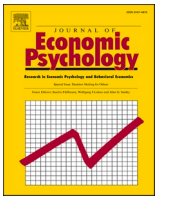
Journal of Economic Psychology 101 (2024) 102703

Contents lists available at ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep



The presence of laws and mandates is associated with increased social norm enforcement☆

Laetitia B. Mulder [a,*], Tim Kurz [b], Annayah M.B. Prosser [c], Miguel A. Fonseca [d,e]

[a] Department of Human Resource Management and Organizational Behaviour, University of Groningen, the Netherlands
[b] School of Psychological Science, University of Western Australia, Australia
[c] Department of Psychology, University of Bath, UK
[d] Economics Department, University of Exeter Business School, UK
[e] NIPE, Universidade do Minho, Portugal

ARTICLE INFO

Keywords:
Mandates
Laws
Social norm enforcement
Social confrontation
Informal sanctions
Peer-sanctioning

ABSTRACT

Policy makers often implement laws or mandates to attempt to change people's behavior. Such policies act not only as deterrents, but also as societal signposts for what is considered morally right and wrong within a society. In this paper we argue that the presence of laws and mandates may be associated with citizens' inclination to engage in social norm enforcement within their own network. We studied this using four different datasets in different settings (text-and-drive laws, influenza vaccination mandates, speed limit laws, and COVID-19 mask mandates), in three different countries (total N = 3,156). In all datasets, we found associations between mandates or laws and the inclination to socially confront norm violators. This is in line with our theorizing that mandates and laws may help to increase citizens' inclination to engage in social norm enforcement, and to foster interpersonal policing of behavior, inviting future research to establish more direct causal conclusions in this regard.

1. The presence of laws and mandates is associated with increased social norm enforcement

When attempting to change people's behavior, policy makers often choose to impose 'hard' measures in the form of mandates or laws that are enforceable via financial punishments (e.g., fines) or legal consequences (e.g., incarceration, or dismissal). Mandates and laws are predicated on the assumption that the existence of a sufficiently strict punishment will deter people from misbehaving (Becker, 1968). Such an assumption is well supported by a wealth of empirical evidence suggesting that punishments can indeed reduce the prevalence of undesired behavior (Klick & Tabarrok, 2010). However, such approaches are based on coercive power, which is less appreciated than legitimate power (Hofmann et al., 2022). As such, punishment approaches are often politically unpopular (Bubb & Pildes, 2013) as they may evoke negative emotional reactions resulting in conflicts through negative reciprocity (Eckel et al., 2022). Moreover, the ability for punishments to deter, or to reduce recidivism, via processes of operant conditioning (Skinner, 1945; Thorndike, 1913) seems dependent on the practical and financial viability of an authority to successfully police behavior and mete out punishments for those who violate the imposed rules. However, policy makers who assume that the success of mandates and laws

☆ **Data statement.** The datasets and codes used to perform analyses, as well as supplementary material, are available at https://osf.io/ky7g9/?view_only=0f751ac1267c4f3d802edac955e5310d.

* Corresponding author at: Faculty of Business and Economics, University of Groningen, P.O. Box 800, 9700 AV Groningen, The Netherlands.
E-mail address: l.b.mulder@rug.nl (L.B. Mulder).

https://doi.org/10.1016/j.joep.2024.102703
Received 25 March 2022; Received in revised form 14 September 2023; Accepted 6 February 2024
Available online 9 February 2024
0167-4870/© 2024 The Author(s). Published by Elsevier B.V. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

depends solely on the viability of surveillance may be mistaken. In fact, the mere implementation of a law or mandate may have important psychological effects. They may signal to people what is considered right and wrong (Cooter, 1998; Funk, 2007; McAdams, 2000; Mulder, 2008), which may contribute to more interpersonally-induced mechanisms of behavioral change, such as social norm enforcement between citizens.

We refer to social norm enforcement as any type of verbal communication towards a person that shows disapproval of this person's behavior. It is a process that occurs *between* citizens, outside of the realm of policy makers, that may induce behavioral change. A range of literature has begun to demonstrate the potentially powerful effects on individuals' behavior when peers express disapproval of their actions. This has been shown in the context of social dilemmas (Masclet et al., 2003; Nelissen & Mulder, 2013; Simpson et al., 2017), and also in the domain of prejudices or stereotyping behavior (Baumert et al., 2020; Czopp et al., 2006; Czopp & Monteith, 2003). Thus, there appears to be great potential for people's behavior to be influenced by social confrontation of their actions by their peers.

Social norm enforcement may occur in any domain where a relatively clear social norm is present, with or without the presence of a law or mandate. For example, people have been shown to confront a person who litters or breaks the "stand right, walk left" rule in public transport (Balafoutas et al., 2016; Balafoutas & Nikiforakis, 2012; Berger & Hevenstone, 2016; Winter & Zhang, 2018; Wolbring et al., 2013) a person who breaks the silence norms in trains (Przepiorka & Berger, 2016), or a person making sexually harassing comments (Goodwin et al., 2020). However, the percentage of people who actually engage in such social norm enforcement is often small, albeit strongly dependent on the specific context. To illustrate, observed percentages of people confronting are 4 %-10 % in response to littering (Balafoutas et al., 2016; Balafoutas & Nikiforakis, 2012; Berger & Hevenstone, 2016; Winter & Zhang, 2018), 19 % in response to standing left on the escalator (Balafoutas & Nikiforakis, 2012), 20 % in response to a sexually harassing comment (Goodwin et al., 2020) and 50 % in response to breaking the silence norm in trains (Przepiorka & Berger, 2016).

What typically inhibits people from engaging in social norm enforcement is the perceived interpersonal costs of doing so (Eliezer & Major, 2012; Kaiser & Miller, 2001; Shelton & Stewart, 2004; Swim & Hyers, 1999; Szekeres et al., 2019). Indeed, people who expose a wrong can often expect others to react negatively. Thus, fear of retaliation may restrain a person from social norm enforcement. For example, Balafoutas and Nikiforakis (2012) demonstrated that the reason why the majority of people abstain from social norm enforcement is that they are concerned about the resulting tensions between them and the norm violator.

It has been suggested that the social costs of socially confronting others about their conduct are particularly high if there is ambivalence with regard to the norms surrounding the issue in question (Sabini & Silver, 1978; Steentjes et al., 2017). This is precisely where, we argue, the role of the policymaker becomes potentially relevant to the promotion of norm enforcement within social networks in a society. By installing a law or mandate, policymakers decrease ambivalence about what is generally considered morally right and wrong (McAdams, 2000). It thereby highlights and clarifies existing societally shared moral norms within a behavioral domain through the publicizing of a punishment for defectors (Mulder, 2008, 2018). This may facilitate social norm enforcement (Galdi et al., 2017) in two ways. First, laws and mandates provide institutional support for the individual who engages in social norm enforcement by making the social-interactional act of confrontation more legitimate, and thus less complex and awkward. Hence, laws and mandates reduce the expected social cost of confrontation. Knowing that there is a law or mandate to back up the socially confrontational act increases the chances that the confrontation will be accepted by the confronted person and/or bystanders. Second, by clarifying socially shared norms, laws or mandates may contribute to the disapproval that citizens feel toward the forbidden behavior, and thus contribute to one's own perception of the forbidden behavior as immoral (Feldman & Perez, 2009). Subsequently, as research on people's inclination to speak up against prejudice and sexual harassment has shown (Goodwin et al., 2020; Szekeres et al., 2019), such moral concerns can motivate people to speak up. In other words, laws and mandates can contribute to the strength of one's own moralization of the issue, which motivates an individual to confront rule breakers (Steentjes et al., 2017).

We therefore argue that the presence of laws or mandates may increase people's inclination to engage in the enforcement of existing social norms. If it is indeed the case that such policies contribute to social norm enforcement, then this has the potential to amplify the economic viability of such policies. As mentioned above, there are often practical and/or financial constraints that can hinder the achievement of high rates of enforcement of punishments. For example, with new laws around not texting whilst driving, the rate at which those who continue to text and drive are caught and punished by traffic officers is likely to be fairly low (Rudisill et al., 2019). If the mere existence and communication of the law does lead to a greater level of *interpersonal 'policing'* of behavior within social networks via social norm enforcement, then this would represent an important consideration when attempting to model the cost-effectiveness and political palatability of the implementation of such measures.

We hypothesized that the presence of a policy that mandates a particular behavior will be associated with an increased likelihood that those in the affected community will engage in social norm enforcement in the sense that they confront other community members who violate a norm. We tested this hypothesis across four field settings with regard to different mandates: 1) US state bans on texting and driving, 2) a mandate being either present or absent for influenza vaccination among US and UK health care personnel, 3) the implementation of a law reducing the road speed limit in the Netherlands, and 4) the implementation of a mask-wearing mandate during the COVID-19 crisis in the UK. We studied the relationship between mandates and social confrontation in a variety of different ways across our four datasets. With text-and-drive laws, the bans were implemented at different periods in time and we tested whether tenure of the state ban predicted social norm enforcement intention towards a person who texted while driving. For health care worker flu vaccination, we tested whether the intention to engage in social norm enforcement depended on whether or not vaccination was compulsory in the organization where health care practitioners were employed. With Dutch speed limit reduction and UK mask-wearing, we longitudinally tested whether social norm enforcement had increased since the law reducing the speed limit or mandating masks had been implemented. These datasets did not allow for analyzing causal effects. However, we did control for various other variables that could explain the relation between mandates and social norm enforcement. Results from all four datasets show support for our hypothesis that individuals are more likely to confront norm violators when a behavioral directive has institutional

support, be it from a government (text-and-driving, mask wearing, speed limits) or an organization (vaccination). We outline below the methods and results for each dataset in more detail.

2. Dataset 1

2.1. Method

Through Amazon Mechanical Turk, 1,015 participants (49 % male, $M_{age} = 38$, $SD_{age} = 11.9$, from 49 different US states) were recruited in the summer of 2017. Participants were recruited to take part in a dice game that was part of Study 3 presented in Mulder et al. (2020), in which the survey questions about texting and driving were added as an unrelated study. Of these respondents, 874 filled in all questions that were needed for our main analysis. This n was large enough to detect a small effect ($f^2 = 0.02$) with a power of 0.99 (based on G*power 3.1, *F*-test). No data exclusions were made. Respondents were asked several demographic questions (state of residence, employment, education, income, and political preference), and some questions about texting and driving. Social norm enforcement was measured with two items: *If people tell me that they sometimes text while they drive, I tell them off* and *If I am in a car and the driver starts texting, I confront him/her about this.* These were answered on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) and averaged ($\alpha = 0.68$).

In addition, we coded several variables for each state based on information from the US National Conference of State Legislatures (NCSL) database on 'State cellphone use while driving laws' (*Traffic Safety State Bill Tracking*, n.d.) and we verified them through state news articles. With regard to the ban itself these were: year the ban was introduced (recoded into the variable "ban tenure"), the presence of a fine of texting and driving, the size of the fine (as a proportion to state income per capita), offense level (primary or secondary), and whether the fine size depends on whether someone is harmed due to the offence (from now on referred to as "harm increase"). We also coded for other state-related variables that might possibly be related to the timing of the state ban, namely: population size, population density, vehicle miles traveled in 2016, deaths due to crashes (absolute and relative to both population and to number of vehicles), median household income, percentages of white, African-American and Hispanic, percentage of foreign born and mean travel time to work. State political color was a continuous scale calculated based on the election results of 2012 and 2016. For both years, states with clear republican victory were coded as "1", states with a narrow margin republican victory were coded as "2", states with a narrow margin democratic victory were coded as "3", and states with clear democratic victory were coded as "4". The means over 2012 and 2016 were averaged into one scale representing the "blueness" of a state.

Table 1
Results of Regression on social norm enforcement as a function of ban tenure without (model 1) and with control variables (model 2).

	Model 1	Model 2
	b (SE)	b (SE)
Ban tenure (state)	0.08** (0.02)	0.16*** (0.04)
Age		-0.38** (0.12)
Age-squared		0.01** (0.00)
Age-cubed		-0.00** (0.00)
Gender (female)		0.37*** (0.10)
Income		-0.03 (0.02)
Education		0.02 (0.04)
Population density (state)		0.00 (0.00)
Miles traveled (state)		0.00 (0.00)
Fatal crashes (state)		-0.00* (0.00)
Fatal crashes proportional to population (state)		-0.04 (0.05)
Fatal crashes proportional to vehicle miles (state)		1.12 (0.72)
Median income (state)		0.00 (0.00)
Income per capita (state)		-0.00 (0.00)
Education: % Bachelor or higher (state)		-0.01 (0.03)
Race: % white (state)		0.02* (0.01)
Race: % black (state)		-0.01 (0.01)
Race: % Hispanic (state)		0.04* (0.02)
Race: % foreign born (state)		-0.03 (0.03)
Mean travel time to work (state)		0.08 (0.05)
Political color: Democratic (state)		-0.15 (0.10)
Primary offense (state)		0.12 (0.47)
Harm increase (state)		1.06* (0.42)
Size of fine proportional to income per capita (state)		0.00 (0.00)
Constant	3.72 (0.16)	4.05*** (2.69)
N	875	875
R^2	0.01**	0.09***

****: $p < 0.001$, **: $p < 0.01$, *: $p < 0.05$.

2.2. Results

Results were computed in Stata/SE 17.0. With an OLS regression, we regressed ban tenure on social norm enforcement with and without control variables (see Table 1); we report unstandardized coefficients. Results showed that ban tenure significantly predicted social norm enforcement, both with (b = 0.16, p <.001, 95 % CI = [0.08, 0.25], $f^2 = 0.02$) and without (b = 0.08, p =.001, 95 % CI = [0.03, 0.13], $f^2 = 0.01$) control variables. This suggests that, independent of explanatory variables such as political color or state traffic variables, the longer a state ban had been in place on texting and driving, the more inclined people living in that state were to confront others who texted while driving.

Fig. 1 displays the correlation between ban tenure and social norm enforcement alongside with a scatter plot of state-specific average willingness to socially confront conditional on length of ban in that state. Note that we have an uneven number of observations per state, so the model fit should be seen as a weighted average of the state-specific means.

3. Dataset 2

3.1. Methods

Through both Amazon Mechanical Turk and Prolific, 569 people (127 males) who worked in health care were recruited in the fall of 2018 to fill in a survey about the influenza vaccination. Of the 569 recruited respondents, 242 were nurses or doctors. The majority were from the US (315) and the UK (205). The mean age was 37 (SD = 10.49). Of these respondents, 485 filled in all questions that were needed for our main analysis. This n was large enough to detect a small effect ($f^2 = 0.02$) with a power of 0.87 (based on G*power 3.1, F-test). No data exclusions were made.

Respondents were asked several demographic questions. The main independent variable, presence of a mandate, was measured with the following question: *Is the flu vaccination compulsory within your organization?*

The following control variables were measured: whether respondents were medical or care personnel (i.e., nurses or doctors, as opposed to allied health professionals or other functions), their tenure in health care (*How long have you been working in health care?*), whether the flu vaccination was freely available by their organization (*Does your organization offer the flu vaccination to employees?* 0 = "no" or "yes, but paid" and 1 = "yes, free of charge"). Further, general vaccine attitudes were measured by four items: *Vaccinations… 1) have major benefits for public health, 2) are effective in reducing serious diseases, 3) are harmful because of the substances they contain, 4) have little use because it often concerns innocent illnesses.* These questions were answered on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). After reverse coding items 1 and 2, they were averaged into a scale of vaccination skepticism (α = 0.87).

Social norm enforcement was measured using the same Likert-type answering scale, with two items: *If my colleagues would doubt about the flu vaccination, then I would try to convince them of the usefulness* and *If my colleagues would not get the flu vaccination, I would try to convince them that they should get vaccinated.* These items were averaged (α = 0.96).

As part of a different research question, the presence of moral appeal was manipulated as well. Controlling for this manipulation did not affect the results. Results with regard to the moral appeal can be found in Study 1 of Mulder & Lokate (2022).

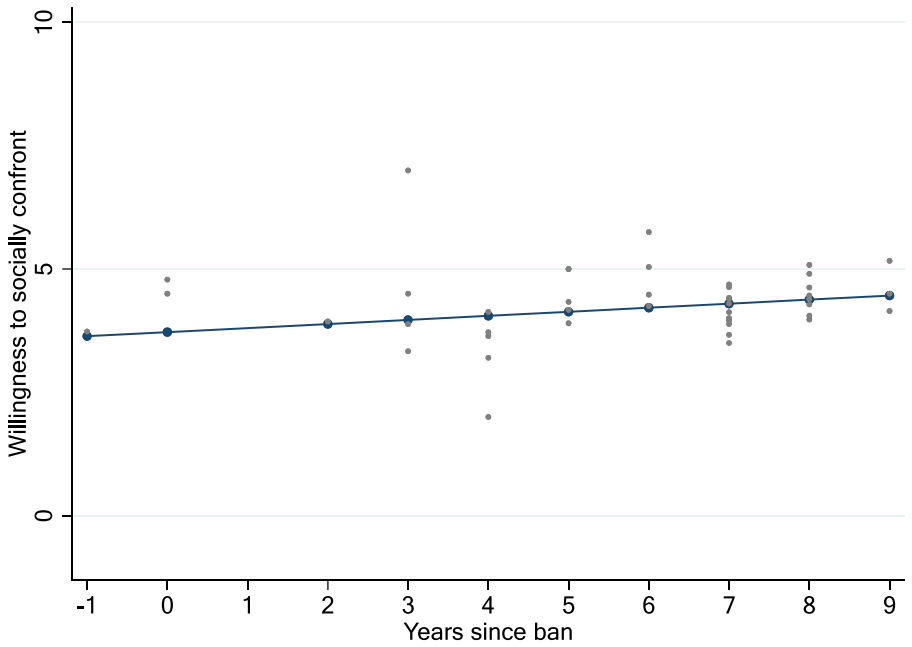


Fig. 1. Relationship between willingness to enforce norm and ban tenure.

3.2. Results

Results were computed in Stata/SE 17.0. An OLS regression was performed with social norm enforcement as the dependent variable, both with and without control variables; we report unstandardized coefficients and standard errors. The results (see Table 2) showed that presence of a mandate significantly predicted social norm enforcement both with ($b = 0.22$, $p < .001$, 95 % CI = [0.14, 0.30], $f^2 = 0.05$) and without ($b = 0.26$, $p < .001$, 95 % CI = [0.17, 0.35], $f^2 = 0.07$) control variables.

Fig. 2 plots the effect of vaccination mandate by comparing social norm enforcement levels between health practitioners for whom flu vaccination is compulsory and for health practitioners for who it is not. In the supplementary materials, figures are presented in which this mandate effect is shown for several subgroups (gender, age, job type, vaccine skepticism, and whether the vaccination was freely offered). These figures indicate that mandate-social norm enforcement relation holds across subgroups).

Thus, people were more likely to confront others about not vaccinating in organizations where the flu vaccination was compulsory. This could not be attributed to factors such as vaccination being offered in the organization or the type of personnel in organizations with vaccination mandates.

4. Dataset 3

4.1. Method

In March 2020, a law was introduced in the Netherlands to reduce the maximum road speed limit from 130 km/hour to 100 km/hour. Ten days before the new Dutch speed limit law came into effect, Dutch respondents were recruited through Facebook advertising to take part in a survey about the reduced speed limit (T1). Recruitment lasted for a week, ending three days before the law came into effect. This T1 measure rendered 4,565 respondents (22 % female). Ten weeks, and then six months after the law came into effect the same respondents were approached to complete T2 and T3 respectively. The T2 measure consisted of 2,568 (56 % survival) and the T3 of 1,862 respondents (41 % overall survival). An additional eight respondents were removed because they were under 18 (1) or because they appeared to have filled in the survey in a non-serious way (7). The number of respondents who took part in all three surveys was 1672. Of these 1672, 236 (20 %) was female. Mean age was 48.7 ($SD = 14.85$). The size of the participant pool was large enough to detect a small effect (d = 0.2) with a power of > 0.99 (based on G*power 3.1, *t*-test).

Social norm enforcement was measured in T1 and T3, and in a more personalized way than in datasets 1 and 2: respondents were asked to have a specific friend (not their husband/wife/partner) in mind. They were asked to type in the name of this friend. This name then appeared in the two items measuring social confrontation (measured on the same Likert scale as in datasets 1 and 2): *If I notice that [name of friend] will continue* (T1)/*continues* (T3) *to drive 130 despite the 100 km law, I would* 1) *call [name of friend] to account,* and 2) *try to convince [name of friend] to drive 100.* These two items were answered on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) and were combined into one scale (α = 0.93 for T1 and α = 0.94 for T3).

Also, social norm enforcement on a different domain (non-compliance with the COVID-19 rules) were measured in T2 and T3, using the same friend's name. This was measured by letting respondents imagine that, during the COVID-19 crisis, their specific friend had had eight visitors over at his/her place (which was clearly against the COVID-19 rules of that moment). They indicated to what extent they would 1) call this friend to account, and 2) try to convince their friend to better keep to the COVID-19 rules, on an answering scale from 0 to 100 % where they indicated the likelihood of these responses. The two items were combined into one scale (α = 0.90 for T2 and α = 0.92 for T3) and used as control variables.

4.2. Results

Results were computed in Stata/SE 17.0. Willingness to socially confront those driving above 100 km/h significantly increased from T1 ($M = 3.09$, $SD = 2.06$) to T3 ($M = 3.21$, $SD = 2.08$), paired sample test $t(1798) = -3.41$, $p < .001$, mean difference = 0.12, 95 %

Table 2
Results of OLS Regression on social norm enforcement as a function of control variables (model 1) and presence of vaccination mandate (model 2).

	Model 1	Model 2
	b (SE)	b (SE)
Vaccination mandate	0.26*** (0.04)	0.22*** (0.04)
Age		0.03 (0.05)
Gender (female)		-0.17 (0.09)
Medical or care personnel		0.10 (0.08)
Tenure in health care		-0.09 (0.05)
Flu vaccination offered by organization		-0.12 (0.10)
Vaccination skepticism		-0.45*** (0.04)
Constant	-0.00 (0.04)	0.17 (0.12)
N	486	486
R^2	0.07***	0.27***

***: p < 0.001, **: p < 0.01 and *: p < 0.05.

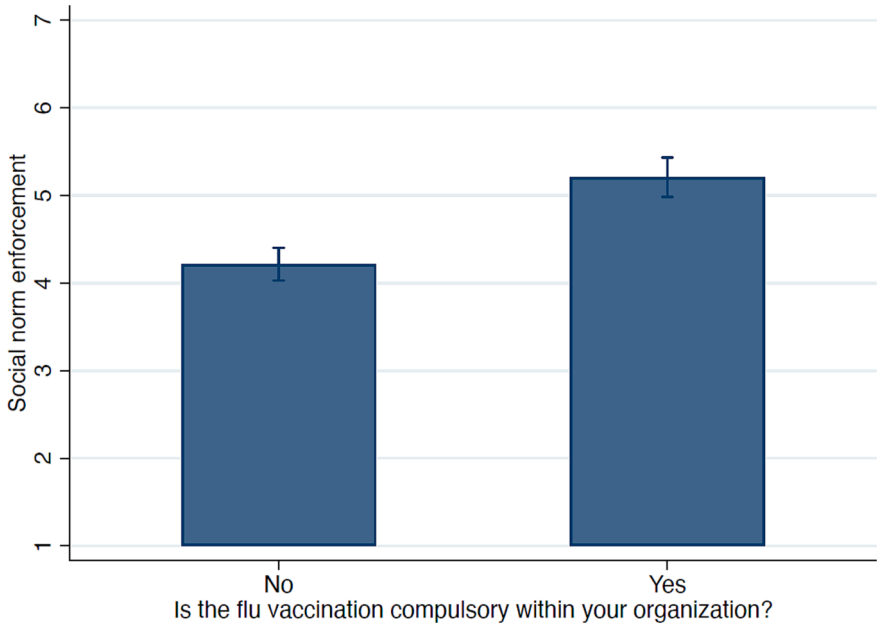


Fig. 2. Social norm enforcement as a function of presence of mandate in health institution.

CI = [0.05, 0.19], Cohen's $d_z = 0.08$. To check if that this increase was not due to a general increase in willingness to confront others, inflicted by the COVID crisis (which started right after the T1 measurement), we performed some additional analyses. First, we calculated difference scores for both social norm enforcement measures, and checked for a correlation. This showed that the increase in "speed limit social confrontation" mildly correlated with the increase in "COVID-19 social confrontation" ($r = 0.12$). Next, we performed a repeated measures General Linear Model in which speed limit social norm enforcement willingness at T1 and T3 were entered as within-participant factors, and the increase in COVID-19 social norm enforcement was entered as a control variable. As the COVID-19 related variable was only collected in T2 and T3, while social confrontation about the speed limit was measured in T1 and T3, this analysis included only respondents who filled in all three surveys, and filled in all confrontation questions (N = 1386).

A main effect was found of the speed limit social norm enforcement within-factor, $F(1, 1384) = 17.46$, $p < .001$, $f^2 = 0.0001$, as well

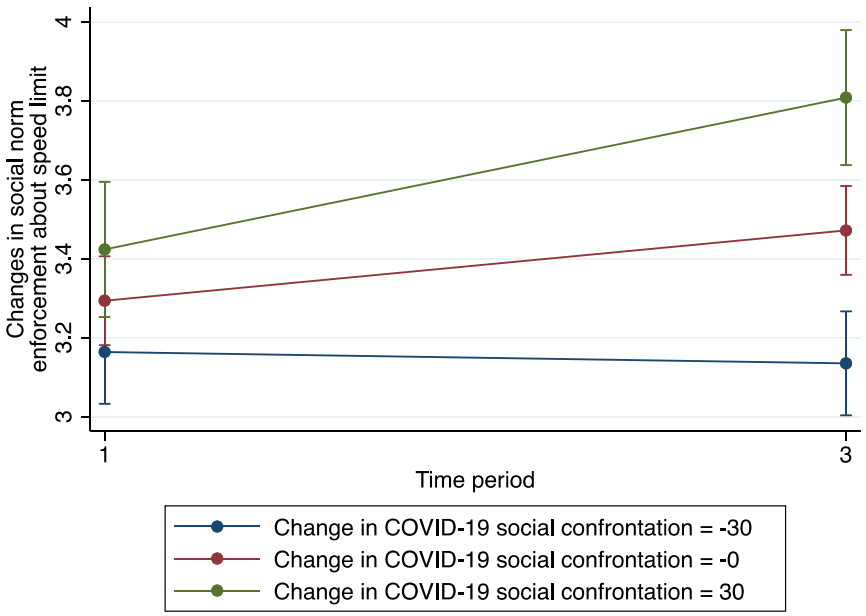


Fig. 3. Changes in social norm enforcement about speed limit from T1 to T3, with and without control for changes in COVID-19 social confrontation.

as a main effect of increase in COVID-19 social norm enforcement, $F(1, 1384) = 6.09$, $p = .013$, $f^2 = 0.01$, and an interaction between these two factors, $F(1, 1384) = 28.08$, $p < .001$, $f^2 = 0.02$. To interpret this interaction, we inspected the effect of the within factor for three different levels of COVID-19 social norm enforcement increase (see Fig. 3). This showed that speed limit social norm enforcement did not increase for those people who *decreased* in 30 percent-points on COVID-19 social norm enforcement ($T1_{EMean} = 3.16$, $T3_{EMean} = 3.14$, $p = .56$, mean difference = 0.03, 95 % CI = [-0.12, 0.07]), but did increase for those people who did not change in COVID-19 social norm enforcement ($T1_{EMean} = 3.29$, $T3_{EMean} = 3.47$, $p < .001$, mean difference = 0.18, 95 % CI = [0.09, 0.26]) and for those who increased in 30 percent-points on COVID-19 social norm enforcement ($T1_{EMean} = 3.42$, $T3_{EMean} = 3.81$, $p < .001$, mean difference = 0.38, 95 % CI = [0.26, 0.51]). Thus, the increase of speed limit social norm enforcement was stronger when COVID-19 social norm enforcement increased as well.

In sum, this data shows that social norm enforcement about speeding increased after a speed limit law came into effect. As this increase is also shown when controlling for social norm enforcement in a different domain (and as the change also takes place for those who did not increase in social norm enforcement in the second domain), it is unlikely that these results can be attributed to a general increase in inclination to socially confront across the time period in question.

5. Dataset 4

5.1. Method

The final dataset concerned a longitudinal survey of UK respondents, distributed a week before and three months after mask wearing was made compulsory on public transport in the UK during the COVID-19 crisis. One week before mask laws came into effect in the UK (July 2020), 222 respondents were recruited through Prolific (T1). This sample size was chosen as it was able to detect a medium effect size ($f = 0.25$) with 95 % power (calculated via G*Power 3.1) and was also the maximum number of participants that could be recruited through funding restraints. The same respondents were approached three months later (T2), when the mask rules had been in place for a long time and where those rules were about to become stricter, encompassing places of hospitality as well as shops (October 2020). Of these respondents, 179 (69 % female, $M_{age} = 34.2$, $SD_{age} = 11.87$) completed surveys before and after policy intervention (80 % survival).

In the T1 survey, respondents were first asked to categorize themselves as someone who does or doesn't wear a mask in public spaces, as a binary measure of their mask wearing status. Of the 186 respondents who filled in both T1 and T2, 133 wore masks before policy intervention.

In both T1 and T2, social norm enforcement was measured through the following question: "Imagine you meet a friend in public and they are not wearing a mask. Would you confront your friend about this and ask them to wear a mask?", on a 7-point Likert scale (1 = 'definitely wouldn't confront' to 7 = 'definitely would confront').

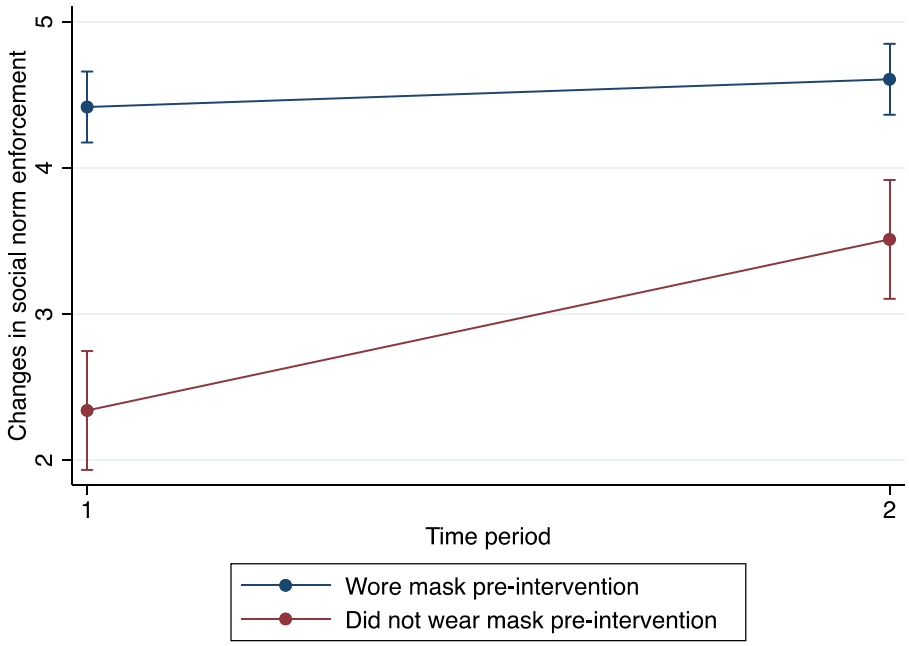


Fig. 4. Paired *t*-test changes in social norm enforcement from before to after policy intervention, based on original mask wearing behavior.

5.2. Results

These results were computed in Stata/SE 17.0. A paired-samples *t*-test showed a significant increase in willingness to confront a friend after policy intervention ($M = 4.34$, $SD = 1.97$) compared to before policy intervention ($M = 3.87$, $SD = 2.05$), $t(177) = 3.07$, $p = .003$, 95 % CI = [0.17, 0.77], $d_z = 0.22$. A repeated-measures mixed ANOVA was then conducted to ascertain whether this difference was driven by whether people originally did or didn't wear a mask before policy intervention. There were main effects of mask status, $F(1,177) = 34.54$, $p < .001$, $\eta^2 = 0.083$ and time point $F(1,177) = 16.09$, $p < .001$, $\eta^2 = 0.163$. There was also an interaction between mask status and time point $F(1,177) = 8.37$, $p = .004$, $\eta^2 = 0.045$ (see Fig. 4).

Bonferroni-corrected post-hoc t-tests showed that people who wore masks before policy intervention did not significantly increase in willingness to confront from T1 ($M = 4.42$, $SD = 1.86$) to T2 ($M = 4.61$, $SD = 1.93$), $t = -1.09$, $p = .28$, 95 % CI = -0.65, 0.27, $d_z = 0.10$. In comparison, people who did not wear masks before policy intervention were significantly more likely to confront a friend after policy intervention ($M = 3.51$, $SD = 1.86$) compared to before ($M = 2.34$, $SD = 1.77$), Holm-Corrected $t = -4.02$, $p < .001$, 95 % CI = -1.95, -0.039, $d_z = 0.64$. Further, at both time points, people who didn't wear masks initially were significantly less likely than those who did wear masks to confront a friend (before policy: Holm-Corrected $t = 6.66$, $p < .001$, 95 % CI = 1.24, 2.91, $d = 1.15$; after policy: Holm-Corrected $t = 3.37$, $p = .003$, 95 % CI = 0.23, 1.96, $d = 0.574$).

The results again show that, after the policy was implemented, social norm enforcement intention increased. Also, social norm enforcement intention increased more strongly for those whose pre-policy behavior was *not* in line with the policy. This suggests that the greater observed propensity for social norm enforcement in the presence of the policy was more likely to be due to increasing awareness, and internalization, of a moral norm rather than to facilitating social norm enforcement for those who already adhered to the norm in the first place. We discuss this in more detail in the discussion section.

6. Discussion

Results from the analysis of the four datasets are in line with our theorizing that policies that mandate a particular behavior contribute to citizens' willingness to engage in social norm enforcement by confronting those who engage in the behavior. The data showed that people were more inclined to confront others when they texted while driving in states where a ban on texting and driving had been in place for a longer time. In organizations where the flu vaccination was compulsory, people were more inclined to confront vaccine-hesitant co-workers. Also, people became more inclined to confront others who speed after the introduction of a lower road speed limit law. And finally, after the introduction of a COVID-19 mandate to wear masks, people were more inclined to confront non-mask wearers only if they themselves had not been a mask-wearer prior to the policy being introduced.

These results support our reasoning that hard measures of laws and mandates may do more than just deter people from behaving in certain ways out of a desire to avoid punishment. They also communicate a moral norm (Cooter, 1998; Feldman & Perez, 2009; McAdams, 2000; Mulder, 2008) and potentially encourage people to engage in social norm enforcement when others in their network violate the norm. Such social norm enforcement has been shown to contribute to upholding cooperative norms within a society (Fehr & Gächter, 2002; Otten et al., 2021). Also, it helps to increase perceptions that the law or mandate is socially supported, which will likely, in turn, further contribute to raising rates of compliance (Desmet & Engel, 2021).

Our data adds to the literature by proposing a contextual factor that contributes to social norm enforcement. Previous literature has shown that social norm enforcement is influenced by factors such as geographical location (Berger & Hevenstone, 2016), the style of clothing of the norm violator (Wolbring et al., 2013), the ethnic background of both violator and confronter (Winter & Zhang, 2018), the extent to which the confronter has a personal interest in social norm enforcement (Przepiorka & Berger, 2016) and personality of the confronter (Goodwin et al., 2020). Our data adds to this stream of literature by suggesting that the presence of a law or mandate may also be a factor that contributes to social norm enforcement.

Interestingly, our results may seem at odds with the study of Przepiorka and Berger (2016) who found no difference in social enforcement of the silence norm on trains between train carriages with "silence" sign and those without such a sign. However, the study of Przepiorka and Berger had sample sizes around 20–42 per condition. The effect sizes in our study were relatively small, such that these would translate in a required sample of about 200 individual observations per condition in a field study to show a statistically significant effect. Moreover, another reason for their null-effect, identified by Przepiorka and Berger themselves, is that breaking a norm that is made explicit (i.e., playing music in a train carriage with a "silent" sign) may evoke fear of retaliation as the norm breaker may be viewed as someone who seeks a quarrel. This may neutralize any positive effects of a sign legitimizing people to confront a rule breaker. In our datasets this was less of an issue because our measures of social norm enforcement concerned norm violators within participants' own network (friends or colleagues). If the norm violator is someone you know, the presence of a mandate is less likely to induce fear of retaliation, and therefore to outweigh the positive effects of feeling legitimized through the mandate. Future research on social norm enforcement could shed more light on the distinction between confronting strangers and confronting members of one's own network.

As we argued earlier, there may be two reasons why laws and mandates contribute to social norm enforcement. The first one was also identified by Przepiorka and Berger (2016): the presence of a policy makes it easier for people to confront others. They arguably feel supported by the presence of the policy and feel that confronting others is a legitimate act, and hence more likely to be accepted by the confronted person (and onlookers). In other words, people may feel *less inhibited* to confront others. A second way in which laws and mandates may contribute to social norm enforcement is that the mere presence of the policy contributes to framing the behavior in moral terms, and therefore increases the moral indignation people feel towards people who act against the policy. Hence, people may feel *more motivated* to confront others.

Although our paper was not set up to tease apart these separate explanations, dataset 4 does provide some insights in this regard. After the UK mask mandate was introduced, willingness to engage in social norm enforcement increased only among people who were not wearing masks before the mandate was introduced. This suggests that the mandate had increased moral framing with regard to mask use, rather than giving people who were already in favor of masks greater ammunition with which to confront others. This gives more support for the motivational explanation than the inhibition explanation. However, before drawing firm conclusions about this, further research is needed. After all, we only had data on people's intentions to engage in social norm enforcement, which are likely to tap into motivation. Studying whether or not laws and mandates help to overcome people's inhibitions to engage in social norm enforcement may require measuring actual confrontation behavior, which is naturally more influenced by social costs than are intentions. However, dataset 4 still shows that, once required to wear a mask, the majority of new adopters of the practice became more willing to socially confront others who still failed to adhere to the policy. This is in line with our assumption that a policy can contribute to people actually internalizing the moral norm being communicated by that policy, rather than just following the rules to avoid punishment.

An important limitation of our paper is that our data may suffer from endogeneity issues that complicate the drawing of causal inferences. Because datasets 1 and 2 are cross-sectional, the results are vulnerable to alternative explanations. First, the results of these datasets may potentially be explained by reversed causality in the sense that consensus about social norms within the population (and thus also engagement in social norm enforcement) has been translated by policy makers into laws or mandates. However, this reverse causality explanation does not apply for datasets 3 and 4 that are longitudinal in nature and show an increase in social norm enforcement after the installation of a law. Second, the relation between laws/mandates and social norm enforcement in datasets 1 and 2 may have been driven by third variables. In dataset 1, a potential alternative explanation of the relation between ban tenure and social norm enforcement is that states with longer ban tenures have a more progressive political orientation or are more punitive in nature, which may explain the stronger inclination to be engaged in social norm enforcement. In dataset 2, differences in flu vaccination mandates across organizations could reflect broader differences in organizational culture that attract specific types of practitioners to organizations that prescribe flu vaccination among staff. We partly addressed these issues by including various control variables. In dataset 1, in particular, we were able to control for various types of demographic data, which included political color of the states, fine size, and many traffic-related variables. This rules out the most prominent alternative explanations of the ban tenure-social norm enforcement relation, such as political orientation and punitiveness of society.

Nevertheless, we acknowledge that we likely did not capture all the potential variables that may form alternative explanations. In datasets 3 and 4, the relation between laws/mandates and later social norm enforcement may have been driven by other changes that happened over time. For example, it is possible that the norms with regard to the lower speed limit or wearing mouth masks were already changing (for example, due to media coverage), and shifts in confrontation proclivity may have also been observed if the mandates had not been installed. This is something that we cannot rule out. In sum, while each study had different shortcomings, we did find convergent support for our hypotheses in four distinct behavioral domains in three different countries.

Another important limitation of our results is that we observed small effect sizes. Interpretation of the effect sizes (around $f^2 = 0.06$ in datasets 1 and 2, and Cohen's d_z of 0.08-0.22 in datasets 3 and 4) leads us to the following conclusion with regard to the common language effect size (Lakens, 2013): the probability that a randomly sampled person in a group with a law or mandate would score higher on social norm enforcement inclination than a randomly sampled person in a group without a law or mandate is 53–58 % (with 50 % being a benchmark of a null effect with Cohen's $d = 0$). This effect is not nearly large enough to rely on interpersonal policing among citizens that would compensate for the surveillance gaps of legal authorities. Nevertheless, the effect may not be meaningless. If laws and mandates make it slightly more likely that people confront others in their network, then this can contribute to the gradual consolidation of moral and social norms. The installation of a law or mandate alone may not be enough for large changes, but it is likely that they at least help in bringing them about.

The fact that social confrontation intentions (rather than actual social confrontation behavior) were measured, can be considered as a limitation. Literature has shown that the rate of people actually confronting a norm violator lags far behind the rate of people *reporting* that they would confront (Balafoutas & Nikiforakis, 2012; Goodwin et al., 2020; Swim & Hyers, 1999; Winter & Zhang, 2018). Also, by measuring social norm enforcement *intentions* we have tapped more into people's motivations to engage in social norm enforcement than into their actual acts of social norm enforcement. As mentioned above, compared to intentions, actual social norm enforcement behavior may be determined to a greater degree by people's perceptions of costs of norm enforcement (for example, in terms of expected negative reactions of the confronted person and possible harm to their relationship). However, for social norm enforcement to occur at all, motivation is necessary. If people are not motivated to confront others, they will not engage in it, no matter how low the perceived cost of confrontation. Thus, motivations to engage in social norm enforcement are a construct worthy of focus because they form a precondition for actual engagement in social norm enforcement. We therefore believe that our results with regard to social norm enforcement intentions are meaningful and are an important building block in helping us understand the role of rules and mandates in social norm enforcement.

7. Conclusion

Our findings provide insights into the potential benefits for behavioral change resulting from policies that mandate particular behavioral actions. Specifically, our data are in line with the idea that laws and mandates may contribute to changes in population-level behaviors that are in excess of those accrued by individual actors fearing detection and punishment. Across four different behavioral domains, in three different countries, we find that 'hard' mandate policies are associated with a greater willingness amongst citizens to engage in social norm enforcement towards peers who violate the norm. This is in line with the idea that the presence of such

policies may play a potential role in fostering informal interpersonal policing of behavior. These findings should be of particular interest to policymakers who aim not only to deter people from a certain behavior, but also to contribute to the gradual consolidation of a moral and social norm within society over time.

CRediT authorship contribution statement

Laetitia B. Mulder: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Formal analysis, Methodology. **Tim Kurz:** Writing – original draft, Writing – review & editing. **Annayah M.B. Prosser:** Data curation, Writing – review & editing, Visualization, Formal analysis. **Miguel A. Fonseca:** Writing – review & editing, Visualization, Formal analysis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

I have made my data available in OSF and in the paper the link to this data is shared

References

Balafoutas, L., & Nikiforakis, N. (2012). Norm enforcement in the city: A natural field experiment. *European Economic Review, 56*, 1773–1785. https://doi.org/10.1016/j.euroecorev.2012.09.008

Balafoutas, L., Nikiforakis, N., & Rockenbach, B. (2016). Altruistic punishment does not increase with the severity of norm violations in the field. *Nature Communications., 7*(1). https://doi.org/10.1038/ncomms13327

Baumert, A., Li, M., Sasse, J., & Skitka, L. (2020). Standing up against moral violations: Psychological processes of moral courage. *Journal of Experimental Social Psychology, 88*. https://doi.org/10.1016/j.jesp.2020.103951

Becker, G. (1968). Crime and punishment: An economic approach. *Journal of Political Economy, 76*(2), 169–217.

Berger, J., & Hevenstone, D. (2016). Norm enforcement in the city revisited: An international field experiment of altruistic punishment, norm maintenance, and broken windows. *Rationality and Society, 28*(3), 299–319. https://doi.org/10.1177/1043463116634035

Bubb, R., & Pildes, R. H. (2013). How Behavioral Economics Trims Its Sails and Why. *Harvard Law Review, 127*(6), 1593–1679.

Cooter, R. (1998). Expressive Law And Economics. *The Journal of Legal Studies, 27*(S2), 585–607. https://doi.org/10.1086/468036

Czopp, A. M., & Monteith, M. J. (2003). Confronting Prejudice (Literally): Reactions to Confrontations of Racial and Gender Bias. *Personality and Social Psychology Bulletin, 29*(4), 532–544. https://doi.org/10.1177/0146167202250923

Czopp, A. M., Monteith, M. J., & Mark, A. Y. (2006). Standing up for a change: Reducing bias through interpersonal confrontation. *Journal of Personality and Social Psychology, 90*(5), 784–803. https://doi.org/10.1037/0022-3514.90.5.784

Desmet, P. T. M., & Engel, C. (2021). People are conditional rule followers. *Journal of Economic Psychology, 85*, Article 102384. https://doi.org/10.1016/j.joep.2021.102384

Eckel, C. C., Fatas, E., & Kass, M. (2022). Sacrifice: An experiment on the political economy of extreme intergroup punishment. *Journal of Economic Psychology, 90*. https://doi.org/10.1016/j.joep.2022.102486

Eliezer, D., & Major, B. (2012). It's not your fault: The social costs of claiming discrimination on behalf of someone else. *Group Processes & Intergroup Relations, 15*(4), 487–502. https://doi.org/10.1177/1368430211432894

Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature, 415*, 137–140. https://doi.org/10.1038/415137a

Feldman, Y., & Perez, O. (2009). How Law Changes the Environmental Mind: An Experimental Study of the Effect of Legal Norms on Moral Perceptions and Civic Enforcement. *Journal of Law and Society, 36*(4), 501–535. https://doi.org/10.1111/j.1467-6478.2009.00481.x

Funk, P. (2007). Is There An Expressive Function of Law? An Empirical Analysis of Voting Laws with Symbolic Fines. *American Law and Economics Review, 9*(1), 135–159. https://doi.org/10.1093/aler/ahm002

Galdi, S., Maass, A., & Cadinu, M. (2017). Defending the Victim of Sexual Harassment: The Influence of Civil Courage and Media Exposure. *Psychology of Women Quarterly, 41*(3), 338–351. https://doi.org/10.1177/0361684317709770

Goodwin, R., Graham, J., & Diekmann, K. A. (2020). Good intentions aren't good enough: Moral courage in opposing sexual harassment. *Journal of Experimental Social Psychology, 86*. https://doi.org/10.1016/j.jesp.2019.103894

Hofmann, E., Hoelzl, E., Sabitzer, T., Hartl, B., Marth, S., & Penz, E. (2022). Coercive and legitimate power in the sharing economy: Examining consumers' cooperative behavior and trust. *Journal of Economic Psychology, 93*, Article 102565. https://doi.org/10.1016/j.joep.2022.102565

Kaiser, C. R., & Miller, C. T. (2001). Stop Complaining! The Social Costs of Making Attributions to Discrimination. *Personality and Social Psychology Bulletin, 27*(2), 254–263. https://doi.org/10.1177/0146167201272010

Klick, J., & Tabarrok, A. (2010). Police, Prisons, and Punishment: The Empirical Evidence on Crime Deterrence. In B. Benson & P. Zimmerman (Eds.) *Handbook on the Economics of Crime*. Edward Elgar Publishing. 10.4337/9781849806206.00014.

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology, 4*. https://www.frontiersin.org/articles/10.3389/fpsyg.2013.00863.

Masclet, D., Noussair, C., Tucker, S., & Villeval, M.-C. (2003). Monetary and Nonmonetary Punishment in the Voluntary Contributions Mechanism. *American Economic Review, 93*(1), 366–380. https://doi.org/10.1257/000282803321455359

McAdams, R. H. (2000). An Attitudinal Theory of Expressive Law Norms Theory. *Oregon Law Review, 79*(2), 339–390.

Mulder, L. B. (2008). The difference between punishments and rewards in fostering moral concerns in social decision making. *Journal of Experimental Social Psychology, 44*(6), 1436–1443. https://doi.org/10.1016/j.jesp.2008.06.004

Mulder, L. B. (2018). When sanctions convey moral norms. *European Journal of Law and Economics, 46*(3), 331–342. https://doi.org/10.1007/s10657-016-9532-5

Mulder, L. B., & Lokate, M. (2022). The effect of moral appeals on influenza vaccination uptake and support for a vaccination mandate among health care workers. *Social Science & Medicine, 312*, Article 115357. https://doi.org/10.1016/j.socscimed.2022.115357

Mulder, L. B., Rink, F., & Jordan, J. (2020). Constraining temptation: How specific and general rules mitigate the effect of personal gain on unethical behavior. *Journal of Economic Psychology, 76*. https://doi.org/10.1016/j.joep.2019.102242

Nelissen, R. M. A., & Mulder, L. B. (2013). What makes a sanction "stick"? The effects of financial and social sanctions on norm compliance. *Social Influence, 8*(1), 70–80. https://doi.org/10.1080/15534510.2012.729493

Otten, K., Buskens, V., Przepiorka, W., & Ellemers, N. (2021). Cooperation between newcomers and incumbents: The role of normative disagreements. *Journal of Economic Psychology, 87*. https://doi.org/10.1016/j.joep.2021.102448

Przepiorka, W., & Berger, J. (2016). The Sanctioning Dilemma: A Quasi-Experiment on Social Norm Enforcement in the Train. *European Sociological Review, 32*(3), 439–451. https://doi.org/10.1093/esr/jcw014

Rudisill, T. M., Baus, A. D., & Jarrett, T. (2019). Challenges of enforcing cell phone use while driving laws among police: A qualitative study. *Injury Prevention, 25*(6), 494–500. https://doi.org/10.1136/injuryprev-2018-042931

Sabini, J. P., & Silver, M. (1978). Moral Reproach and Moral Action. *Journal for the Theory of Social Behaviour, 8*(1), 103–123. https://doi.org/10.1111/j.1468-5914.1978.tb00393.x

Shelton, J. N., & Stewart, R. E. (2004). Confronting Perpetrators of Prejudice: The Inhibitory Effects of Social Costs. *Psychology of Women Quarterly, 28*(3), 215–223. https://doi.org/10.1111/j.1471-6402.2004.00138.x

Simpson, B., Willer, R., & Harrell, A. (2017). The Enforcement of Moral Boundaries Promotes Cooperation and Prosocial Behavior in Groups. *Scientific Reports, 7*(1), e42844.

Skinner, B. F. (1945). The operational analysis of psychological terms. *Psychological Review, 52*(5), 270–277. https://doi.org/10.1037/h0062535

Steentjes, K., Kurz, T., Barreto, M., & Morton, T. A. (2017). The norms associated with climate change: Understanding social norms through acts of interpersonal activism. *Global Environmental Change, 43*, 116–125. https://doi.org/10.1016/j.gloenvcha.2017.01.008

Swim, J. K., & Hyers, L. L. (1999). Excuse Me—What Did You Just Say?!: Women's Public and Private Responses to Sexist Remarks. *Journal of Experimental Social Psychology, 35*(1), 68–88. https://doi.org/10.1006/jesp.1998.1370

Szekeres, H., Halperin, E., Kende, A., & Saguy, T. (2019). The effect of moral loss and gain mindset on confronting racism. *Journal of Experimental Social Psychology, 84*, Article 103833. https://doi.org/10.1016/j.jesp.2019.103833

Thorndike, E. L. (1913). Educational Diagnosis. *Science, 37*(943), 133–142.

Traffic Safety State Bill Tracking. (n.d.). Retrieved January 28, 2021, from https://www.ncsl.org/research/transportation/state-traffic-safety-legislation-database.aspx.

Winter, F., & Zhang, N. (2018). Social norm enforcement in ethnically diverse communities. *Proceedings of the National Academy of Sciences, 115*(11), 2722–2727. https://doi.org/10.1073/pnas.1718309115

Wolbring, T., Bozoyan, C., & Langner, D. (2013). „Links gehen, rechts stehen!" / "Walk Left, Stand Right!": Ein Feldexperiment zur Durchsetzung informeller Normen auf Rolltreppen / A Field Experiment on the Enforcement of Informal Norms on Escalators. *Zeitschrift für Soziologie, 42*(3), 239–258. https://doi.org/10.1515/zfsoz-2013-0305