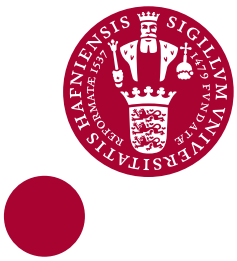

Ticket Inspectors in Action

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Ticket Inspectors in Action: Body-worn Camera Analysis of Aggressive and Non-aggressive Passenger Encounters

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Abstract

Objective: Workplace aggression is a harmful occupational hazard, which has been associated with individual and organizational level risk factors. By comparison, little is known about the face-to-face interactional dynamics that shape employee victimizations. To address this gap, we provide a micro-situational analysis of how ticket inspector actions are associated with the risk of passenger aggression. Method: Data was a video sample of ticket fining events in public busses recorded by occupa-

tional body-worn cameras. Results: Our empirical analysis suggests that aggressive fining events unfold as “character contests”, in which the actions used by the inspectors are associated with the aggressive outcome. Conclusions: These findings are in line with situational violence studies highlighting that aggressive incidents often develop as an interplay between victim and offender actions. We propose focusing on behavioral actions of employees for prevention measures of workplace aggression.

Keywords: Workplace aggression, public transport, character contest, customer communication, conflict management, law enforcement

Introduction

Workplace aggression is a known risk for employees working with citizens (Chappell & Di Martino, 2006; Geoffrion et al., 2017; Piquero, Piquero, Craig, & Clipper, 2013). Highlighting this issue, four percent of European employees report having been exposed to physical violence by a citizen within the last year, with verbal victimizations being even more prevalent (Guay, Goncalves, Jarvis, & behavior, 2014; LeBlanc & Kelloway, 2002; Milczarek, 2010). Public employees particularly known to be at risk include healthcare workers (Kansagra et al., 2008; Landau & Bendalak, 2010; Taylor & Rew, 2011), police officers (Rabe-Hemp & Schuck, 2007; van Reemst, Fischer, & Zwirs, 2015), social workers (Ringstad, 2005), correctional officers (Konda, Reichard, & Tiesman, 2012), bus drivers and ticket inspectors (Assunção & Medeiros, 2015; Geoffrion et al., 2017; Piquero et al., 2013). Further, the known health and well-being consequences for victimized public employees (for a review, Lanctôt & Guay, 2014) emphasize the need to investigate the dynamics of workplace aggression in order to inform preventive strategies.

The existing occupational victimization literature has identified a range of individual and organizational explanations of work-life aggression. For example, studies find a positive association between occupational victimization and the previous criminal and addiction records of the perpetrators involved (Andersen, Gadegaard, & Høgh, 2015; Chappell & Di Martino, 2006; Hogh & Viitasara, 2005; Møllerhøj, Stølan, Brandt-Christensen, Sørensen, & Raben, 2016). Further, analyses at the organizational level show a relationship between high pressure work environments and increased incidents of threats and violence (Andersen, Hogh, Biering, & Gadegaard, 2018; Sharipova, Hogh, & Borg, 2010). By comparison, few studies have examined how victimizations may be shaped by the face-to-face interaction patterns between the employees and citizens (van Reemst, 2016). Among the key exceptions, Landau and Bendalak (2010) examined the factors related to staff victimizations in hospital emergency wards and showed a positive association between the inability to communicate effectively with patients and the likelihood of serious aggression towards staff. Also emphasizing the importance of communication, Rabe-Hemp and Schuck (2007) found a lower likelihood of police staff victimizations in cases where the officers initiated contact with citizens when first arriving to the scene. These studies indicate the value of examining employee victimizations at the situational level, although it should be noted that neither of these two studies provides detailed insights into how employee actions *within* the conflict may shape the likelihood of citizen aggression. As such, the work-life victimization literature mirrors the wider field of research on aggression and violence, in which situational studies of interpersonal aggression are much less common than examinations of the individual or institutional background conditions (Bowman, Whitehead, & Raymond, 2018; Collins, 2008).

To address this research gap, the current article takes its point of departure in situational approaches to the study of interpersonal aggression (Block, 1981; Collins, 2008; Felson & Steadman, 1983). What initially warrants such a perspective is the simple observation that even those individuals with the highest propensity for aggression (e.g., low self-control) only behave aggressively in very few and specific face-to-face interactions. Following the key insight that people tend to act aggressively as a reaction to situational circumstances, we examine the potential interactional influences on aggression in fining events where a passenger fails to display a valid ticket when requested by a bus ticket inspector. Our focus is on the different types of fining events where the inspectors are at risk of passenger aggression, and how the actions of the ticket inspector may shape this risk.

To this end, we draw on micro-interactional theory suggesting that aggression often arises from "character contests" by which a conflict party loses face in an encounter and then acts aggressively in order to defend or regain respect (Goffman, 1967; Luckenbill, 1977). By resorting to aggression and sometimes even violence, this theory proposes that individuals seek to recover a sense of self-confidence and status as a reaction to the experience of being shamed or insulted by the counterpart (Ting-Toomey, 2015). This assertion has previously been applied as an explanation of homicides (Luckenbill, 1977), dispute-related assaults (Deibert & Miethe, 2003), and everyday disagreements (Malone, 1994), but is rarely considered as a framework for interpreting victimizations in the workplace. One exception is Suquet (2019), who describes ticket fare evasion as a negotiation about whether the event should be defined as "deviant." The legitimacy of the issued fine may, for example, be contested by the passenger, and

such face-to-face negation about moral fairness is a hallmark of character contests (Goffman, 1967).

Several key observations across the existing studies on violent character contests may be relevant for the comprehension of aggressive ticket fining encounters. Importantly, character contests may be more common in public places than in private places, given that reputation management is more salient when in the presence of an audience (Luckenbill, 1977). Further, some, albeit not all studies (Deibert & Miethe, 2003), suggests that men and younger persons are more likely to engage in character contests (Katz, 1988; Polk, 1994). Victim behavior may also play a key role during character contests, as these encounters involve a collision of wills whereby the prospective victim may or may not submit to the counterpart's status claim (Luckenbill, 1977). These risk factors concerning character contests and aggression are all present in the current analysis. Specifically, the bus setting of the ticket fining event is a populated public place, where an audience witnesses the interaction. In this setting, our scope of interest is how the actions of the employee may shape the risk of victimization, and as part of this analysis, we take the influence of the passenger's age and gender into account.

A main reason why few studies have examined the situational features of work-life victimizations it that it is methodologically challenging to study real-life, mid-event aggressions. This relates to the circumstance that the standard social scientific methods—including self-reported accounts (interviews, surveys) and ethnographic observations—rarely capture the sequential micro-details of how aggressive interactions actually unfold (Jerolmack & Khan, 2014; Morrison, Lee, Gruenewald, & Mair, 2016).

As such, we follow the recent methodological recommendation to examine on-going aggressive encounters using on-site video recorded data (Collins, 2008; Lindegaard & Bernasco, 2018; Philpot, Liebst, Møller, Lindegaard, & Levine, 2019).

Specifically, we draw on a sample of 123 clips recorded by occupational body-worn cameras. Body-worn camera footage is unique because it both captures the physical and verbal communications of the events, and the current study is one of the first to utilize this video technology to study interpersonal aggression. Adding to this, video data allows—because the clips can be slowed down to frame-by-frame instances and observed repeatedly—for a very fine-grained and reliable behavioral coding of participant interaction (Philpot, Liebst, Møller, Lindegaard, & Levine, 2019).

Utilizing the methodological benefits of video data, we developed an "ethogram" or behavioral inventory of the context-specific inspector and passenger behaviors performed during the fining encounters. This approach, which is inspired by animal ethology and subsequently adopted by human ethologists (Eibl-Eibesfeldt, 1989; Jones et al., 2016), recommends that scholars initially conduct systematic naturalistic observations of the behaviors of interest, and then develop an inventory that is used for quantification. The high resolution of this coding enables a micro-detailed analysis of the action-sequences in ticket fining events associated with aggressive and non-aggressive outcomes. As such, the current analysis offers unique insights into the situational processes shaping occupational victimizations. This information may be used to improve existing conflict training programs for transport ticket inspectors and a wider range of other public employees.

We outline our empirical expectations, which are based on the character contest theory. Given that the fining encounters between the ticket inspectors and the

passengers take place face-to-face, these interactions contain both verbal and physical actions (see Goffman, 1967). Following this verbal-physical distinction, we first expect that verbal "authority actions" by which an inspector voices his or her authority to the passenger are positively associated with passenger aggression (Hypothesis 1). We further expect that physically dominating inspector actions are positively associated with passenger aggression (Hypothesis 2). Finally, we expect that accommodating actions—by which the inspector attempts to help the passenger save face—are negatively associated with passenger aggression (Hypothesis 3).

Methods

Data[1] was a sample of body-worn camera footage, recorded by 19 ticket inspectors during ticket patrols of public buses, in the center and suburbs of Copenhagen, Denmark, 2018. All body-worn cameras were carried as a security precaution, enabling the ticket inspectors to document victimizations for criminal proceedings. In order to familiarize with the work tasks and the occupational experiences of the ticket inspectors prior to data collection, the first and last author attended three staff meetings and conducted on-site participant observations of several bus patrols. Furthermore, the first author conducted a short survey with the inspectors that evaluated which passenger actions were perceived as most offensive.

During the on-site participant observations, the first and last authors accompanied a total of five teams of ticket inspectors for approximately three hours each.

[1] Note that the current study is approved by The Danish Data Protection Agency (ref. 2015-57-0125), and that part of the current data were presented in a non-scholarly rapport in Danish (Friis, Liebst, Philpot, & Lindegaard, 2018).

These observations provided important insights into the behaviors exhibited during ticket inspections, which informed the development of the subsequent coding procedure. Moreover, the time spent with the ticket inspectors enabled the research team to build up a level of trust and rapport with the employees. This period played a crucial role in allaying the confidentiality concerns of the employees, many of whom were initially reluctant to record videos for the current project due to fear that their managers may watch the recordings. This highlights a potential sample bias in the current data, while illustrating a wider discussion on sample biases for video data that is not collected directly by researchers (Lindegaard & Bernasco, 2018).

For the current study, inspectors were instructed to switch on their cameras whenever they encountered a bus passenger that did not have a valid ticket. On a monthly basis, the first author visited the ticket inspectors at work and reminded them to record incidents for the project. This also provided an opportunity to discuss potential concerns or experiences. We obtained 374 recorded situations, typically containing one but sometimes several ticket fining events. The duration of the clips varied from less than one minute to approximately one hour and a half. Some ticket fining events were captured simultaneously by multiple body-worn cameras.

We selected videos that conformed to the following inclusion criteria: (1) Clips containing a ticket fining event. (2) Clips of a technical quality (e.g., camera angle, resolution, audio) that allowed for a micro-behavioral coding of interactions. (3) Clips capturing the duration of the inspector-passenger encounter, with none or only negligible breaks (see Nassauer & Legewie, 2018). The final sample comprised of 123 ticket fining events, involving a face-to-face interaction between at least one inspector and one passenger without a valid ticket.

Coding procedure

Coding began by identifying all events across the video-recorded situations in which an inspector makes the decision to issue a fine to a passenger. If a situation contained more than one ticket fining event, we only coded the first occurrence to ensure independence of observations. Next, all selected data was coded by the first author in accordance with a detailed codebook of variable definitions (see online Supplementary Materials, Table S1 at tinyurl.com/TicketInsp). The behavioral inventory of the codebook was derived from the preliminary fieldwork with the ticket inspectors, in-depth qualitative assessments of a subset of data (Lorenz, 1973), prior research (Gacki-Smith et al., 2009; Lindegaard, de Vries, & Bernasco, 2018), and from theoretical assumptions (Hall, Coats, & LeBeau, 2005; Kemper, 2011). Data was coded using BORIS, an open source software for video-based behavioral coding.

Data was coded on a situational level, recording the presence or absence of inspector and passenger actions. Given our interest in explaining passenger responses to inspector behavior, we only recorded the inspector acts occurring prior to the first passenger aggression. In cases with no offensive passenger behavior, the inspector acts were coded as present or absent across the situation. One challenge was to determine whether acts should be treated as non-occurring or missing in videos where the beginning of the interaction sequence was not captured. For each behavioral code, we decided whether the absence of the given act could be inferred from subsequent available interaction segment (see Stephens, 2011). For example, calling the police was coded as absent in non-aggressive cases where the beginning had not been captured.

Measures

We included the following variables in the statistical analysis. Our dependent variable, *Passenger aggression* distinguishes whether a passenger performs at least one aggressive behavior towards a ticket inspector. To encompass all offensive passenger acts that may be deemed normatively "deviant" (see Alexandrova & Haybron, 2016), from the lowest to the highest level, we apply a broad definition of aggression. This definition comprises of both verbal and physical offensive acts. Verbal passenger acts include dictating the situation; swearing at the inspector; yelling or raising one's voice; indirect threats (e.g., "give me your name"); direct threats (e.g., "this will have consequences"). Non-verbal, physical passenger acts include threating gestures (e.g., face pointing); forceful body displays; pushing past or through; face-to-face personal space encroachment; touching of inspector (e.g., poking), photographing/filming the inspector[2]; and harmful/violent acts.

We include four binary independent variables, capturing different inspector actions. *Accommodation* encompasses inspector acts that show sympathy with the passenger (e.g., "I know this is frustrating") or that displace the responsibility away from the ongoing encounter (e.g., "you can complain to the bus company," "I'm just doing my job"). *Authority* acts are those by which the inspector shows assertiveness towards the passenger, directly places the responsibility on the passenger, or mentions or calls the police. *Physical dominance* encompasses acts by which an inspector confines the space of the passenger by physically blocking the movements of the passenger, by holding onto the passenger, or by announcing to the bus driver that the bus should stop

[2] This action was included because the inspectors themselves indicated that being filmed by a passenger was as uncomfortable as being hit or spat on.

or that the doors should remain closed (i.e., to prevent the passenger from leaving). Finally, to account for omitted-variable bias, we include two model controls that measure the individual characteristics of the passenger. *Gender* is a binary variable with woman as the reference category. *Age* is a binary variable, distinguishing whether the passenger is 16 years or older or 15 years or younger (reference category). The age of the passenger was informed by the inspector's assessment of personal identification of the passenger.

Estimation

Data was estimated with a logistic regression model, using Stata 15's "logit" module. One issue in specifying this model is that the data has a hierarchical structure, given that the fining event cases are nested within the inspectors. Such data clustering may violate the regression assumption of independency of observations, thus likely resulting in deflated *p*-values and an increased false-positive error rate. To account for this, we specified our logit model with cluster-corrected standard errors (Cameron & Miller, 2015).

In evaluating our regression model, we present the estimated results with both traditional *p*-values and Bayes factors (Wagenmakers, 2007). This reflects the circumstance that Bayes factors tend to yield a lower rate of false-positives than *p*-values (García & Puga, 2018), and allow for the assessment of evidence in favor of non-associations (Dienes, 2014). Further, we perform a sensitivity analysis to evaluate how robust or fragile the estimated results are across a range of other plausible data and model specifications (Steegen, Tuerlinckx, Gelman, & Vanpaemel, 2016). As Leamer (1985, p. 308) highlights, a "fragile inference is not worth taking seriously," and the sensitivity

analysis allows us to establish the extent to which our conclusions hinge on partially arbitrary specification choices.

Findings

Characteristics of the ticket fining events

When riding on a public bus in Denmark without a valid ticket, passengers risk a substantial fine of 750 Danish Kroner (approximately 100 Euros). Around 90,000 people per year receive a fine when riding on a bus in the center and suburbs of Copenhagen.[3] In our data, 63 percent of passengers without a valid ticket are men, and 95 percent are assessed to be 16 years or older.

Ticket inspectors are evaluated by their managers based on the number of fines they issue, which creates an incentive to issue fines. The ticket inspectors work shifts of seven and a half hours, usually in teams of two. During a shift, each inspector issues on average eight fines. Inspectors usually start the inspection from each end of the bus, one in the front and one at the back. Upon entrance, they register the start time of the bus inspection, and typically announce their arrival to the passengers by saying out loud "ticket inspection." They approach each passenger by asking "may I see your ticket?" Passengers have different ticket options: a subscription that offers unlimited travel; a travel card that one can charge up beforehand and scan upon entering the bus; an electronic ticket that one can buy via their cell phone before entering the bus; and a traditional paper ticket purchased from the bus driver when entering the bus.

[3] These figures have been provided from the traffic company that operates the public busses in Copenhagen and surrounding suburbs.

In our sample, the majority (67 percent) of fines were issued to passengers who just could not provide a valid ticket upon inspection. This was also the most typical scenario in the aggressive events (75 percent), where the second (and only) other reason for issuing a fine was when the passenger had bought an electronic ticket too late (25 percent). Typically, a passenger would buy the electronic ticket the moment that the inspector entered the bus, which made it invalid according to the rules stipulating that the ticket must be purchased before travel. In the eyes of the passenger, however, being fined for such a ticket was often perceived as unfair, because they had paid for the ticket, albeit too late. As a consequence, electronic tickets provided the opportunity for passengers to negotiate the ambiguity of the rules and the fairness of the issued fine—as sequential steps towards escalation of the unfolding character contest.

Inspector-passenger interactions lasting more than four minutes—typically because of a negotiation prolonging the event—were associated with a higher victimization risk of the inspectors, $r_s(94) = 0.53$, $p < .001$ (also see Supplementary Materials, Table S2 at tinyurl.com/TicketInsp). On average, non-aggressive fining events took two and a half minutes (M = 2.3, SD = 1.3), whereas the aggressive encounters lasted close to eight minutes (M = 7.5, SD = 7.1). The below example (case 1) illustrates a fining event with character contest and with space for negotiating the rules. Note that the quantitative action codes applied are highlighted in the text.

CASE 1:

A passenger sits at a window seat at the back of the bus and shows his phone with the electronic ticket to the inspector. The inspector checks the registered arrival time on her device after reviewing the ticket.

Passenger: “I just got onboard.”

The inspector consults her colleague regarding the ticket purchase time.

Colleague: “It is bought much later **#ticket bought too late#**. It is a whole minute after.”

Passenger: “I just got onboard.”

The passenger then further explains why he did not buy it earlier.

Inspector: “The problem is that you bought it a whole minute after I entered the bus, as far as I can see. You can tell by looking at your time and my time.” *The inspector shows the passenger the time difference on her device.*

Passenger: “The ticket just took a moment to register on the phone.”

He holds the phone up towards her.

Inspector: “You cannot enter the bus without first receiving it [the electronic ticket].

Passenger: “I pressed and accepted right when I entered the bus, so…”

Inspector: “Yes, but it says unfortunately **#accommodation#**… Do you have some ID?”

Passenger: “For what reason?”

Inspector: “Because the ticket was bought after my arrival.”

Passenger: [Sighs] “I haven’t, because I entered when I pressed… [Smiling disarmingly]”

Inspector: “No, the only thing I can see is that the system says that you have **#accommodation#**. I am sorry **#accommodation#**.” *Once again she tells him the time difference.*

Passenger: “It is like five seconds, right?”

Inspector: “One minute.”

Passenger: “Well. Okay.” *He then says irritated.*

Inspector: “Do you have some ID I can borrow?”

Passenger: “I think this is stupid” *the passenger says while finding some ID for the inspector, now accepting that he is being issued a fine.*

Inspector actions

After the ticket inspectors board the bus and announce their entrance, they approach passengers individually asking to see their ticket. When the ticket is invalid, the inspector typically declares that “your ticket is invalid,” or similar to the case above that “your ticket is bought too late.” The actions of the inspectors following these announcements varied. In 46 percent of the fining events, ticket inspectors reacted with accommodating actions like showing sympathy by saying “I understand it is frustrating” or suggesting that the passenger contact the bus company for complaints—all attempts to find common ground and save face of the passenger in the fining event. In 22 percent of the incidents, ticket inspectors reacted with authority actions such as communicating with decisiveness, mentioning the police, or emphasizing the passenger’s responsibility with statements such as “you know this ticket is no longer valid”. In 19 percent of the fining events, the inspector acted physically dominating by confining the passenger’s space, blocking their movements, or by holding on to them. Both authority and physical actions are ways for the inspector to defend the authority and respect in the contested situation. Note that the inspectors in many cases employed more than just one of the actions.

Passenger responses

Of the 123 fining events analyzed, 13 percent turned into aggressive character contests. The aggressive responses of passengers varied in intensity over the course of the event. In 38 percent of the aggressive fining events, the first aggressive response of the passenger was to speak to the inspector in a dictating way or to curse at them. In 31 percent of the aggressive fining events, passengers raised their voice or yelled at the inspector. In 31 percent of the aggressive fining events, the passenger touched the inspector, tried to film them with their cell phone, or tried to avoid the inspectors by pushing their way through. In two aggressive fining events, these passenger responses escalated to physical violence against the inspector. In one case the passenger hit and kicked several inspectors and in another case the passenger pushed a single inspector hard on the upper body.

Associations between inspector actions and passenger responses

The way that the ticket inspectors communicated to the passenger that the ticket was invalid, significantly predicted the risk of aggressive passenger responses. Table 1 presents our estimated logistic results. As expected, we find that authority inspector actions are statistically positively associated with passenger aggression at a 5-percent level of significance (Hypothesis 1). The estimated odds ratio suggests that passenger aggression is approximately seven times more likely in cases where authority actions are used, although the wide confidence interval indicates that the magnitude of this effect could range from small to very large. However, the related Bayes factor suggests that authority actions are only 2.6 times more likely to be associated with the aggressive

outcome than non-associated—this should be considered weak evidence in favor of the estimated association (Wagenmakers et al., 2017).

Table 1. Results of logistic regression predicting passenger aggression.

Variables	OR	*p*	95% CI	BF_{10}
Authority	6.32	.003	[1.91, 20.93]	2.56
Physical dominance	7.54	.016	[1.45, 39.24]	7.42
Accommodation	0.14	.033	[0.02, 0.86]	4.51
Male passenger	1.96	.349	[0.48, 8.08]	0.14

Note. N = 123 events nested across 19 ticket inspectors (Min = 1; Max = 13; Average = 6.5). OR = Odds ratio. CI = Confidence interval. BF_{10} = Bayes factor of H_1 over H_0. Passenger age was omitted from the model because of complete separation.

Next, we find the expected positive association between physical dominance actions and passenger aggression (Hypothesis 2), with the Bayes factor offering substantial support for this relationship. The odds ratio suggests that passenger aggression is approximately eight times more likely in cases where physical dominance is used, although the width of confidence interval leaves the magnitude of the effect uncertain. The positive associations between authority and physical dominance and the passenger aggressive outcome are illustrated in case 2.

CASE 2:

Two inspectors are standing in the middle section of the bus when new passengers enter. A man who is speaking on his phone enters a door towards the rear of the bus. The passenger appears to briefly turn and glance before walking hastily towards the front of the bus, briskly passing one of the inspectors.

Inspector: “Hello, we need to have a look at your ticket.”

The passenger removes the phone from his ear.

Inspector: “Ticket inspection.”

Passenger: “I need to get out, I am on the wrong bus.”

Inspector: “I still need to see your ticket.”

Passenger: “This is not my bus.”

Inspector: “That does not matter. You are on a bus. Therefore you need to have a ticket.”

Passenger: “I am on the phone. I cannot see what bus number it is [referring to the route].”

Inspector: “Can you keep the back doors closed **#physical dominance#**?”

The inspector asks his colleague.

The passenger now starts walking to the front of the bus and the inspector follows.

Inspector: “I need to see your ticket.”

The passenger turns around looking at the inspector.

Passenger: “Why do I need to show it? I did not see the number [of the bus].” *The passenger walks further to the front of the bus.*

Inspector: “Can you please keep the front doors closed **#physical dominance#**?” *The inspector now loudly asks the bus driver.*

The passenger again turns his head to look at the inspector with a firm look. He now repeats that he is not on the correct bus and that he was on the phone.

Inspector: “You still entered the bus. Do you have something with your name on it that I can see?”

The passenger then looks away, not wanting to respond to the question and then looks again at the inspector with reproach.

Inspector: “Listen, I do not want to discuss it” **#authority#**

Passenger: “What can I do about that?”

The passenger now moves towards the inspector, who remains fixed **#physical dominance#**. *The passenger attempts to push his way through* **#aggression#**. *He is unsuccessful and accepts the fine.*

Returning to the statistical model, we further find that accommodation actions are negatively associated with passenger aggression (Hypothesis 3), with a Bayes factor offering substantial support in favor of this association. The odds ratio has a large magnitude, suggesting that the display of the accommodating action makes the risk of passenger aggression approximately seven times smaller (inversed: 1/0.22 = 7.14). The negative association between accommodation and aggression is illustrated by case 3:

CASE 3:

A male passenger enters the bus and walks to the door in the middle of the bus. The inspector, who has been sitting at the back of the bus, approaches the new passenger, while his colleague walks to the front of the bus.

Inspector: “Hi.”

Passenger: “Hey. Two seconds, I just have to scan [his travel card].”

Inspector: “Oh. You should have scanned it when you entered. Can I just see your…” *Inspector checks another man’s ticket while interacting with the passenger.*

Passenger: “I haven’t... I wanted to enter here [pointing at the middle door of the bus]. I could tell that it was only that door [pointing towards the front door of the bus] that opened.”

Inspector: “Well, I saw you come in [pointing towards the front door]. You were able to scan your card when you entered. You stood here, you waited, you saw us” **#authority#**

The passenger now refers to another ticket that he has on his phone.

Inspector: “Yes, but you could have scanned it when you entered. It was only when you noticed my colleague who passed you” #**authority**#

Passenger: “Usually I enter from … [points again at middle door]”

Inspector: “Sorry, I cannot accept it. Sorry **#accommodation#**. Do you have anything with your name on it?”

Passenger: “Really?” *He asks while grabbing his beanie hat and looking wronged.*

Inspector: “Yes, unfortunately **#accommodation#**. You have to scan it when you enter the bus. You should not do it afterward.”

Passenger: “No, no, but [the passenger points to the floor in the middle of bus] it is only one stop.”

Inspector: “I know, I know. But I have to follow the rules, right? **#accommodation#** I have to follow the rules.”

The inspector repeats the reasons for the decision and the passenger accepts the fine.

For the sensitivity analysis, we report the average *p*-value for each of the main predictors across 45 alternative model and data specifications. In the confirmatory model, we found that authority actions were a significant predictor of passenger aggression ($p = .003$). The average *p*-value across the alternative specifications was non-significant, however ($\overline{p} = .057$). The association between authority actions and passenger aggression should thus be considered fragile, in line with weak Bayes factor evidence regarding this estimate ($BF_{10} = 2.56$). Further, physical dominance actions have an average *p*-value of .017, which further evidences that this predictor is robustly associated with passenger aggression. Finally, with an average *p*-value of .045, accommodating actions remain significantly negatively associated with the likelihood of passenger aggression.

Finally, regarding the included control variables, we first find that the gender of the passengers is not associated with the aggression outcome. In fact, the Bayes factor offers substantial evidence in favor that these variables are non-associated. By contrast, the model suggests that passenger age is associated with aggression, given that this predictor is perfectly related with the outcome and thus is omitted from the model—a technical feature of logistic regression known as complete separation (Menard, 2010). This finding raises the question of whether our model is misspecified with respect to similar person-specific properties of the inspectors (e.g., age, gender, level of experience) that may correlate with the aggression outcome. One way to assess this potential issue is to calculate an intraclass correlation coefficient (ICC) for data,

capturing the extent to which the aggression outcome concentrates around specific inspectors. Such concentration could indicate that some unmeasured properties of the inspectors shapes the aggression risk. The ICC was however only 1 percent, indicating that the aggression events are almost equally distributed across the inspectors. This offers further support for the situational approach applied in the analysis.

Discussion

In the current study, we utilized body-worn camera footage recorded by bus ticket inspectors to examine the situational risk factors associated with passenger aggression in ticket fining events. With a logistic regression model, we examined how the actions of ticket inspectors may shape their victimization risk. With regards to Hypothesis 1, the analysis indicated that authority actions are positively associated with passenger aggression. The association is statistically fragile, however, and should therefore be interpreted with caution. In confirmation of Hypothesis 2, physically dominating actions were positively and robustly associated with aggressive responses. Finally, in line with Hypothesis 3, we found that the accommodation actions of ticket inspectors were negatively and overall robustly related with the passenger aggressive outcome.

Research implications

These findings suggest that *how* inspectors interact with passengers shape their risk of being victims of aggression. In the framework of character contest, the inspector's usage of authority or physical dominance acts will challenge the passenger's self-legitimacy, and thus escalate the interaction into aggression. In most cases, however, we find that the inspector and passenger are likely to reach a common definition of

the situation (Suquet, 2010), thus terminating the negotiation without escalation. In encounters where the character contest persists, the inspector may attempt to protect the passenger from losing face, thus minimizing the risk that the passenger escalates the situation (Ting-Toomey, 2015). That is, besides "a defensive orientation toward saving his own face" persons may adopt "a protective orientation toward saving the others' face" (Goffman, 1967, p. 14). Here, the negative association between accommodation actions and passenger aggression suggests that expressions of sympathy for the unfortunate or shameful situation of others (Clark, 1997) may be another strategy that allows ticket inspectors to help a passenger save face and eventually avoid aggression.

In the context of public buses in Copenhagen, electronic tickets bought too late on cell phones were a common reason for issued fines. This type of ticket purchase is ambiguous, because it allowed for negotiations by passengers who questioned the time of the purchase, and thus may complicate the process of finding common definition of situation. For all the ticket fining events, we also found that the duration of the fining event was positively associated with inspector victimization.

Prevention

Our findings are relevant for aggression prevention measures of ticket inspectors and potentially of employees in public functions in general. In order to prevent passenger aggression, ticket inspectors should be trained in avoiding using physically dominating actions, and could use accommodating actions as a placatory alternative in encounters with passengers. Our analysis further highlights the importance of understanding risks as related to the behavioral actions within the situation, rather than to per-

sonal properties or wider organizational circumstances. This is in line with micro-sociological studies of violence and conflict, emphasizing that situational dynamics play a key role in shaping the course of interpersonal aggression (Collins, 2008; van Reemst, 2016). Stressing the relevance of a situational interpretation of the passenger encounters, we further found that the aggressive events did not show a tendency to concentrate around specific inspectors. Adding to this, male passengers were not found to be more likely to act aggressively against the inspectors; a result in line with Deibert and Miethe (2003) finding that character contests are equally common across gender and age groups. Taken together, these findings indicate that the aggressive escalation of the events relate to situational dynamics that unfold, at least partially, uncoupled from who the partaking inspectors and passenger aggressors are.

The unique approach of analyzing body-worn camera recordings of inspector-passenger encounters extends previous work by detailing how specific *kinds* of behavioral actions may influence interpersonal aggression. Behavioral aggression analyses with this level of micro-detail are rare in the literature, which tends to rely on retrospective victim and offer accounts. Such self-reports are known for biases related to memory failure and social desirability issues and for providing a coarse-grained picture of the actions that unfolded or their sequential order within criminal events (Jerolmack & Khan, 2014; Vrij, Hope, & Fisher, 2014).

Our analysis of encounters between inspectors and passengers provides detailed insights into patterns of behavioral actions in *both* aggressive and non-aggressive encounters. This approach is uncommon for aggression studies relying on video-data and studies examining dispute-related violence, which tend to be sampled on the

dependent variable (e.g., cases of violent aggression). Without comparisons to non-violent cases, the analysis would have yielded limited explanatory insights into how the victim actions influence the subsequent offender responses (Geddes, 1990). Our findings—based on the statistical comparison of fining events with different aggression outcomes—confirmed the relevance of victim behavioral actions for the risk of aggressive offender responses, as suggested by previous studies of violence (Baumeister, 1997; Block, 1981; Katz, 1988; Liebst, Lindegaard, & Bernasco, 2019).

Further, the low severity of aggression in our sample adds to violence studies by examining an event type, which is less severe than the ones typically investigated in this field, e.g. police reported homicides (Luckenbill, 1977) or assaults (Deibert & Miethe, 2003). This comparative case sheds light on the micro-interactional steps by which face-to-face conflicts develop towards increased escalation, a process which, despite wide scholarly interest, remains largely unexamined (Levine, Taylor, & Best, 2011).

Limitations

To this point it should be added, however, that the proportion of low severity cases may be overrepresented in our sample. During our preliminary fieldwork, we encountered that some inspectors were unwilling to record potentially incriminating incidents (e.g., violent ones), or forgot to turn on their cameras. As such, it should be recognized that the current data and results may be biased towards low severity cases that do not turn violently. To address this limitation, future video-based studies could sample 24-hour recordings of inspector-passenger encounters, rather than relying on a selection of recordings made by inspectors (Lindegaard & Bernasco, 2018).

Another study limitation concerns the extent to which we managed to capture the actual sequential steps of the inspector-passenger interaction and our ability to claim that inspector action may impact passenger responses in a causal manner. Specifically, the inspector actions may be associated with unmeasured "cues" signaling that the passenger is about to behave aggressively (e.g. via dominance cues, see Hall et al., 2005). For example, it is plausible that the inspectors acted physically dominating because they expected the passenger to act aggressively if taking an alternative position. One study of violence, based on offender interviews, suggests that expectations of the other's response may influence behavioral actions in violent encounters (Lindegaard, Bernasco, & Jacques, 2015). While such unmeasured cues might shed light on the reasons for inspector behavioral actions, such insights, however, would not change our conclusions that certain inspector actions are correlated with particular passenger responses.

We recommend more video-based research focusing on understanding the situations in which work-related violence occurs. Future video-based research on workplace victimization should prioritize triangulation of data sources (e.g. interviews, surveys, police cases), allowing assessment of the relative and combined influences of situational and personal factors (see Fleeson, Noftle, & Compass, 2008). Such triangulation of data sources would also mitigate a further limitation of the current study, namely that we only to a very limited extent include person-specific factors, such as dispositional aggressiveness and past experiences of using violence (Davidson, Putnam, & Larson, 2000; Swann & Jetten, 2017; Wieviorka, 2014).

Policy implications

Our findings highlight the importance of developing situational intervention measures for the prevention workplace aggression. As electronic tickets bought too late leave space for negotiation, we recommend that greater information is available to the passengers regarding the necessity of purchasing an electronic ticket before entering the bus. Another preventive strategy would be to install an app on the electronic device used by inspectors that warns them when a ticket fining event exceeds beyond several minutes. In our data, aggressive events are concentrated beyond a time-threshold of four minutes, and a warning would offer the inspectors a simple and cost-efficient means to known when to withdraw from the encounter or to be more cautious about their behavioral actions.

Our findings highlight the responsibility carried by employers to prepare their employees for the job. If workplace aggressions, as the current results indicate, may be prevented through certain behavioral actions of the employees, this could inform the formal instruction and training of ticket inspectors. In particular, it is advisable that efforts are taken to avoid the use of physically dominating actions during passenger encounters—an action strategy that our analysis highlights as particularly robustly associated with victimization. Finally, it may be considered whether our findings apply to other law enforcement agents, such as police officers, correctional officers, and bouncers, and perhaps other types of employees in public functions, such as teachers and nurses, who also face conflictual citizen encounters in their work life. Future studies should examine and compare the outcome of action strategies across diverse employee functions, with the aim of developing employee specific behavioral intervention measures for the prevention of workplace aggressions.

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