US Centre Summer Research Grant

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Project title: Perceptions of Surveillance: Exploring feelings held by Black Boston community leaders toward automated camera enforcement of roadway infractions

Summary of project:

Countless evaluations have demonstrated that automated camera enforcement (ACE) is an effective tool for upholding adherence with traffic laws, improving roadway safety, and cultivating driving behavior change. However, since its introduction to the US in the 1980s, implementation of ACE has sparked much controversy. Advocates in favor cite improved cost efficiencies, reduced travel times, and decreased roadway fatalities as motivation for adoption. Those opposed are deterred by fears surrounding lacking data privacy and manipulation, technology malfunction, and excessive civilian surveillance. Representatives in Massachusetts have brought legislation that would allow for ACE of traffic violations to the State Senate floor several times; most recently in 2021. Each time, it has been voted down. However, as the technology improves, congestion worsens, and roadway deaths skyrocket, many elected officials feel that the appetite for ACE is growing.

Thus far, research on the subject has focused on ACE technology performance. However, since opposition seems to be largely emotion-driven, further research into perception, feelings, and experiences would surely prove invaluable to those seeking to advance policy. Additionally, as the Black Lives Matter movement has brought conversations of police reform to the policy mainstage, correctly situating ACE within our current social context takes on heightened levels of importance; ACE policies host implications for both in-person police presence and algorithmic discrimination, yet the interactions of ACE with race, oppression, liberation, and mobility have been largely overlooked.

Narrowing these gaps, I tackled the following question: How do Black community leaders in Boston understand the potential use of ACE for both traffic and transit roadway violations? I convened six focus groups, each comprised of 5-6 neighborhood association elected board members who self-identify as Black, and subjected the transcripts from these session to thematic analyses. Findings can be found within the accompanying summary report. Ultimately, this work sought to add nuance to the policy approach to ACE while amplifying the voices of communities historically abused by systems of policing, surveillance, and enforcement.

Perceptions of Surveillance
Exploring feelings held by Black Boston community leaders toward automated camera enforcement of roadway infractions.

1. INTRODUCTION

Since the 1960s, automated camera enforcement has been used around the world to uphold adherence with traffic laws and regulations, improve roadway safety conditions, and cultivate behavior change. Camera enforcement programs generally collect photographic data via combined radar and image capturing technology, mounted either on roadway and sidewalk infrastructure or on-board vehicles (e.g. buses, squad cars) (Rodier and Shaheen, 2007). This data can be used to determine speed, to serve as visual evidence of a violation, or to discern – either through license plate imaging or both plate and driver imaging – whom to cite with a corresponding infraction.

Numerous studies have evaluated the impact of camera enforcement programs on roadway behavior and safety outcomes. A San Jose, California study found a 15% reduction in the share of speeding categorized as 10mph or more over the speed limit following the introduction of speed-enforcement cameras (Davis, 2001). Paradise Valley, Arizona and National City, California saw 40% (Institute of Transportation Engineers, 1999) and 51% (Berkuti and Osbuen, 1998) reductions in crashes, respectively, post camera introduction. Pulling from 35 studies across 11 non-US countries, the Cochrone Collaboration's report – widely acknowledged as a leading effort in international review of roadway camera enforcement systems – found camera implementation corresponded with an overall reduction in instances of speeding over the posted speed limit ranging from 8% to 70%, reductions in accounts of crashes in the vicinity of cameras of 8% to 49%, and decrease in the proportion of crashes resulting in fatalities or serious injuries ranging from 11% to 44% (Wilson et al., 2010).

Single occupancy vehicles are not the only travel mode with camera enforcement applications. Bus-only lanes, which have "the potential to significantly improve bus speeds and reliability (Cesme et al., 2018)," are highly dependent on adherence to mode-restricted space use regulations to deliver their full benefit. Additionally, perception and/or awareness of lacking bus lane enforcement has been found to increase violation rates, further diminishing the effectiveness of the lane (Gavanas et al., 2013; Kepaptsoglou et al., 2011). A New York City-based assessment found that in the absence of camera enforcement, between 30% and 50% of buses traveling in bus lanes face some sort of significant obstruction, increasing trip times (Safran et al., 2014). However, since implementing camera enforcement of bus lanes, NYC bus speeds along routes featuring bus-only infrastructure have increased 34% (Frost, 2019).

Despite a wealth of success statistics, uptake of camera enforcement in the US has been comparatively slow. With fewer than half of the country's states hosting camera programs of any kind, the US lags far behind nations generally thought of as its infrastructural peers; Germany, the UK, Japan, France, and Belgium, to name a few (European Road Safety Observatory, 2018). As of July 2021, just 19 states and Washington D.C. have speed camera enforcement programs in operation, while D.C. and 22 states use red-light cameras (National Conference of State Legislatures, 2021). San Francisco and New York stand as the only two municipalities running system-wide camera enforcement programs for their bus lanes (Goffman, 2018), with a handful of cities – such as Los Angeles (Linton, 2021) and Philadelphia (Murphy, 2020) – preparing to potentially pilot the approach on a select few of their bus-only roadway segments. This straggling positions the US as a unique case (Fox, 2020) worthy of a focused lens within study specific to the topic.

Since its introduction to the US in the 1980s, automated camera enforcement for roadway application has been controversial. Spirited debate regarding implementation of such programs continues in courthouses and legislative halls across the country. One such place is the state senate floor in Boston, Massachusetts. State-level elected representatives have unsuccessfully proposed legislation that would allow for camera enforcement of certain traffic violations several times within the last decade. The most recent proposal was put forth as a part of a 2021 Road Safety Bill filed by Governor Charlie Baker. Despite a historical lack of support, many elected officials feel that appetite within the state for camera enforcement of traffic violations is growing (Young, 2020; DeCosta-Klipa, 2021).

2. LITERATURE REVIEW

Numerous local studies in the US have attempted to gauge public opinion of camera enforcement of traffic violations. The vast majority of these have focused exclusively on red-light running and speeding violations, and collected their data via random sample phone surveys (Freedman et al., 1990; Retting et al., 1999; Maccubbin et al., 2001; Retting et al., 2008; Hu and McCartt, 2016). Offering more geographically generalizable findings, one of the most recent nationwide surveys found that 69% of participants supported camera enforcement of traffic violations, 15% disapproved of it, and 16% had undecided, mixed feelings on the subject (NHTSA, 1998). This particular national survey attempted to gain a deeper understanding of views held by those opposed by presenting participants with an optional selection of potential concerns to self-align with. Primary objections found were:
- Violation of privacy rights / government infringement
- Comfort derived from in-person contact with an officer
- Licensee must pay ticket no matter who was driving during the infraction
- Revenue generating system; government money-grab
- Camera systems feel intentionally deceptive

These specific concerns have been corroborated by a handful of more recent studies from across the country. Whether in Chicago (Kidwell and Richards, 2014), Los Angeles (Price, 2019), or San Mateo, California (ibid.), in nearly all cases, manipulation and abuse of personal data proved the most frequently expressed public concern associated with camera enforcement program implementation.

Further deepening our understanding of public perception of traffic-related camera enforcement (CE), the interactions that gender (Retting et al., 1999; Blincoe et al., 2006; Shaaban, 2017), age (Soole et al., 2008; Shaaban, 2017), and location (IAM, 2014; Passetti, 1997; Soole et al., 2008) have with support for this enforcement model have been explored. Literature on these topics features general consensus on the following findings: those who identify as men are less in favor of CE than persons of all other genders, the young – most commonly defined as under 35 within the literature – are less in favor of CE than the old, and those in rural and suburban environments view CE less favorably than those in dense urban environments.

One specific interaction between identity and opinion, however, has not been thoroughly examined. Existing research fails to reflect perspectives of communities who historically have had a uniquely negative relationship with law enforcement. It is extensively documented that police interaction with communities of color in the US – Black communities in particular – is disproportionately frequent, intrusive, traumatic, and deadly (Butler, 2017; Engel et al., 2012; Gelman at al., 2007; Hayes, 2017; Johnson et al., 2017; Rosenbaum, 2006; Taylor, 2006; Tyler et al., 2015; Wietzer, 2000). This would suggest that people of color may have strong or otherwise unique feelings toward camera technology as a law enforcement strategy.

Existing camera enforcement research further fails to look beyond performance analysis; both the performance of the technology in the field as well as its impact on motorist behavior. These facets of camera enforcement are important, and indeed deserving of attention. However, given that opposition to this approach to roadway overseeing seems to be largely emotion-driven, further research into perception, feelings, and experiences would surely prove invaluable. Similarly imbalanced, the conversation surrounding camera enforcement has been hyper-focused on red-light and speed limit applications. With interest and investment in bus-priority roadway design presently sweeping the globe (GlobalBRTdata, 2022), exploration of camera enforcement's applications for transit infrastructure should rise to the fore.

This research attempts to narrow some of these gaps and answer the following question: How do Black community leaders in Boston understand the potential use of automated camera enforcement for traffic and transit roadway violations?

3. METHODOLOGY

3.1 Data Collection

Numerous researchers have expressed their dissatisfaction with surveys as the research methodology most commonly used in efforts to gain nuanced insight into the debate over camera enforcement (Wissinger et al., 2000; Soole et al., 2008; Blincoe et al., 2006). To deepen the understanding of perceptions gleaned from surveys, I deployed a focus group methodology; note that this was made possible by funding provided by the Phelan US Centre at the London School of Economics. In addition to having the benefits of being comparatively inexpensive, flexible, and quick to set up (Robson and McCartan, 2016), focus groups have proven particularly useful in situations where the topic of interest may be awkward, taboo, or highly politicized as "less inhibited members may break the ice or provide mutual support, encouraging active participation (Hopkins, 2007)." Given its relation to matters of data privacy, potential facial image capturing, and potential job loss of enforcement officers – to name a few concerns – camera enforcement could certainly be classified as a 'highly politicized' subject.

I convened six focus group ranging in duration from 90 to 115 minutes. These groups were comprised of community leaders who all racially self-identified as Black. In this case, 'community leaders' refers specifically to individuals who serve in an elected, unpaid capacity on the boards of Boston neighborhood associations. These individuals are entrusted with acting on behalf of their constituents and neighbors. They regularly host community meetings, are tasked with information dissemination, and are entrusted to collect and, to the best of their ability, mitigate grievances held by community members. Knowing that these individuals are accustomed to thinking beyond themselves, placing collective views and collective good at the fore, I hoped that featuring them would allow amplification of many more Black voices, a sort of multiplier effect; especially as the lion's share of Black neighborhood association board members serve in Boston's majority Black neighborhoods.

Recruitment was primarily conducted via email. 103 neighborhood associations received an email invitation to participate in this research pending their eligibility: having at least one elected board member who identifies as Black. As of November 1st, 2021 when invitations to participate in this research were drafted, this list of 103 encompassed, to my knowledge, all active neighborhood associations in Boston with a public-facing web-presence of any kind: website, Facebook page, mention on City's neighborhood-specific information web pages. The email addresses used to extend these invitations were compiled by way of the official websites or Facebook pages of each neighborhood association, or by way of pre-existing personal contact.

The logistical design elements of these focus groups were shaped both by advised best practices, and operational practicality. There is little consensus among scholars regarding the ideal number of participants for a fruitful focus group. However, the range of no fewer than four and no greater than twelve encompasses the full set of advised group sizes found, with between five and eight participants most regularly cited as preferable (Fern, 1982; Osborn, 1953; Krueger, 2002; Merton et al., 1956). Because of this peer advice, and myself feeling that 90 minutes would not be enough to comfortably create enough space for eight participants to contribute fully, I sought to form groups of five or six. Schedule alignment among participants was such that I was able to run five groups of five community leaders each, and one group of two. This totaled 27 participants representing 22 different neighborhood associations. The choice of a 90-minute session was also driven largely by participant availability.

3.2 Data Analysis

I chose to utilize a thematic analysis methodology. Thematic analysis is a highly iterative process that "seeks to unearth the themes salient in a text at different levels (Attride-Stirling, 2001)" through the creation of a set of thematic networks. These networks can be thought of as web-like links between ideas that build upon one another, traveling toward the identification of primary themes central to the description of the phenomenon of interest (Daly et al., 1997; Nowell et al., 2017). Within the thematic analysis framework, an inductive analytical approach was taken. This entailed the application of a data-driven interpretation by which the raw transcripts were read and re-read many times over to allow themes to emerge (Boyatzis, 1998). Inductive analysis was selected because it takes on an exploratory orientation and is often applied when attempting to decipher meaning-making and understanding (Guest et al., 2014). Conversely, deductive, or confirmatory analysis is hypothesis-driven and allows the researcher to study a specific idea that they have generated prior to any data analysis (Crabtree and Miller, 1999). Given my specific research interest, an exploratory lens was favorable to an explanatory one. Additionally, thematic analysis' demonstrated rooting in excerpts from the raw data "ensures that interpretation remains directly linked to the words of participants (Patton, 1990)"; a principle central not only to the establishment of rigor and credibility, but also central to the respecting of research participants (ibid; Thomas and Harden, 2008).

4. BRIEF OVERVIEW OF FINDINGS

Note: For detailed findings associated with this research, please see forthcoming publication.

Two stages of thematic analysis combined to answer the question of how Black community leaders in Boston understand the potential use of automated camera enforcement for traffic and transit roadway violations. Stage one sought to establish an understanding of feelings toward Boston streets as they currently function. This stage revealed the following widely agreed upon themes: Boston roadways are unsafe and invoke worry; the current system of police-led, in-person roadway enforcement does not mitigate this worry nor does it seem to effectively incite safer behavior. Building on stage one, stage two sought to understand feelings specific to camera enforcement and its potential acceptability in the Boston context. The following global theme emerged: Though lukewarm on camera enforcement in general, Black community leaders feel that Boston may be receptive to a camera enforcement program if it were applied exclusively to bus-infrastructure (i.e. bus lanes and bus stops), were operated by the MBTA with an independent oversight committee able to dole out consequences should mismanagement or violation of data protection agreements be uncovered, and were intended to serve as an interim measure en-route to the installation of self-enforcing roadway design.

This research found that Black Boston community leaders share many of the concerns highlighted in the literature as felt by white and non-white members alike – concerns of data privacy and data abuse, policy opacity, and government money-grabbing. In particular, data privacy was repeatedly spoken about as the make-or-break issue. However, their level of concern regarding these matters, as well as those specifically focused on the potential for a camera enforcement program to inequitably target communities of color, were, when pooled collectively, not felt so strongly as to deter consideration of implementation in the case of transit applicability. Ultimately, though having expressed that camera enforcement felt "a bit scary" and "undoubtedly would have shortcomings," participating Black community leaders offered opinions that closely align with what has been argued for elsewhere around the country, specifically that, "The use of cameras rather than in-person officers for roadway law enforcement would reduce the severity of incidences of unjustified targeting of people of color, resulting in more consistent and comprehensive policing of traffic laws (Fox, 2020).

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