200)
longbeach_tweets <- get_timeline("LBPD", n = 3200)
elpasso_tweets <- get_timeline("EPPOLICE", n = 3200)
cincy_tweets <- get_timeline("CincyPD", n = 3200)
sanjose_tweets <- get_timeline("SanJosePD", n = 3200)
abq_tweets <- get_timeline("ABQPOLICE", n = 3200)
tampa_tweets <- get_timeline("TampaPD", n = 3200)
newark_tweets <- get_timeline("NewarkNJPolice", n = 3200)
portland_tweets <- get_timeline("PortlandPolice", n = 3200)
birmingham_tweets <- get_timeline("BhamPolice", n = 3200)
pittsburgh_tweets <- get_timeline("PghPolice", n = 3200)
tucson_tweets <- get_timeline("Tucson_Police", n = 3200)
minneapolis_tweets <- get_timeline("MinneapolisPD", n = 3200)
jersey_tweets <- get_timeline("JerseyCityPD", n = 3200)
omaha_tweets <- get_timeline("OmahaPolice", n = 3200)
virginia_tweets <- get_timeline("VBPD", n = 3200)
buffalo_tweets <- get_timeline("BPDAAlerts", n = 3200)
raleigh_tweets <- get_timeline("raleighpolice", n = 3200)
tulsa_tweets <- get_timeline("TulsaPolice", n = 3200)
norfolk_tweets <- get_timeline("NorfolkPD", n = 3200)
mesa_tweets <- get_timeline("MesaPD", n = 3200)
orlando_tweets <- get_timeline("OrlandoPolice", n = 3200)
fresno_tweets <- get_timeline("FresnoPolice", n = 3200)
sacramento_tweets <- get_timeline("SacPolice", n = 3200)
richmond_tweets <- get_timeline("RichmondPolice", n = 3200)
oakland_tweets <- get_timeline("oaklandpoliceca", n = 3200)
batonrouge_tweets <- get_timeline("BRPD", n = 3200)
colsprings_tweets <- get_timeline("CSPDPIO", n = 3200)
```

WEAPONS AND METAPHORS OF WAR

```
aurora_tweets <- get_timeline("AuroraPD", n = 3200)
wichita_tweets <- get_timeline("WichitaPolice", n = 3200)
arlington_tweets <- get_timeline("ArlingtonVaPD", n = 3200)
durham_tweets <- get_timeline("TheDurhamPolice", n = 3200)
yonkers_tweets <- get_timeline("YonkersPD", n = 3200)
saintpaul_tweets <- get_timeline("sppdmn", n = 3200)
toledo_tweets <- get_timeline("ToledoPolice", n = 3200)
savannah_tweets <- get_timeline("SavPolice", n = 3200)
littlerock_tweets <- get_timeline("LRpolice", n = 3200)
shreveport_tweets <- get_timeline("ShreveportPD", n = 3200)
lexington_tweets <- get_timeline("lexkypolice", n = 3200)
winston_tweets <- get_timeline("cityofwspolice", n = 3200)
saintpete_tweets <- get_timeline("StPetePD", n = 3200)
montgomery_tweets <- get_timeline("mpdmontgomery", n = 3200)
ftlauderdale_tweets <- get_timeline("ftlauderdalepd", n = 3200)
mobile_tweets <- get_timeline("MobileALPolice", n = 3200)
springfield_tweets <- get_timeline("SPD_HQ", n = 3200)
corpus_tweets <- get_timeline("CorpusChristiPD", n = 3200)
providence_tweets <- get_timeline("ProvidenceRIPD", n = 3200)
columbusga_tweets <- get_timeline("CPDGA", n = 3200)
chattanooga_tweets <- get_timeline("ChattanoogaPD", n = 3200)
stockton_tweets <- get_timeline("StocktonPolice", n = 3200)
madison_tweets <- get_timeline("madisonpolice", n = 3200)
```

##combine data frames

```
all_police_tweets <-
rbind(nypd_tweets,chicago_tweets,la_tweets,philly_tweets,houston_tweets,dc_tweets,
dallas_tweets,phoenix_tweets,sanantonio_tweets,miami_tweets,lasvegas_tweets,baltimor
e_tweets,detroit_tweets,sanfran_tweets,honolulu_tweets,boston_tweets,sandiego_tweets,
atlanta_tweets,
milwaukee_tweets,columbus_tweets,austin_tweets,charlotte_tweets,jacksonville_tweets,
fortworth_tweets,cleveland_tweets,seattle_tweets,denver_tweets,nashville_tweets,
kc_tweets,stlouis_tweets,louisville_tweets,okc_tweets,longbeach_tweets,elpaso_tweets,
cincy_tweets,sanjose_tweets,abq_tweets,tampa_tweets,newark_tweets,portland_tweets,
birmingham_tweets,pittsburgh_tweets,tucson_tweets,minneapolis_tweets,jersey_tweets,
omaha_tweets,virginia_tweets,buffalo_tweets,raleigh_tweets,tulsa_tweets,norfolk_tweets
,
mesa_tweets,orlando_tweets,fresno_tweets,sacramento_tweets,richmond_tweets,oakland
_tweets,
batonrouge_tweets,colsprings_tweets,aurora_tweets,wichita_tweets,arlington_tweets,
durham_tweets,yonkers_tweets,saintpaul_tweets,toledo_tweets,savannah_tweets,littleroc
k_tweets,
shreveport_tweets,lexington_tweets,winston_tweets,saintpete_tweets,montgomery_tweet
s,
ftlauderdale_tweets,mobile_tweets,springfield_tweets,corpus_tweets,providence_tweets,
```

WEAPONS AND METAPHORS OF WAR

```
columbusga_tweets, chattanooga_tweets, stockton_tweets,
madison_tweets)
View(all_police_tweets)

##clean tweets
all_police_tweets_clean <- plain_tweets(all_police_tweets)
view(all_police_tweets_clean)
##export as csv
write_as_csv(all_police_tweets, "twitter_data_raw")
write_as_csv(all_police_tweets_clean, "dissertation_data_clean")

##map of 1033 program equipment
dissertation_map <- ggplot() + geom_polygon(data = states, aes(x=long, y = lat, group =
group), fill = "white", color = "gray70", alpha=I(.5)) +
  guides(fill=FALSE) +
  coord_fixed(1.3) +
  theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(),
        panel.background = element_rect(fill = 'white', colour = 'white'),
        axis.line = element_line(colour = "white"), legend.position="right",
        legend.background = element_rect(fill = "white"), legend.key = element_rect(fill =
"white"), axis.ticks=element_blank(), axis.text.x=element_blank(),
        axis.text.y=element_blank()) +
  geom_point(data = dissertation_data_2_, aes(x=long, y=lat, size = equipment),
            pch=21, stroke = 1.2, alpha=I(.7)) +
  theme(axis.title.x = element_blank(), axis.title.y = element_blank()) +
  labs(title = "Figure 1. Equipment Transferred to Sampled Police Departments (N = 80)",
        subtitle = "As of 12/31/20") +
  font("title", face = "bold", size = 18) + font("subtitle", face = "italic", size = 16) +
  scale_size(range = c(1,10), name = "Equipment Amount", breaks = c(0, 100, 1000,
3000),
            labels = c("0", "100", "1,000", "3,000"))
dissertation_map

##make figure of google searches for police killings
google_pk <- gtrends(keyword = "police killing", geo = "US", low_search_volume =
TRUE, time = "all")
pk_interest <- google_pk$interest_over_time
trends_pk <- pk_interest %>% mutate(date=yymd(date), hits = as.numeric(hits))
pk_graph <- ggplot() +
  geom_line(data=trends_pk, aes(x=date, y=hits,)) +
  theme_pubr() +
  theme(legend.position="bottom") +
  labs(title = "Figure 3. Google searches for 'police killing' in in the US, 2004-2021",
        x = "", y = "Weighted Search Volume")
pk_graph
```

WEAPONS AND METAPHORS OF WAR

Appendix B: Words pilot tested for inclusion in LIWC dictionary assessing war metaphors (*included in final dictionary)

War* (χ^2 not computed ⁵)	Siege* ($\chi^2 = 16.33, p < .001$)
Conflict ($\chi^2 = 3.13, p = .08$)	Campaign* ($\chi^2 = 11.57, p < .001$)
Warfare* (χ^2 not computed)	Crusade* ($\chi^2 = 14.29, p < .001$)
Combat* ($\chi^2 = 28.13, p < .001$)	Feud ($\chi^2 = 1.39, p = .24$)
Fighting* ($\chi^2 = 15.13, p < .001$)	Vendetta ($\chi^2 = 1.96, p = .16$)
Struggle ($\chi^2 = .03, p = .85$)	Strife* ($\chi^2 = 16.33, p < .001$)
Bloodshed* ($\chi^2 = 25.14, p < .001$)	Hostility ($\chi^2 = .57, p = .45$)
Action* ($\chi^2 = 19.20, p < .001$)	Enmity* ($\chi^2 = 13.50, p < .001$)
Tussle* ($\chi^2 = 9.85, p = .002$)	Antagonism ($\chi^2 = 1.96, p = .16$)
Battle* ($\chi^2 = 28.13, p < .001$)	Discord* ($\chi^2 = 4.48, p = .03$)
Skirmish* ($\chi^2 = 12.46, p < .001$)	Disunity ($\chi^2 = .33, p = .56$)
Fight* ($\chi^2 = 18.24, p < .001$)	Hostilities* ($\chi^2 = .57, p < .45$)
Clash* ($\chi^2 = 9.14, p = .002$)	Mission* ($\chi^2 = 25.14, p < .001$)
Confrontation ($\chi^2 = .03, p = .85$)	Service* ($\chi^2 = 16.13, p < .001$)
Engagement* ($\chi^2 = 15.21, p < .001$)	Army* (χ^2 not computed)
Ceasefire* ($\chi^2 = 26.13, p < .001$)	Armed* ($\chi^2 = 10.13, p < .001$)
Collision* ($\chi^2 = 10.80, p = .001$)	Warrior* (χ^2 not computed)
Offensive* ($\chi^2 = 8.53, p = .003$)	Soldierly* (χ^2 not computed)
Attack* ($\chi^2 = 26.13, p < .001$)	Martial* ($\chi^2 = 10.80, p < .001$)
Blitz* (χ^2 not computed)	Forces* ($\chi^2 = 28.13, p < .001$)

⁵ Words with χ^2 not computed had no variability in their categorization.

WEAPONS AND METAPHORS OF WAR

Armed forces* (χ^2 not computed)

Militia* (χ^2 not computed)

Enemy* ($\chi^2 = 12.45, p < .001$)

Casualties* ($\chi^2 = 12.45, p < .001$)

Soldier* (χ^2 not computed)

WEAPONS AND METAPHORS OF WAR

Appendix C: Words pilot tested for inclusion in LIWC dictionary assessing police-related words (*included in final dictionary)

Police* ($\chi^2 = 28.13, p < .001$)	Enforcement* ($\chi^2 = 16.13, p < .001$)
Constable* ($\chi^2 = 6.53, p = .01$)	Patrol* ($\chi^2 = 13.33, p < .001$)
Deputy* ($\chi^2 = 28.13, p < .001$)	Suspect* (χ^2 not computed)
Detective* (χ^2 not computed)	Commissioner* ($\chi^2 = 16.13, p < .001$)
Marshal* ($\chi^2 = 1.13, p = .29$)	Arrest* (χ^2 not computed)
Officer* ($\chi^2 = 10.80, p < .001$)	Criminal* (χ^2 not computed)
Policeman* (χ^2 not computed)	Investigation* ($\chi^2 = 25.14, p < .001$)
Trooper* ($\chi^2 = 4.80, p = .03$)	Offender* ($\chi^2 = 24.14, p < .001$)
Cop* (χ^2 not computed)	Precinct* (χ^2 not computed)
Flatfoot ($\chi^2 = .36, p = .55$)	Jurisdiction* ($\chi^2 = 25.14, p < .001$)
Fuzz* (χ^2 not computed)	Incident* ($\chi^2 = 19.20, p < .001$)
Law enforcement agent* ($\chi^2 = 24.14, p < .001$)	Offence* ($\chi^2 = 13.33, p < .001$)
Law enforcer* (χ^2 not computed)	Civilian ($\chi^2 = .13, p = .72$)
Lawman* (χ^2 not computed)	Probation* ($\chi^2 = 21.55, p < .001$)
Lawwoman* (χ^2 not computed)	Judicial* ($\chi^2 = 19.20, p < .001$)
Patrolman* (χ^2 not computed)	Correctional* (χ^2 not computed)
Patrolwoman* ($\chi^2 = 26.13, p < .001$)	Profile* ($\chi^2 = 21.55, p < .001$)
Peace officer* ($\chi^2 = 10.80, p = .001$)	Enforce* ($\chi^2 = 10.80, p = .001$)
Sheriff* (χ^2 not computed)	Prosecute* ($\chi^2 = 22.53, p < .001$)
The man* ($\chi^2 = 4.17, p = .04$)	Jail* (χ^2 not computed)

WEAPONS AND METAPHORS OF WAR

Prison* (χ^2 not computed)

Squad ($\chi^2 = .50, p = .48$)

Chief* ($\chi^2 = 28.13, p < .001$)

Custody* (χ^2 not computed)

Protect* ($\chi^2 = 10.80, p < .001$)

Serve* ($\chi^2 = 16.13, p < .001$)

Pursuit* ($\chi^2 = 12.45, p < .001$)

Blue* (χ^2 not computed)

Badge* ($\chi^2 = 26.13, p < .001$)

Appendix D: Figures

Figure 1. Equipment Transferred to Sampled Police Departments (N = 80)
As of 12/31/20



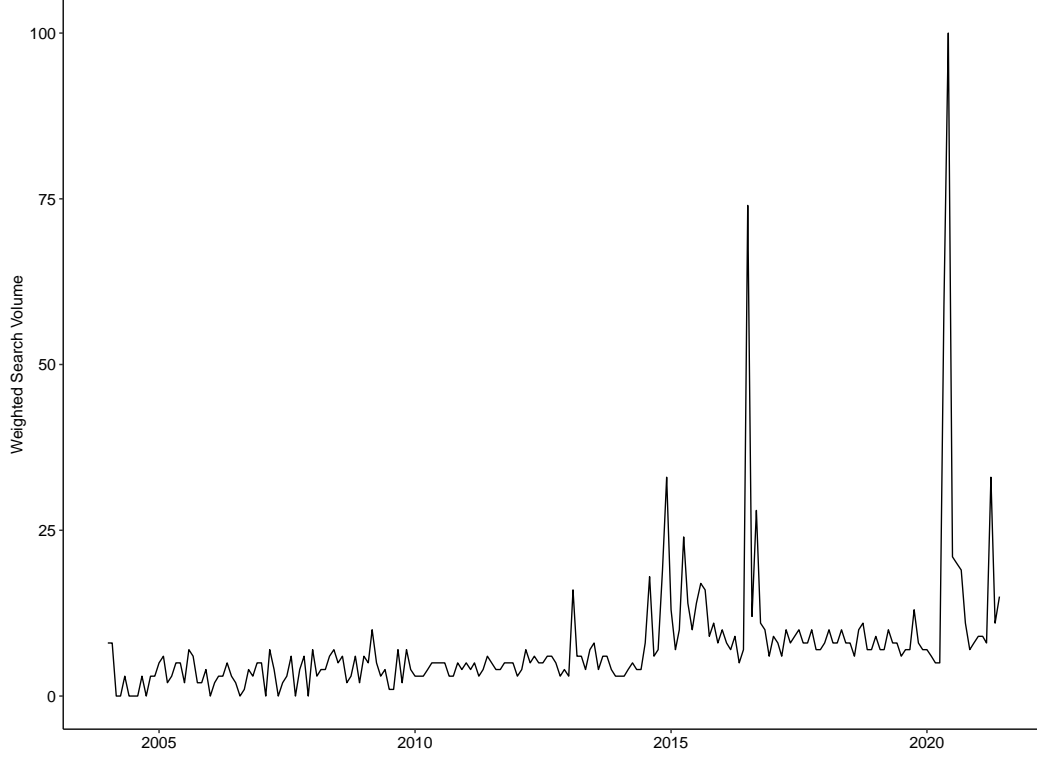
WEAPONS AND METAPHORS OF WAR

Figure 2. Word cloud generated from full sample of tweets.



WEAPONS AND METAPHORS OF WAR

Figure 3. Google searches for 'police killing' in in the US, 2004-2021



WEAPONS AND METAPHORS OF WAR

Appendix E: Tables

Table 1. Regression models predicting militarized equipment from war metaphor usage

	<i>B</i>	β	<i>SE</i>	<i>p</i>	<i>R</i> ²
Model 1					.02
War metaphor usage	-.59	-.15	.58	.31	
Model 2					.33
War metaphor usage	-.67	-.18	.50	.19	
City population	1.77	.57	.43	< .001	
Median household income	-.89	-.08	1.54	.57	
Violent crime	-.31	-.07	.58	.59	

WEAPONS AND METAPHORS OF WAR

Table 2. Bivariate correlations between study variables

	1.	2.	3.	4.	5.	6.
1. War metaphor usage	1	.28*	.05	.09	.14	-.06
2. Police language usage		1	.01	.03	.32**	.17
3. 1033 Program equipment			1	.24*	.02	-.04
4. Population				1	.30**	-.05
5. Median household income					1	.02
6. Violent crime						1

Note. All variables have been log transformed. * $p < .05$; ** $p < .01$

WEAPONS AND METAPHORS OF WAR

Table 3. Regression models predicting militarized equipment from other word categories

	<i>B</i>	<i>β</i>	<i>SE</i>	<i>p</i>	<i>R</i> ²
Model 1					.12
We	94.43	.11	119.68	.43	
They	-49.56	-.01	678.52	.94	
Positive emotion	35.41	.07	90.23	.70	
Negative emotion	82.35	.05	356.70	.82	
Anger	-599.97	-.16	630.641	.35	
Power	-42.24	-.07	77.48	.59	
Risk	12.70	.01	277.89	.96	
Death	1180.61	.38	507.94	.02	

WEAPONS AND METAPHORS OF WAR

References

- Angiani, G., Ferrari, L., Fontanini, T., Fornacciari, P., Iotti, E., Magliani, F., & Manicardi, S. (2016). A comparison between preprocessing techniques for sentiment analysis in Twitter. *KDWeb*.
- Bishop, K. (1990, August 10). Military Takes Part in Drug Sweep And Reaps Criticism and a Lawsuit (Published 1990). *The New York Times*.
<https://www.nytimes.com/1990/08/10/us/military-takes-part-in-drug-sweep-and-reaps-criticism-and-a-lawsuit.html>
- Breusch, T. S., & Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. *Econometrica*, *47*(5), 1287–1294. <https://doi.org/10.2307/1911963>
- Burke, B. L., Kosloff, S., & Landau, M. J. (2013). Death Goes to the Polls: A Meta-Analysis of Mortality Salience Effects on Political Attitudes: Terror Management and Politics. *Political Psychology*, *34*(2), 183–200. <https://doi.org/10.1111/pops.12005>
- Burkhardt, B. C., & Baker, K. (2019). Agency Correlates of Police Militarization: The Case of MRAPs. *Police Quarterly*, *22*(2), 161–191.
<https://doi.org/10.1177/1098611118800780>
- Cook, R. D., & Weisberg, S. (1982). *Residuals and Influence in Regression*. Taylor & Francis.
- Delehanty, C., Mewhirter, J., Welch, R., & Wilks, J. (2017). Militarization and police violence: The case of the 1033 program. *Research & Politics*, *4*(2), 205316801771288.
<https://doi.org/10.1177/2053168017712885>
- DLA Law Enforcement Support Office*. (2019). Defense Logistics Agency.
<https://www.dla.mil/DispositionServices/Offers/Reutilization/LawEnforcement.aspx>

WEAPONS AND METAPHORS OF WAR

Dodou, D., & de Winter, J. C. F. (2014). Social desirability is the same in offline, online, and paper surveys: A meta-analysis. *Computers in Human Behavior*, *36*, 487–495.

<https://doi.org/10.1016/j.chb.2014.04.005>

Elwood, W. N. (1995). Declaring War on the Home Front: Metaphor, Presidents, and the War on Drugs. *Metaphor and Symbolic Activity*, *10*(2), 93–114.

https://doi.org/10.1207/s15327868ms1002_2

Flusberg, S. J., Matlock, T., & Thibodeau, P. H. (2017). Metaphors for the War (or Race) against Climate Change. *Environmental Communication*, *11*(6), 769–783.

<https://doi.org/10.1080/17524032.2017.1289111>

Freud, S. (1915). *Psychopathology of Everyday Life*. Macmillan.

Ghasemi, A., & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2),

486–489. <https://doi.org/10.5812/ijem.3505>

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The Causes and Consequences of a Need for Self-Esteem: A Terror Management Theory. In R. F. Baumeister (Ed.), *Public Self and Private Self* (pp. 189–212). Springer New York. https://doi.org/10.1007/978-1-4613-9564-5_10

Grossman, D. (2014). *On Killing: The Psychological Cost of Learning to Kill in War and Society* (Revised edition). Open Road Media.

Gunderson, A., Cohen, E., Schiff, K. J., Clark, T. S., Glynn, A. N., & Owens, M. L.

(2020). Counterevidence of crime-reduction effects from federal grants of military equipment to local police. *Nature Human Behaviour*, 1–11.

<https://doi.org/10.1038/s41562-020-00995-5>

WEAPONS AND METAPHORS OF WAR

- Han, P. K. J., Moser, R. P., & Klein, W. M. P. (2006). Perceived Ambiguity About Cancer Prevention Recommendations: Relationship to Perceptions of Cancer Preventability, Risk, and Worry. *Journal of Health Communication, 11*(sup001), 51–69. <https://doi.org/10.1080/10810730600637541>
- Harvey, A. C. (1990). *The Econometric Analysis of Time Series*. MIT Press.
- Hauser, D. J., & Schwarz, N. (2020). The War on Prevention II: Battle Metaphors Undermine Cancer Treatment and Prevention and Do Not Increase Vigilance. *Health Communication, 35*(13), 1698–1704. <https://doi.org/10.1080/10410236.2019.1663465>
- Jimenez, T. (2020). *MRAP* (0.1.0) [R; R].
- Jimenez, T., Arndt, J., & Landau, M. J. (2021). Walls block waves: The inundation metaphor of immigration predicts support for a border wall. *Journal of Social and Political Psychology*.
- Jimenez, T., Helm, P. J., & Arndt, J. (2020). Fighting death with health inequality: The role of mortality cognition and shifting racial demographics in policy attitudes. *Group Processes & Intergroup Relations*.
- Jimenez, T., Helm, P. J., & Arndt, J. (Under review). *Racial prejudice predicts police militarization*.
- Kearney, M. W. (2016). *rtweet: Collecting Twitter data*. Comprehensive R Archive Network.
- Kraska, P. B. (2007). Militarization and Policing—Its Relevance to 21st Century Police. *Policing: A Journal of Policy and Practice, 1*(4), 501–513. <https://doi.org/10.1093/police/pam065>

WEAPONS AND METAPHORS OF WAR

Kraska, P. B., & Kappeler, V. E. (1997). Militarizing American Police: The Rise and Normalization of Paramilitary Units. *Social Problems*, 44(1), 1–18.

<https://doi.org/10.2307/3096870>

Kraska, P. B., & Paulsen, D. J. (1997). Grounded research into U.S. paramilitary policing: Forging the iron fist inside the velvet glove. *Policing and Society*, 7(4), 253–270. <https://doi.org/10.1080/10439463.1997.9964777>

Kunselman, J., Vito, G. F., & Walsh, W. F. (2013). Police Managers' Attitudes towards a US Marine Corps Military Model: Responses to Corps Business. *International Journal of Police Science & Management*, 15(4), 305–322.

<https://doi.org/10.1350/ijps.2013.15.4.320>

Lakoff, G., & Johnson, M. (1980a). *Metaphors we live by*. University of Chicago Press.

Lakoff, G., & Johnson, M. (1980b). Conceptual Metaphor in Everyday Language. *The Journal of Philosophy*, 77(8), 453. <https://doi.org/10.2307/2025464>

Landau, M. J. (2017). *Conceptual metaphor in social psychology: The poetics of everyday life* (1st Edition). Routledge, Taylor & Francis Group.

Landau, M. J., Arndt, J., & Cameron, L. D. (2018). Do metaphors in health messages work? Exploring emotional and cognitive factors. *Journal of Experimental Social Psychology*, 74, 135–149. <https://doi.org/10.1016/j.jesp.2017.09.006>

Lehman, D. R., Chiu, C., & Schaller, M. (2004). Psychology and Culture. *Annual Review of Psychology*, 55(1), 689–714. <https://doi.org/10.1146/annurev.psych.55.090902.141927>

Marston, G. (2000). Metaphor, morality and myth: A critical discourse analysis of public housing policy in Queensland. *Critical Social Policy*, 20(3), 349–373.

<https://doi.org/10.1177/026101830002000305>

WEAPONS AND METAPHORS OF WAR

McLaughlin, K. (2020). One of America's most popular police trainers is teaching officers how to kill. *Insider*. <https://www.insider.com/bulletproof-dave-grossman-police-trainer-teaching-officers-how-to-kill-2020-6>

McMichael, C. (2017). Pacification and police: A critique of the police militarization thesis. *Capital & Class*, 41(1), 115–132. <https://doi.org/10.1177/0309816816678569>

Mummolo, J. (2018). Militarization fails to enhance police safety or reduce crime but may harm police reputation. *Proceedings of the National Academy of Sciences*, 115(37), 9181–9186. <https://doi.org/10.1073/pnas.1805161115>

Musgrave, S. (2014). Every item distributed to local law enforcement by the Pentagon's 1033 program over two years. *MuckRock*.

<https://www.muckrock.com/news/archives/2014/aug/15/we-have-pentagon-1033-program-data/>

Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). *Linguistic Inquiry and Word Count: LIWC*. LIWC.net

Pennebaker, James W., Boyd, R. L., Jordan, K., & Blackburn, K. (2015). *The Development and Psychometric Properties of LIWC2015*.

<https://doi.org/10.15781/t29g6z>

Potts, A., & Semino, E. (2019). Cancer as a Metaphor. *Metaphor and Symbol*, 34(2), 81–95. <https://doi.org/10.1080/10926488.2019.1611723>

Pyszczynski, T., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D.

(2006). Mortality Salience, Martyrdom, and Military Might: The Great Satan Versus the Axis of Evil. *Personality and Social Psychology Bulletin*, 32(4), 525–537.

<https://doi.org/10.1177/0146167205282157>

WEAPONS AND METAPHORS OF WAR

Ramey, D. M., & Steidley, T. (2018). Policing Through Subsidized Firepower: An Assessment of Rational Choice and Minority Threat Explanations of Police Participation in the 1033 Program*. *Criminology*, *56*(4), 812–856. <https://doi.org/10.1111/1745-9125.12193>

Santa Ana, O. (1999). 'Like an animal I was treated': Anti-immigrant metaphor in US public discourse. *Discourse & Society*, *10*(2), 191–224. <https://doi.org/10.1177/0957926599010002004>

Santa Ana, Otto, Waitkuweit, K. H., & Erana Hernandez, M. (2017). Blood, Soil, and Tears: Conceptual Metaphor-based Critical Discourse Analysis of the Legal Debate on US Citizenship. *Journal of Language & Politics*, *16*(2), 149–175. <https://doi.org/10.1075/jlp.15038.san>

Shapiro, S. S., & Wilk, M. B. (1965). An Analysis of Variance Test for Normality (Complete Samples). *Biometrika*, *52*(3/4), 591–611. <https://doi.org/10.2307/2333709>

Skolnick, J. H., & Fyfe, J. J. (1993). *Above the Law: Police and the Excessive Use of Force*. Free Press. <https://www.ojp.gov/library/abstracts/above-law-police-and-excessive-use-force>

Solomon, S., Greenberg, J., & Pyszczynski, T. (2015). *The worm at the core: On the role of death in life*. Random House.

Sontag, S. (1978). *Illness as metaphor*. Farrar, Straus, and Giroux.

Steidley, T., & Ramey, D. M. (2019). Police militarization in the United States. *Sociology Compass*, *13*(4), e12674. <https://doi.org/10.1111/soc4.12674>

WEAPONS AND METAPHORS OF WAR

Steinert, H. (2003). The Indispensable Metaphor of War: On Populist Politics and the Contradictions of the State's Monopoly of Force. *Theoretical Criminology*, 7(3), 265–291.

Sterling, J., Jost, J. T., & Bonneau, R. (2020). Political psycholinguistics: A comprehensive analysis of the language habits of liberal and conservative social media users. *Journal of Personality and Social Psychology*, 118(4), 805–834.

<https://doi.org/10.1037/pspp0000275>

Thibodeau, P. H., & Boroditsky, L. (2011). Metaphors we think with: The role of metaphor in reasoning. *PLOS ONE*, 6(2), e16782.

<https://doi.org/10.1371/journal.pone.0016782>

Thibodeau, P. H., Crow, L., & Flusberg, S. J. (2017). The metaphor police: A case study of the role of metaphor in explanation. *Psychonomic Bulletin & Review*, 24(5), 1375–1386. <https://doi.org/10.3758/s13423-016-1192-5>

Tighe, S., & Brown, W. (2015). The militarization of law enforcement: Bypassing the Posse Comitatus Act. *Justice Policy Journal*, 12(2), 1–39.

Triandis, H. C. (2007). Culture and psychology: A history of the study of their relationship. In *Handbook of cultural psychology* (pp. 59–76). The Guilford Press.

Turner II, F., & Fox, B. H. (2019). Public servants or police soldiers? An analysis of opinions on the militarization of policing from police executives, law enforcement, and members of the 114th congress U.S. house of representatives. *Police Practice and Research*, 20(2), 122–138. <https://doi.org/10.1080/15614263.2017.1371600>

WEAPONS AND METAPHORS OF WAR

- Wunderlich, F., & Memmert, D. (2020). Innovative Approaches in Sports Science—Lexicon-Based Sentiment Analysis as a Tool to Analyze Sports-Related Twitter Communication. *Applied Sciences*, *10*(2), 431. <https://doi.org/10.3390/app10020431>
- Xue, J., Mao, Z., & Li, N. (2013). Conceptual metaphor in American presidential inaugural addresses. *Theory and Practice in Language Studies*, *3*(4), 678–683.

WEAPONS AND METAPHORS OF WAR

VITA

The author was born and raised in Rio Rancho, New Mexico and is an enrolled member of Nambé Pueblo. He earned a Bachelor of Arts in Psychology from Fort Lewis College in 2016. He began his doctoral studies in Personality and Social Psychology from the University of Missouri, earning a Master of Arts in 2019 and a Doctor of Philosophy in 2021. In graduate school, he was a recipient of the Gus T. Ridgel fellowship, which honors Dr. Ridgel, the first Black graduate of the University of Missouri. Additionally, the author was a recipient of the Health Policy Research Scholars fellowship from the Robert Wood Johnson Foundation. Upon graduating from the University of Missouri, he will begin as an Assistant Professor of Psychology at the University of Washington. In his free time, he enjoys traveling with his wife Milla, cooking vegetarian food, reading history and politics, playing and listening to music, and following Arsenal Football Club.