

# Social norms of corruption in the field: social nudges on posters can help to reduce bribery

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**Abstract:** Corruption in the form of bribery continues to be a major societal challenge around the world. The current lab-in-the-field study tested whether dynamic descriptive norms messages on posters can help to reduce bribery. Before, during and after placing posters throughout a medium-sized South African town, incentivized measures of social norms and bribery were assessed in a mobile lab. A total of 311 participants stemming from the general population took part. In line with the pre-registered predictions, the results reveal that people: (1) perceive bribery to be less common; and (b) engage in bribery in a corruption game less frequently when the posters were displayed. The discussion outlines how social norms nudging campaigns can be leveraged to spur collective action against corruption.

Submitted 6 April 2019; revised 16 August 2019; accepted 15 October 2019

Corruption continues to produce profoundly negative consequences for societies around the world (Rothstein & Varraich, 2017). Massive anti-corruption efforts have largely failed to reduce daily forms of corruption, such as bribery

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(Fisman & Golden, 2017a). This failure stems in part from traditional anti-corruption approaches that underestimated the social embeddedness of systemic corruption (Rothstein, 2011) and a general neglect of the behavioural features of corruption on the individual level (Heywood, 2018). Instead, social norms accounts combining social and individual factors have gained popularity as theoretical frameworks for studying corruption (Kubbe & Engelbert, 2018).

Prominent social norms frameworks distinguish between an injunctive and a descriptive element of social norms (Goffman, 1969; Paprzycka, 1999; Bicchieri, 2016; Cialdini *et al.*, 1990). The injunctive element conveys what is considered as acceptable, while the descriptive element refers to what is considered as common (Tankard & Paluck, 2016). Recent theories on corruption highlight the descriptive element of social norms as a crucial predictor of corrupt behaviour (Rothstein, 2011; Marquette & Peiffer, 2015; Stephenson, 2018). For example, current theories on corruption suggest that people in high-corruption contexts often engage in petty forms of corruption because they believe that others around them do so too – even though they themselves might consider it wrong and unacceptable (Rothstein, 2000).

Evidence from controlled lab experiments suggests that social nudges targeted at changing perceived social norms can reduce bribery (Köbis *et al.*, 2015). However, field evidence for such social norms campaigns reducing bribery is lacking – as recent systematic literature reviews on social norms of corruption reveal no studies that test social norms as an anti-corruption tool in the field (Köbis *et al.*, 2020). Could similar social nudges also transform people's beliefs and reduce bribery in the field, where people are exposed to a multiverse of information in their environment? In pursuit of answers, we conducted a pre-registered ([https://osf.io/akp24/?view\\_only=500ad1877f6b411693044469-f840e94f](https://osf.io/akp24/?view_only=500ad1877f6b411693044469-f840e94f)), financially incentivized lab-in-the-field experiment in a country struck by high levels of corruption: South Africa. Our results provide first promising insights illustrating changes in perceived descriptive norms and bribery in a corruption game.

## Theories on the persistence of corruption

Corruption is widely defined as the 'abuse of public office for private gain' (Nye, 1967; Rose-Ackerman, 2006). The interdisciplinary literature unanimously describes stark differences in corruption levels around the globe (Heywood, 2014). Influential theoretical accounts have formalized these global differences in frequency-dependent equilibria models (Andvig & Moene, 1990; Bardhan, 1997). These models outline that societies either rest in a state of low or high corruption. To illustrate this view, consider the classical example of bribing a police officer to avoid a fine for a minor traffic violation. In a country where bribery

rarely occurs (= low-corruption equilibrium), offering a bribe likely leads to bigger trouble than paying the fine – the reason being the danger of the police officer reporting and punishing bribe attempts. However, in a context where bribery is commonplace (= high-corruption equilibrium), paying bribes represents the ‘best choice’ to get ahead. Here, corruption is theorized to be a social trap – meaning that once corruption has become systemic, it tends to reinforce itself (Stephenson, 2018). One major reason for this stems from the fact that legal enforcement institutions themselves fall prey to the high levels of corruption (Persson *et al.*, 2012). In the absence of reliable punishment, corruption turns into a collective action problem (Rothstein, 2000).

In the corrupt practice of bribery, for each individual, the decision ‘to bribe or not to bribe’ reflects a social dilemma: a conflict between short-term self-interest (= reaping the benefits of bribery) and long-term collective interest (= corruption-free society) (Köbis *et al.*, 2016, 2018). As in other social dilemma-type situations (Kerr & Kaufman-Gilliland, 1997; Bicchieri & Dimant, 2019), the expected benefit from bribery hinges on the belief about the behaviour of others. In short, the collective action problem of bribery consists of people bribing as they think it is common, even though they might not approve of it.

### *Towards a social norms perspective of corruption*

Social norms accounts can capture these dynamics and have therefore received increased attention among scholars seeking to understand and change socially entrenched practices (Efferson & Vogt, 2018), as well as among corruption researchers (Kubbe & Engelbert, 2018) and for anti-corruption policy (Scharbatke-Church & Chigas, 2016; Jackson & Köbis, 2018). That is, using social norms as an analytical lens allows us to study the occurrence of a particular corrupt practice by combining social and individual factors (Bicchieri, 2016; Cislighi & Heise, 2018). In particular, frameworks distinguishing between injunctive (= acceptability) and descriptive (= frequency) norms are well suited to analysing the collective action problem of corruption, as has been shown in recent lab studies (Köbis *et al.*, 2015; Zhao *et al.*, 2017; Abbink *et al.*, 2018; Schram *et al.*, 2019).

The perceptions of social norms are, however, subject to distortions (Perkins & Wechsler, 1996). In fact, people often overestimate actual levels of corruption, in part due to its secretive nature, which often prevents an actual observation of corrupt practices (Mény, 1996; Pinker *et al.*, 2008). In many societies, narratives about corruption exist, signifying that ‘everybody does it’, which further perpetuate the exaggerated perceived descriptive norms about corruption – and eventually sustain the outlined social trap of corruption. As many traditional anti-corruption policies have largely failed to escape this corruption

trap (Mungiu-Pippidi, 2017), new hope has been placed in behavioural approaches to fighting corruption, most importantly (social) nudging.

### *Behavioural approaches to reducing corruption: social norm nudging*

Applying behavioural economics and (social) psychology to public policy has increased over the last decades (Camerer *et al.*, 2003; Thaler & Sunstein, 2008; Oliver, 2015). Such behavioural approaches are also gaining increasing popularity in fighting corruption (e.g., see OECD, 2018). Although behavioural approaches can contribute in manifold ways to public policy (Oliver, 2013; Loewenstein & Chatter, 2017), here we focus on the most popular behavioural policy tool, namely nudging. According to Thaler and Sunstein (2008, p. 6), nudging refers to ‘any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.’

More specifically, we zero in on social norm nudging, defined as ‘a nudge whose mechanism of action relies on social norms, i.e., on providing social information or eliciting social expectations with the intent of inducing desirable behaviour’ (Bicchieri & Dimant, 2019, p. 2). Norm-nudging campaigns are based on the outlined social norms theories in assuming that people’s decisions are often subject to social influences. When crafted carefully, such norm nudging can prove successful in changing behaviour, as evidenced by a large corpus of studies across a wide array of practices (for a meta-analysis, see Manning, 2009).

When it comes to corrupt conduct, however, the insights so far merely rely on lab studies. For example, findings from Barr and Serra (2010) suggest that perceived descriptive norms about corruption are indeed malleable. Other lab studies suggest that providing social information about low levels of bribery among peers reduces people’s own propensity to bribe – hence providing the first causal evidence running from descriptive norms to corrupt behaviour (Köbis *et al.*, 2015). As an extension of these findings, we tested the effectiveness of norms nudges as a vehicle for reducing corruption in the field.

We distributed posters with descriptive norms messages about bribery throughout Manguzi, a medium-sized town in the region of KwaZulu-Natal (South Africa). Perceived levels of corruption have remained high throughout South Africa, and in the post-apartheid governments, fortifying socioeconomic inequalities within the country (Koelble, 2018; Peiffer *et al.*, 2019). However, survey data from South Africa, including the southern region of KwaZulu-Natal, show a positive trend, with self-reported bribery frequencies decreasing over recent years (Transparency International, 2013, 2017, Ethics Institute, 2016, 2017). Making use of this reduction, we displayed information about the decreasing levels of bribery on the posters.

We are by no means the first to attempt to reduce corruption through information campaigns (Johnsøn *et al.*, 2012; Peiffer & Walton, 2019). However, we deviate from previous approaches in two main ways: first, instead of trying to increase awareness about the negative impact of corruption, we use a social norms approach targeting the beliefs about the behaviours of others. More precisely, to avoid backfire effects of social nudges (Bicchieri & Dimant, 2019), the message displayed trends in descriptive norms (see also Mortensen *et al.*, 2019). Hence, instead of static information (e.g., ‘12 percent of South Africans bribe’), the poster conveyed dynamic trends (‘Less and less South Africans bribe’). As a second main difference from previous information campaigns, we evaluated the intervention with incentivized behavioural data within a mobile lab erected in the field. Therein, we assessed social norms and corrupt behaviour with a novel bribery game. We tested the following pre-registered hypotheses:

*H1:* Perceived descriptive social norms about bribery are lower during the Poster treatment compared to the Baseline treatment.

*H2:* Perceived injunctive social norms about bribery do not statistically differ between both treatments.

*H3:* The levels of bribery in the bribery game are lower during the Poster treatment compared to the Baseline treatment.

## Method

### *Incentivized norms assessment*

We used the incentivized norms elicitation method introduced by Krupka and Weber (2013). This method consists of scenarios in which ‘Person A’ has various choices and participants judge the frequency and acceptability of a given decision. Participants receive financial rewards for accuracy (i.e., when their evaluation matches that of another randomly selected participant). Hence, incentives exist to reveal their actual belief about the collectively shared view regarding frequency and appropriateness as opposed to their own personal judgement. The method thus consists of a coordination game to assess social norms. While incentivized norms assessment methods require more substantive explanation and instruction, they have the advantage of overcoming some of the challenges that non-incentivized measures of social norms face, such as social desirability concerns (Bicchieri *et al.*, 2014).

The current study contained three such scenarios, one of which described a bribery transaction. For each scenario, we used three social norms items to

measure both descriptive and injunctive norms. First, to assess descriptive norms, participants indicated their beliefs about the frequency of a given course of action. Second, to measure injunctive norms, participants indicated their beliefs about the social appropriateness of this behaviour. For both questions, we matched a participant's response to that of another randomly selected participant. Providing the same answer earned both participants R5 ( $\approx$  €0.3). As a third question, we asked participants for their personal appropriateness rating of the behaviour. For this question, we did not match participants' answers and provided no incentives, as it measured participants' private perceptions. Instructions on the screen extensively explained this procedure and two test questions ensured participants' understanding (see all material on OSF at [https://osf.io/ufv6g/?view\\_only=cc334f24ba8a4bab82803bcbd4c8ad4e](https://osf.io/ufv6g/?view_only=cc334f24ba8a4bab82803bcbd4c8ad4e)).

### *Social dilemma bribery game*

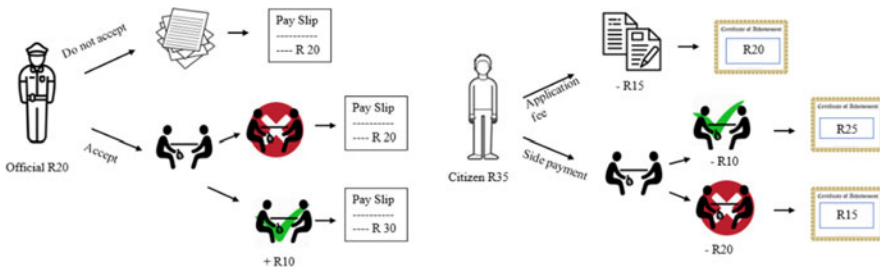
We used a corruption game that models bribery as a social dilemma to reflect the psychological decision structure that is existent in highly corrupt contexts. In this 10-player game, participants take the role of 'citizens' and 'public officials'. Reflecting commonly occurring transactions between citizens and public officials, citizens seek to obtain a certificate (e.g., a driving license) that is valuable to them (R35). A citizen can either apply for the certificate by paying the regular application fee of R15 or can pay a bribe of R10 to avoid the application fee. The public official equally has two options: either process the application and earn a wage of R20 or earn additional money by accepting the bribe of R10. Importantly, each successful bribery transaction incurs a loss of R2 on all 10 players, reflecting the social cost of bribery (see Figure 1). The payoffs are outlined in more detail below.

### *Payoffs for the citizen*

The earnings of the citizen depend on three factors: first, the citizen's own decision to pay the application fee or bribe; second, when opting to bribe, the payoff depends on whether the public official accepts the bribe; and third, the citizen's payoff also depends on all other players in the matching group (i.e., whether the other citizen/public official pairs successfully coordinate on bribing, which results in a social cost of R2 on all 10 players). If the public official accepts, the citizen receives the certificate without having to pay the application fee; at the same time, such successful bribery incurs a cost on all players in the matching group. Therefore, the citizen's final payoff is:

$$R35 - R10 - R2 - S$$

where S denotes the social cost of corruption generated by the other pairs belonging to the matching group (i.e.,  $S = R2 \times \text{Number of bribes accepted in}$



**Figure 1.** Illustrations of the corruption game modelling the social dilemma structure for the decision to engage in bribery for both the public official (left) and the citizen (right).

the other pairs of the matching group). If instead the public official rejects the bribe, the citizen has to pay the application fee of R15 and an additional cost of R5, resulting in a payoff of:

$$R35 - R15 - R5 = S$$

Finally, if the citizen decides not to offer the bribe, the citizen has to pay the application fee of R15, resulting in a payoff of:

$$R35 - R15 = S$$

#### *Payoffs for the public official*

The public official's payoffs depend on the same three factors influencing the citizen's payoff: first, on whether the matched citizen offered a bribe or not; second, on the public official's own decision to accept or reject the bribe; and third, on the successful bribery transactions by other citizen/public official pairs. If the citizen does not offer a bribe, the public official earns the wage of R20 and the final payoff is:

$$R20 = S$$

If the public official instead is offered a bribe and accepts the offer, the payoff is:

$$R20 + R10 = R2 = S$$

Finally, if the official is offered a bribe and rejects the offer, the payoff is:

$$R20 = S$$

Whatever the behaviour of the other pairs in the matching group, the public official has an incentive to accept the bribe when offered one. In this way,

the public official increases their payoff by R8. Anticipating this, the citizen has an incentive to offer the bribe. In this case, the citizen can increase their payoff by R3. Engaging in corruption thus represents a dominant strategy while leading to socially worse outcomes – a social dilemma (Köbis *et al.*, 2016). Indeed, if all five pairs refrain from corruption, the payoff for both citizens and public officials is R20. If instead all of the pairs engage in corruption, the public officials obtain R20 but the citizens obtain only R15. These relatively small amounts reflect the notion that the majority of bribery transactions in KwaZulu-Natal are petty in nature, as recent survey evidence suggests that the majority of the amounts paid for bribes do not exceed R100 ( $\approx$  €6.40; see Dobie, 2017). Moreover, we deliberately chose not to include punishment in the game in order to reflect that the likelihood of being caught and prosecuted for petty forms of bribery is very low, if not absent in South Africa (Peiffer *et al.*, 2019).

We used the strategy method (Brandts & Charness, 2011) in which each player makes a decision as a citizen and as a public official. In matching groups of 10, one decision per participant is randomly chosen and matched to that of another participant. We use a lightly framed version of the game, which means that we used the labels ‘citizen’ and ‘public official’ but referred to the bribe as a ‘side payment’ to reduce social desirability concerns. To ensure that participants understood the logic of the game, we displayed figures illustrating the structure of the game (see Figure 1) and assessed participants’ understanding using three test questions prior to the game.

### *Additional measures*

Besides standard demographic information (age, gender, education), we included three control measures. First, we assessed on which day of the month participants received their salary. This payment differs across professions and indicates the sector that the participant worked in and whether the participant was employed at all. Second, we examined whether participants recalled seeing the poster. We asked participants if they had noticed a poster that reminded them of the topic of the study (Y/N), and if yes, whether they could recall any of the words mentioned on the poster. We also included a one-item measure of perceived corruptness of the side payment (‘How corrupt do you think the transaction was?’), with answers given on a seven-point scale ranging from ‘not corrupt at all’ to ‘very corrupt’.

### *Payment method*

In addition to a show-up fee of R25 ( $\approx$  €1.50), participants received between R25 and R45 ( $\approx$  €1.50–2.73) for completing the study, which took 27.6 minutes on average. These earnings corresponded to two to five hours



of wages based on current minimum wage levels for the Extended Public Works Programme (R11/hour). Participants received their payment within 48 hours after completion of the study via Instant Money Transaction. This process sends a voucher together with a PIN to a mobile phone number via SMS. Participants could redeem this voucher without any identification at any ATM or Money Market counter, hence ensuring privacy. We deleted all mobile phone numbers upon successful payment. The payment method did not allow for the payment of precise amounts (e.g., R23.50). To determine whether the final payment would be rounded upwards or downwards, we let participants roll a die and report the result (for more details on this, see Table S1 in the Supplementary Online Materials (SOM)).

### *Treatments in the experiment*

The experiment consisted of two treatments. First, during the Baseline treatment, Research Assistant 1 (RA1; blind to the hypotheses of the study) conducted the lab-in-the-field experiment as outlined above. Data for the Baseline treatment were collected in two waves: from 16 July 2018 to 28 July 2018 (week 1) and from 5 September 2018 to 6 September 2018 (week 7). We initially scheduled this baseline treatment for the first week of the study (prior to the poster treatment) and for the fourth week (after the poster treatment). However, due to unforeseen difficulties in the data collection, we had to postpone this second assessment to the seventh week, which we separately pre-registered prior to data collection (see the section on amendment to pre-registration in the SOM).

Second, during the Poster treatment, Research Assistant 2 (RA2; blind to the purpose of the study) put up 20 posters displaying the following message: ‘Less and less people from KwaZulu-Natal pay bribes’ (see poster in Figure 2). The factual validity of this statement stems from large national surveys (see Transparency International, 2013, 2017; Ethics Institute, 2016, 2017) that show a decrease in self-reported bribery. RA2 placed the posters in several locations throughout town, mostly on signposts next to the road, as well as in other places where pamphlets are often displayed. The supplementary material shows the exact locations on a map and contains photographs of the poster sites (see OSF at [https://osf.io/ufv6g/?view\\_only=cc334f24ba8a4bab82803bcbd4-c8ad4e](https://osf.io/ufv6g/?view_only=cc334f24ba8a4bab82803bcbd4-c8ad4e)). The posters were also put up at the entrance of the building in which the mobile lab was installed. It is important to note that the posters were not on display within the lab, including the waiting area. Data for the Poster treatment were collected from 30 July 2018 to 4 August 2018 (week 2). We determined the sample size before any data analyses (for a priori calculations, see the pre-registration details on OSF).



**Figure 2.** The poster containing a descriptive norms trend message. The version in isiZulu is available on OSF ([https://osf.io/ufv6g/?view\\_only=cc334f24ba8a4bab82803bcbd4c8ad4e](https://osf.io/ufv6g/?view_only=cc334f24ba8a4bab82803bcbd4c8ad4e)).

## Results

Overall, 311 participants took part in the experiment (Baseline:  $n = 187$ ; Treatment:  $n = 124$ ). As a sign of successful randomization, we find no difference between treatment and baseline groups across main demographic variables (see Table S2 in the SOM). Moreover, the two waves of the Baseline treatment (pre- and post-poster) are largely equivalent as well, merely differing with regards to participants in the second wave being slightly younger, having obtained higher levels of education and indicating slightly more polarized views about the social injunctive norm regarding bribery (see full overview in Table S3 in the SOM).

An unforeseen anomaly occurred in the data collected on 30 July. After completing the study, one participant revealed to RA1 that most of the subjects participating in that day coordinated their responses to the descriptive norms item prior to the experiment. They were peers working in the same office and gathered information about the most profitable answers to the descriptive norms question in the past week. This means that participants coordinated on the

most common answer during the data collection of the Baseline treatment. In fact, 21 out of 24 subjects participating in the experiment on 30 July gave exactly that same answer in the descriptive norms question, earning them the maximum payoffs for that task (see Figure S1 in the SOM). Given this irregularity, we control for data stemming from that day using a dummy variable in the analyses, below referred to as ‘collusion dummy’.

### *Descriptive and injunctive norms*

Overall, we observe that the majority of respondents believe that most people pay bribes, as 60.77% indicate that more than 70% of people pay bribes. This pattern is robust to controlling for the collusion dummy of 57.49% of respondents believing that more than 70% of people pay bribes. This pattern supports the basic premise of a coordination problem in that the majority of people think that the majority of people bribe.

To test H1, predicting that these perceptions would decrease during the poster treatment, we conducted ordered probit regression analyses predicting the incentivized descriptive norm variable. With our data (i.e., a categorical dependent variable that can be ordered), this regression technique is better suited than linear regression analysis because it does not assume the same distance between categories. The ordered probit regression permits us to estimate whether there is a directional shift in the probability of observing an answer from lower to higher categories while controlling for other explanatory variables. Controlling for the data collection anomaly, we observe a significant shift towards lower perceived descriptive norms, both when only including the treatment dummy (Model 1, Table 1) and when additionally controlling for demographic characteristics (Model 2, Table 1). Hence, we find evidence that the poster reduced perceived descriptive norms about bribery, confirming the first hypothesis (see also Figure 3).

Next, we report descriptive statistics for both injunctive norm items (social and individual). First, a majority of participants (67.52%) believe that others consider bribing to be (very) socially inappropriate (68.99% when controlling for collusion). Second, the majority of participants (66.24%) also considered bribery themselves to be (very) socially inappropriate (67.94% when controlling for collusion). Both results suggest that a majority of people collectively and individually disapprove of bribery, even in corrupt societies.

To test H2, predicting no shifts in both injunctive norm items across both treatments, we again conducted ordered probit regression analyses. Table 1 depicts the results for social and individual injunctive norms. In support of H2, the findings reveal no statistically significant directional shift in the frequency of answers neither without (Models 3 and 5) nor with controlling for

**Table 1.** Regressions for the descriptive and injunctive norms. Data are presented as coefficients (SE) of the ordered probit model with robust standard errors.

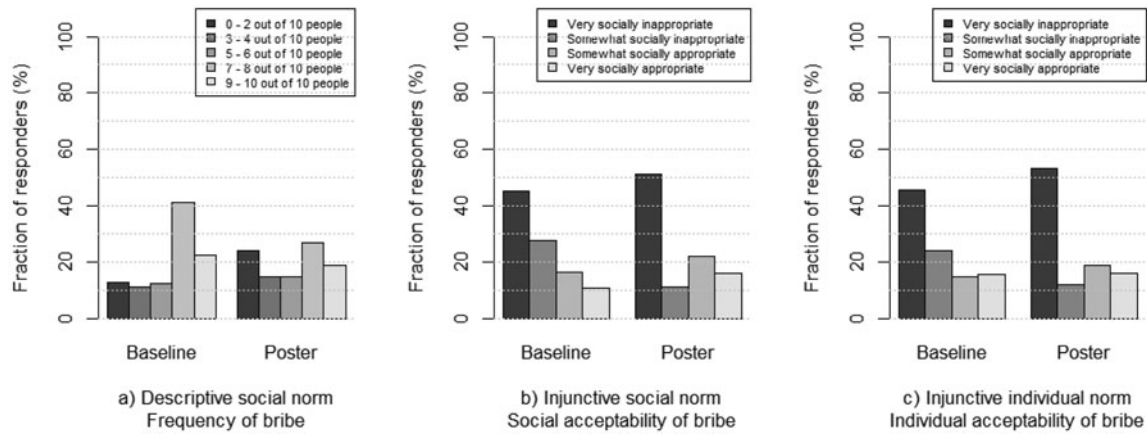
|                                     | Model 1          | Model 2          | Model 3                | Model 4                | Model 5                  | Model 6                  |
|-------------------------------------|------------------|------------------|------------------------|------------------------|--------------------------|--------------------------|
| Dependent variable                  |                  |                  |                        |                        |                          |                          |
| ordinal answer to question          | Descriptive norm | Descriptive norm | Injunctive social norm | Injunctive social norm | Injunctive personal norm | Injunctive personal norm |
| Poster treatment <sup>d</sup>       | −0.343** (0.142) | −0.354** (0.149) | 0.056 (0.144)          | 0.078 (0.154)          | −0.065 (0.143)           | −0.057 (0.152)           |
| Demographics                        |                  |                  |                        |                        |                          |                          |
| Gender (male) <sup>d</sup>          |                  | −0.084 (0.127)   |                        | 0.065 (0.134)          |                          | −0.080 (0.136)           |
| Age (in years)                      |                  | 0.001 (0.008)    |                        | −0.003 (0.009)         |                          | −0.011 (0.009)           |
| Language (isiZulu) <sup>d</sup>     |                  | 0.299** (0.133)  |                        | −0.477*** (0.144)      |                          | −0.167 (0.139)           |
| Education                           |                  |                  |                        |                        |                          |                          |
| No high school <sup>d1</sup>        |                  | −0.261 (0.179)   |                        | −0.030 (0.173)         |                          | 0.073 (0.180)            |
| Higher education <sup>d2</sup>      |                  | 0.024 (0.169)    |                        | 0.099 (0.188)          |                          | −0.141 (0.175)           |
| Income cycle                        |                  |                  |                        |                        |                          |                          |
| 3 weeks before payday <sup>d3</sup> |                  | −0.346* (0.178)  |                        | −0.2167 (0.223)        |                          | −0.285 (0.219)           |
| 2 weeks before payday <sup>d4</sup> |                  | −0.034 (0.241)   |                        | −0.322 (0.291)         |                          | −0.323 (0.258)           |
| 1 week before payday <sup>d5</sup>  |                  | −0.373* (0.197)  |                        | −0.204 (0.204)         |                          | −0.165 (0.213)           |
| No payday <sup>d6</sup>             |                  | 0.020 (0.170)    |                        | −0.300 (0.207)         |                          | −0.223 (0.192)           |
| Collusion <sup>d7</sup>             | 0.714*** (0.154) | 0.582*** (0.183) | 0.205 (0.280)          | 0.297 (0.303)          | 0.497* (0.276)           | 0.514* (0.293)           |

Table 1. (Cont.)

|                            | Model 1          | Model 2          | Model 3           | Model 4           | Model 5             | Model 6             |
|----------------------------|------------------|------------------|-------------------|-------------------|---------------------|---------------------|
| Dependent variable         |                  |                  | Injunctive social | Injunctive social | Injunctive personal | Injunctive personal |
| ordinal answer to question | Descriptive norm | Descriptive norm | norm              | norm              | norm                | norm                |
| Cut points                 |                  |                  |                   |                   |                     |                     |
| C1                         | −1.128 (0.102)   | −1.189 (0.329)   | −0.041 (0.083)    | −0.510 (0.366)    | −0.058 (0.085)      | −0.678 (0.343)      |
| C2                         | −0.709 (0.093)   | −0.767 (0.329)   | 0.492 (0.084)     | 0.041 (0.362)     | 0.432 (0.086)       | −0.182 (0.341)      |
| C3                         | −0.355 (0.088)   | −0.398 (0.327)   | 1.160 (0.102)     | 0.725 (0.358)     | 0.972 (0.098)       | 0.359 (0.340)       |
| C4                         | 0.760 (0.095)    | 0.761 (0.328)    |                   |                   |                     |                     |
| n (observations)           | 311              | 311              | 311               | 311               | 311                 | 311                 |

*Note:* Superscript ‘d’ indicates the use of a dummy variable. ‘Poster’ is the treatment dummy variable; ‘Gender (male)’ is a dummy variable with value 1 for male participants; ‘Age’ is the age of the responder in years; ‘Language (isiZulu)’ is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. ‘No high school’ is a dummy variable with value 1 for those participants that did not complete high school; 2. ‘Higher education’ is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. ‘3 weeks before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the third week from the date of participation; 4. ‘2 weeks before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the second week from the date of participation; 5. ‘1 week before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the week of the date of participation; 6. ‘No payday’ is a dummy variable for unemployed participants; 7. ‘Collusion’ is a dummy variable with value 1 for all participants that participated in the experiment on 30 July (= known incidence of collusion).

\*p < 0.10; \*\*p < 0.05; \*\*\*p < 0.01.



**Figure 3.** Distributions of answers to (a) the socially incentivized descriptive norms item, (b) the socially incentivized injunctive norms item and (c) the personal injunctive norm item for the sample, excluding the day of observation with evidence for answer coordination.

demographic characteristics (Models 4 and 6). There is instead a reduction in the frequency of the answer ‘Somewhat socially inappropriate’ in favour of all of the other answers. The parameters for the treatment dummy across all models (Models 3–6) do not significantly differ from zero, indicating that perceptions of injunctive norms did not shift.

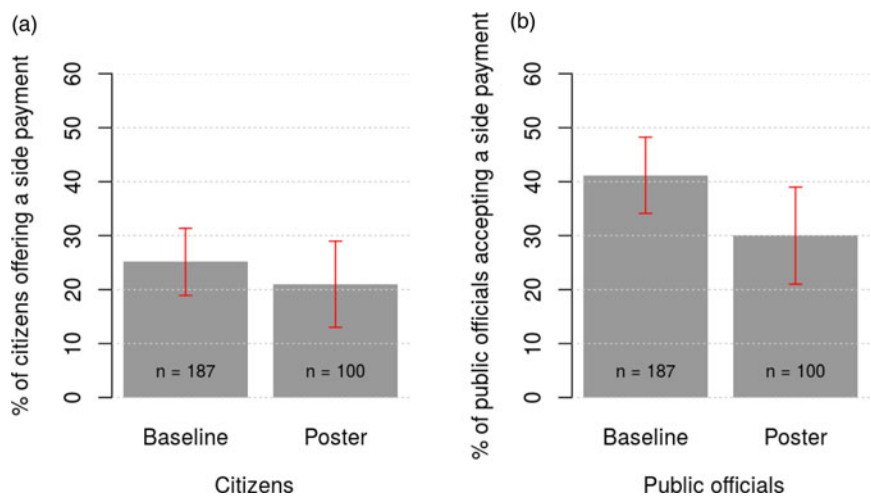
As an additional (non-pre-registered) test for potential shifts towards higher social inappropriateness of bribery during the poster treatment, we conducted Bayesian analysis. For this analysis, we dichotomized the social and individual injunctive norm items into a dummy of 0 (= (very) inappropriate) and 1 (= (very) appropriate). The results reveal Bayes factors of  $BF_{01} > 18.84$  for the social injunctive norms and  $BF_{01} > 11.99$  for the individual injunctive norms.<sup>1</sup> Together, these results constitute strong evidence (Jeffreys, 1961) that the null hypothesis of no shift is more likely than an alternative hypothesis that predicts a shift towards higher social inappropriateness during the poster treatment. Overall, the results confirm H2 and provide convergent validity for the poster treatment specifically targeting descriptive norms.

### *Bribery behaviour*

Next, we test H3, predicting that bribery levels in the corruption game drop during the Poster treatment. As Figure 4 illustrates, the percentage of subjects offering bribes (Figure 4(a)) and accepting bribes (Figure 4(b)) decreases during the Poster treatment compared to the Baseline treatment. To test the significance of these differences, we conducted binary regression analyses with robust standard errors for the day of data collection (see Table 2). For the citizens’ bribe offers, the reduction in bribery during the Poster treatment is not significant, neither when tested alone (Model 1) nor when controlling for demographic variables (Model 2). For the public officials’ bribe acceptance, the reduction of bribery during the Poster treatment is  $p = 0.062$  when analysed alone (Model 3) and  $p < 0.001$  when controlling for demographic variables (Model 4). Hence, although the reduction of bribe offers in the role of citizens is not statistically significant, we do find some evidence that is statistically significant for a reduction in bribe acceptance in the role of public officials.

Finally, Figure 5 illustrates the association between the decisions made by the participants in the roles of citizens and public officials. The choice pattern

<sup>1</sup> We conducted the Bayesian analysis in JASP (<https://jasp-stats.org>) for contingency tables under the assumption of independent multinomial sampling and used the number of participants per treatment as a fixed margin (for more details, see Jamil *et al.*, 2017). The results for the social injunctive norms indicate a Bayes factor of  $BF_{01} = 28.89$  ( $BF_{01} = 18.84$  for the subset without collusion) and the results for the personal injunctive norms indicate a Bayes factor of  $BF_{01} = 19.41$  ( $BF_{01} = 11.99$  for the subset without collusion).



**Figure 4.** Fractions of participants (a) offering a side payment in the role of citizens and (b) accepting side payments in the role of public officials across Baseline and Poster treatments.

reveals a high degree of consistency in the choices across both roles, with the majority of the participants either opting for or against bribery in both roles. Overall, we find a higher propensity towards bribery when acting as a public official compared to when acting as a citizen (see higher percentages in the ‘accept’ columns vs. in the ‘offer’ rows in Figure 5). Moreover, McNemar’s test reveals a greater propensity towards bribery when deciding as a public official versus as a citizen in the Baseline treatment ( $p < 0.001$ ). In the Poster treatment, the greater propensity for bribery as a public official (vs. as a citizen) is  $p = 0.093$  – again indicating a reduction of public officials willing to accept bribes in the Poster treatment. Overall, we find a decrease in unconditional bribery (accept/offer) of 5.8 percentage points and an increase in unconditional rejection of bribery (don’t offer/don’t accept) of 9.5 percentage points.

*Recognition of the poster*

Analysing the question of whether participants have recently seen a poster related to the topics of the survey, we observe that 39.6% (72/182) declared that they had seen a poster in the Baseline treatment and 70% (70/100) declared that they had seen a poster in the Poster treatment. Of the participant who declared that they had seen a poster when our poster was present, 92.9% (65/70) were able to recall the poster’s content. Results for the analysis without



**Table 2.** Regressions of the decisions in the bribery game. Data are presented as coefficients (SE) of the probit model with robust standard errors. Models 1 and 2 are for the citizens' decisions; Models 3 and 4 are for the public officials' decisions.

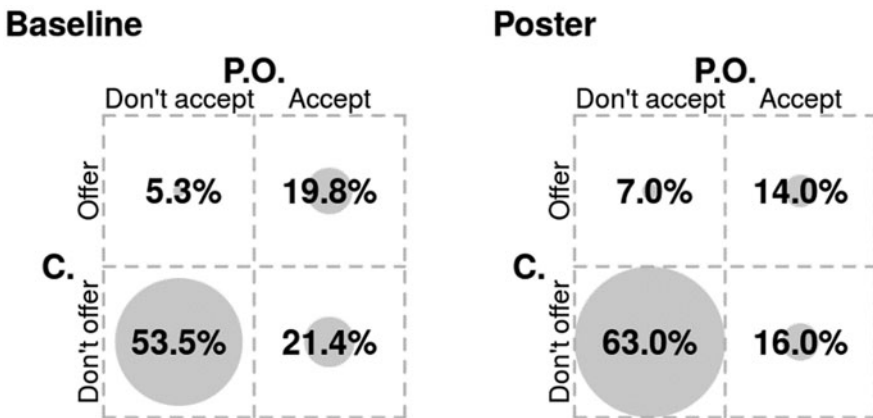
|                                     | Model 1                         | Model 2                         | Model 3                          | Model 4                          |
|-------------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Dependent variable binary choice    | Offer side payment <sup>d</sup> | Offer side payment <sup>d</sup> | Accept side payment <sup>d</sup> | Accept side payment <sup>d</sup> |
| Poster treatment <sup>d</sup>       | −0.136 (0.173)                  | −0.226 (0.184)                  | −0.301* (0.161)                  | −0.465*** (0.170)                |
| Demographics                        |                                 |                                 |                                  |                                  |
| Gender (male) <sup>d</sup>          |                                 | −0.020 (0.164)                  |                                  | −0.099 (0.155)                   |
| Age (in years)                      |                                 | 0.023** (0.101)                 |                                  | −0.008 (0.010)                   |
| Language (isiZulu) <sup>d</sup>     |                                 | −0.048 (0.174)                  |                                  | −0.242 (0.165)                   |
| Education                           |                                 |                                 |                                  |                                  |
| No high school <sup>d1</sup>        |                                 | 0.008 (0.216)                   |                                  | 0.201 (0.206)                    |
| Higher education <sup>d2</sup>      |                                 | 0.088 (0.216)                   |                                  | −0.138 (0.215)                   |
| Income cycle                        |                                 |                                 |                                  |                                  |
| 3 weeks before payday <sup>d3</sup> |                                 | 0.005 (0.278)                   |                                  | −0.284 (0.268)                   |
| 2 weeks before payday <sup>d4</sup> |                                 | −0.175 (0.324)                  |                                  | −0.269 (0.327)                   |
| 1 week before payday <sup>d5</sup>  |                                 | −0.678** (0.313)                |                                  | −0.682** (0.273)                 |
| No payday <sup>d6</sup>             |                                 | 0.224 (0.239)                   |                                  | 0.083 (0.230)                    |
| Collusion <sup>d7</sup>             | 0.596** (0.295)                 | 0.623** (0.313)                 | 0.206 (0.293)                    | 0.338 (0.306)                    |

Table 2. (Cont.)

|                                  | Model 1                         | Model 2                         | Model 3                          | Model 4                          |
|----------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Dependent variable binary choice | Offer side payment <sup>d</sup> | Offer side payment <sup>d</sup> | Accept side payment <sup>d</sup> | Accept side payment <sup>d</sup> |
| Constant                         | −0.670*** (0.100)               | −1.354*** (0.402)               | −0.223** (0.093)                 | 0.322 (0.405)                    |
| <i>n</i> (observations)          | 311                             | 311                             | 311                              | 311                              |

*Note:* Superscript ‘d’ indicates the use of a dummy variable. ‘Poster’ is the treatment dummy variable; ‘Gender (male)’ is a dummy variable with value 1 for male participants; ‘Age’ is the age of the responder in years; ‘Language (isiZulu)’ is a dummy variable with value 1 for those participants that completed the questionnaire in Zulu language; 1. ‘No high school’ is a dummy variable with value 1 for those participants that did not complete high school; 2. ‘Higher education’ is a dummy variable with value 1 for those participants that obtained a diploma higher than high school; 3. ‘3 weeks before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the third week from the date of participation; 4. ‘2 weeks before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the second week from the date of participation; 5. ‘1 week before payday’ is a dummy variable with value 1 if the participant’s wage is paid in the week of the date of participation; 6. ‘No payday’ is a dummy variable for unemployed participants; 7. ‘Collusion’ is a dummy variable with value 1 for all participants that participated in the experiment on 30 July (= known incidence of collusion).

\**p* < 0.10; \*\**p* < 0.05; \*\*\**p* < 0.01.



**Figure 5.** Association between participants' choice to offer a side payment in the role of a citizen (C.) and accepting a side payment in the role of a public official (P.O.) across Baseline (left) and Poster (right) treatments.

the subjects who did not recall the content of the poster when our poster was present are reported in Tables S6 and S7 in the SOM.

## Discussion

These results provide the first behavioural insights into the effectiveness of descriptive norms information as a vehicle for anti-corruption in the field. First, the norms nudge on posters reduced people's own perceived descriptive norms regarding bribery while leaving their perceived injunctive norms unaffected. Second, the poster treatment also affected participants' willingness to accept bribes in an incentivized bribery game – providing the first indications that norms trend messages outside of the lab can reduce both perceptions and behaviours of corruption inside the mobile lab. We discuss the findings in light of their relevance for theory and policy on the social norms of corruption.

From a theoretical perspective, the results support a 'corruption trap' view (Stephenson, 2018). For one, our results show that people perceived bribery as commonplace. This insight confirms previous views that in Manguzi (South Africa) side payments such as the one modelled in our bribery game are often considered the standard way to operate (Gitau, 2011). At the same time, we find the first evidence using incentivized norms measures that people consider bribery as inappropriate – both personally and socially. It thus appears that people often bribe not because they consider it the right thing to do, but rather because they have few other options due to the perceived

high frequency of bribery around them (Bardhan, 1997; Rothstein, 2000; Fisman & Golden, 2017b; Köbis *et al.*, 2018).

The findings also confirm previous theorizing postulating that when descriptive and injunctive norms are incongruent, descriptive norms often exert a stronger pull (Bicchieri & Dimant, 2019). Here, we replicate previous findings from the lab (Köbis *et al.*, 2015) showing that indeed the descriptive element seems to trump the injunctive element of social norms when it comes to the decision to engage in bribery. Importantly, we note that the findings suggest neither that injunctive norms do not matter at all nor that descriptive norms necessarily overshadow injunctive norms for other corrupt practices or in other social contexts. Instead, we argue that distinguishing between descriptive and injunctive norms provides a useful framework for investigating the respective social and behavioural elements of corruption in a particular context (Heywood, 2017; Hoffmann & Patel, 2017).

The findings also contribute to the growing literature on norm nudges, providing insights into how they can be used for anti-corruption. For one, by recognizing that no single monolithic corruption norm exists in a given society, anti-corruption efforts can be tailored to the social normative pressures of a particular corrupt practice. Prominent theories on social norms emphasize the importance of identifying the relevant reference network (i.e., the ‘range of people whom we care about when making particular decisions’; Bicchieri, 2016, p. 14). Here, cognizant of the importance of tailoring norms messages to the relevant reference network, we opted to refer to participants being from KwaZulu-Natal rather than South Africa. Such approaches could be extended by messages that target even more specific reference networks from which social normative pressures around corruption emanate. For example, whether public officials extract side payments also depends on the normative pressures on the office floor, stemming both horizontally from peers and vertically from superiors (Jackson & Köbis, 2018). Moreover, we focus both in the poster and in the design of the game on bribery because it entails an interactive form of corruption in which beliefs about the counterpart are of particular importance. Future efforts could examine whether similar information campaigns also have an effect on less interactive forms of corruption, such as embezzlement.

We do note, however, that merely relying on norm nudges to fight the deeply rooted behaviour of corruption does not suffice. Akin to other domains such as obesity (Oliver & Ubel, 2014), for anti-corruption, nudges alone are unlikely to solve the problem, as behavioural approaches in general should not be seen as a substitute but rather as a supplement to traditional (anti-corruption) policies (Loewenstein & Chatter, 2017). Recognizing the importance of social norms in explaining corrupt practices is essential for more traditional anti-corruption approaches to succeed. For example, the relative ineffectiveness of

many public salary increase programmes (see the systematic literature review reported in Soraperra *et al.*, 2019) in part stems from the persistence of social norms around corruption. A case in point: a salary increase programme within the tax administration in Uganda backfired because increased wages also increased social normative expectations for public officials to provide for their family, leading public officials to extract *more* bribes (Fjeldstad, 2005; Baez-Camargo, 2017).

### *Policies for lasting social norms change regarding corruption*

Our intervention targeting social norms revealed that perceived social norms and bribery inclinations regressed back to pre-treatment levels – hence the effect was temporary, which is not uncommon for nudging interventions (Frey & Rogers, 2014). To increase the chances for enduring reductions of corruption, social norms messaging campaigns should be accompanied by complementary policies. Based on previous work on social norms change, particularly promising approaches consist of: (1) community involvement; (2) information campaigns via other media channels; and (3) social network analysis. Let us briefly address some of the implications of our study for each of these approaches.

First, community meetings featuring discussions about normative practices can contribute to cascades of social norms change (Bicchieri & Mercier, 2014) – an approach that has already been successfully tested in other domains, such as voting behaviour (Banerjee *et al.*, 2011). The individual and social disapproval of corruption observed in the current study could facilitate the collective action against bribery, as it provides a breeding ground for the creation of new norms, especially if these norms are observably implemented by peers (Dimant, 2015).

Second, complementary approaches could use the immense anti-corruption potential of (free) media (Starke *et al.*, 2016). In particular, radio programmes, TV shows such as soap operas or even children's anti-corruption books could help to provide new narratives around social norms of corruption (for examples, see Pailey, 2013, 2019). These measures have been evaluated in various domains, showing promising potential even to change culturally embedded and hidden collective practices such as female genital cutting (Paluck, 2009; Vogt *et al.*, 2016) – yet empirical evidence for their effectiveness to curb corruption is lacking.

Third, to unleash the full potential of localized social norms campaigns, such efforts could be combined with social network approaches (Tankard & Paluck, 2016). Mapping and tracking information dispersion within a given social network has been proposed in recent anti-corruption policy work (Hoffmann & Patel, 2017; Jackson & Köbis, 2018), as it has shown promising potential in other domains, such as high-school bullying (Paluck *et al.*, 2016).

In sum, social nudges alone do not suffice to curb corruption, yet they can serve as an important complementary step to accompany ‘heavy lift’ policies, such as structural reforms (Sunstein, 2015; Loewenstein & Chatter, 2017).

### *Evidence-based anti-corruption*

For the design of research evaluating these and other behavioural interventions to fight corruption, several points deserve mention. First, as a method for evaluating anti-corruption policies, our study presents the use of a lab-in-the-field design with a behavioural measure of corruption. Obtaining ‘hard’ evidence for the reduction of corruption represents a thorny challenge due to its secretive nature and the high social desirability concerns (Olken, 2009). Reviewing field studies on the effectiveness of information campaigns for anti-corruption, Winters, Testa and Fredrickson in fact state that the majority of studies do not use corruption as the dependent variable, but ‘rather some observable behaviour that is assumed to affect corruption’ (Winters *et al.*, 2012, p. 234). Such indirect measures can be problematic when trying to understand the actual corrupt practices. We propose that behavioural measures such as bribery games can serve as tools to pilot test and evaluate interventions and thus contribute to evidence-based anti-corruption (Mungiu-Pippidi, 2017).

Second, we introduce a new game that models the bribery transactions as a social dilemma. Based on recent theoretical developments in behavioural science, we argue that such a game reflects the actual psychological decision-making process in a highly corrupt context more accurately than many other corruption games (Köbis *et al.*, 2016). Although bribing in the game surely differs in multiple ways from the ‘real world’, we argue that the data obtained here bear merit, at least because participants did perceive the side payment as corrupt, underlining the internal validity of the measure (see Table S11 in the SOM). Furthermore, previous research using bribery games shows a large overlap between corrupt behaviour in the lab and in the field, providing external validity (Armantier & Boly, 2012).

Third, we pre-registered the experiment in which we outlined the data collection and analysis strategy. However, several unforeseen occurrences led us to deviate from this pre-registration plan (see complete list in the SOM). Most importantly, we had to include an additional control variable due to an unforeseen coordination scheme that took place on the first day of the poster treatment. Although we instructed the research assistant to take measures to prevent such schemes from occurring and no further evidence of similar incidences exist, we cannot exclude the possibility that also during other days participants coordinated on responses prior to the study. While we argue that controlling for this day of data collection is justified in order to get the most

empirically valid answer to our key questions, the occurrence of this scheme represents a remarkable finding in and of itself.

Finally, given that our study was conducted over a relatively short time frame in a single location, a logical candidate to overcome some of the limitations is to run a full-fledged randomized controlled trial (RCT). Although RCTs could indeed potentially provide valuable new insights into the workings of social norms of corruption in the field, it is important for follow-up research to consider several famously voiced drawbacks of that approach when seeking to evaluate anti-corruption policies (Bédécarrats *et al.*, 2019; Deaton, 2010). The first main point of criticism posits that RCTs often narrowly focus on short-term impacts (Bédécarrats *et al.*, 2019). To overcome this limitation and to test the longevity of interventions, we see particular potential in adopting a long-term perspective. The use of longitudinal methods could allow us to evaluate existing approaches to changing social norms around corruption, such as whether new narratives in public media can indeed change norms around corruption (Pailey, 2019). As a second point of criticism, many RCTs neglect the mechanisms and processes that drive the effect of an intervention (Bédécarrats *et al.*, 2019). In light of the importance of dual-process models to explain the mechanisms of nudging (Oliver, 2013) and (un)ethical behaviour (Köbis *et al.*, 2019), gaining new insights into the cognitive processes of norm nudging appears especially fruitful. That is, future work could address whether the mechanism behind belief updating observed here primarily stems from an intuitive or a deliberative process. As a final critical point, RCTs ‘are subject to a host of political influences as much in their design and execution as in the dissemination of their results’ (Bédécarrats *et al.*, 2019, p. 10), making upscaling a challenging matter. In addition, research on nudging campaigns shows that the messenger of the social norms information can influence the effectiveness of the intervention. Upscaling a norm nudging campaign via government institutions could thus potentially face the challenge that the messenger is not trusted (e.g., see Stibe & Cugelman, 2016) – put differently, people might reject an official norms message campaign because it is an *official* norms message campaign (Arad & Rubinstein, 2015). When taking these recently voiced considerations into account, future policy-orientated research could thereby provide further relevant insights for anti-corruption approaches building on behavioural insights.

## Conclusion

Behavioural interventions using social nudges have traditionally steered away from tackling ‘some of the world’s biggest and most complex social dilemmas’ (van der Linden, 2018, p. 211). To fill this gap, we conducted a lab-in-the-field experiment that took on a daunting task: changing people’s perceptions about

corruption and subsequently lowering their willingness to engage in bribery with the mere distribution of posters. In light of the deeply socially entrenched character of systemic corruption and the fact that people form beliefs about corrupt practices through a multitude of channels (media, own experience, social interactions), it is a striking observation that a descriptive norms poster successfully changed incentivized social perceptions and people's willingness to engage in bribery in the subsequent game played for real money. By providing field evidence for the effectiveness of informational campaigns to change beliefs and behaviours, these results could potentially mark the first step towards an escape path from the corruption trap and illustrate the importance of behavioural approaches to anti-corruption.

### Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/bpp.2019.37>

### Acknowledgements

We thank Margarita Leib, Shaul Shalvi as well as workshop participants at the Department of Experimental Psychology at Oxford University, Department of Social Psychology at the University of Cologne, Max Planck Institute for Research on Collective Goods and the conference participants at the 2018 Advances with Field Experiment Conference (AFE), the 2019 International Meeting Series on Experimental and Behavioral Economics (IMEBESS) and the 2019 conference of Subjective Probability, Utility, and Decision Making (SPUDM) for useful comments. We also thank Marijke Bezuidenhout, Phumzani Ntuli and Phumlani Ngwenya for their help with data collection.

### Funding

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreements: ERC-StG-637915; ERC-AdG 295707) from Research Priority Area Behavioral Economics (University of Amsterdam, proposal number 201806260406). The authors declare that they do not have any conflict of interests.

### References

- Abbink, K. *et al.* (2018), 'The effect of social norms on bribe offers', *The Journal of Law, Economics, and Organization*, 34(3): 457–474.
- Andvig, J.C. and K.O. Moene (1990), 'How corruption may corrupt', *Journal of Economic Behavior & Organization*, 13: 63–76.



- Arad, A. and A. Rubinstein (2015), *The People's Perspective on Libertarian-Paternalistic Policies*, Available at: <http://arielrubinstein.tau.ac.il/papers/LP.pdf>.
- Armantier, O. and A. Boly (2012), 'On the external validity of laboratory experiments on corruption', *Research in Experimental Economics*, 15: 117–144.
- Baez-Camargo, C. (2017), *Corruption, Social Norms and Behaviours: A comparative assessment of Rwanda, Tanzania and Uganda*, Basel, Switzerland: Basel Institute of Governance.
- Banerjee, A. V. et al., (2011) 'Do informed voters make better choices? Experimental evidence from urban India', *Journal of Development Studies*, (nov), 46.
- Bardhan, P. (1997), 'Corruption and development: A review of issues', *Journal of Economic Literature*, 35: 1320–1346.
- Barr, A. and D. Serra (2010), 'Corruption and culture: An experimental analysis', *Journal of Public Economics*, 94(11–12): 862–869.
- Bédécarrats, F., I. Guérin and F. Roubaud (2019), 'All that Glitters is not Gold. The Political Economy of Randomized Evaluations in Development', *Development and Change*, 50(3): 735–762.
- Bicchieri, C. (2016), *Norms in the Wild: How to Diagnose, Measure, and Change Social Norms* 1 edition., New York, NY: Oxford University Press.
- Bicchieri, C. and E. Dimant (2019), 'Nudging with Care: The Risks and Benefits of Social Information', *Public Choice, Forthcoming*.
- Bicchieri, C., J. W. Lindemans and T. Jiang (2014), 'A structured approach to a diagnostic of collective practices', *Frontiers in Psychology*, 5: 1418.
- Bicchieri, C. and H. Mercier (2014), 'Norms and Beliefs: How Change Occurs', *The Jerusalem Philosophical Quarterly*, 63(January 2014): 60–82.
- Brandts, J. and G. Charness (2011), 'The strategy versus the direct-response method: A first survey of experimental comparisons', *Experimental Economics*, 14(3): 375–398.
- Camerer, C. et al. (2003), 'Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism"', *University of Pennsylvania Law Review*, 151(3): 1211.
- Cialdini, R. B., R. R. Reno and C. Kallgren (1990), 'A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places', *Journal of Personality and Social Psychology*, 58(6): 1015–1026.
- Cislaghi, B. and L. Heise (2018), 'Using social norms theory for health promotion in low-income countries', *Health Promotion International*, 1–8.
- Deaton, A. (2010), 'Instruments, Randomization, and Learning about Development', *Journal of Economic Literature*, 48(2): 424–455.
- Dimant, E. (2015), 'On Peer Effects: Behavioral Contagion of (Un)Ethical Behavior and the Role of Social Identity', *Journal of Economic Psychology*, 73: 66–88.
- Dobie, K., (2017) *South African Citizens' Bribery Survey*, Pretoria, South Africa.
- Ethics Institute, (2016), *South African Citizens' Bribery Survey, 2016 (Report no. 02)*. Available at: <https://www.tei.org.za/phocadownload/userupload/Citizens-Bribery-Survey-2016-FINAL.pdf>
- Ethics Institute, (2017), *South African Citizens' Bribery Survey, 2017 (Report no. 03)*. Available at: [https://www.tei.org.za/phocadownload/CBS%202017\\_29%20November%202017\\_Upload%20to%20web.pdf](https://www.tei.org.za/phocadownload/CBS%202017_29%20November%202017_Upload%20to%20web.pdf)
- Efferson, C. and S. Vogt (2018), 'Behavioural homogenization with spillovers in a normative domain', *Proceedings of the Royal Society B: Biological Sciences*, 285(1879).
- Fisman, R. and M. Golden (2017a), 'How to fight corruption', *Science*, 356(6340): 803–804.
- Fisman, R. and M. A. Golden (2017b), *Corruption: What everyone needs to know* 1st ed., New York, NY, USA: Oxford University Press.
- Fjeldstad, O.-H. (2005), 'Issue: Revenue administration and corruption', *U4 Issue 2:2005*, p.24. Available at: <http://www.u4.no/themes/pfm/Revenueissue/revenuefront.cfm>.
- Frey, E. and T. Rogers (2014), 'Persistence: How Treatment Effects Persist After Interventions Stop', S. T. Fiske, ed., *Policy Insights from the Behavioral and Brain Sciences*, 1(1): 172–179.

- Gitau, R. (2011), 'T.I.A.: This is Africa'. *Huffington Post*. Available at: [https://www.huffingtonpost.com/rosalia-gitau/tia-this-is-africa\\_b\\_534161.html](https://www.huffingtonpost.com/rosalia-gitau/tia-this-is-africa_b_534161.html)
- Goffman, E. (1969), *Stigma: Notes on the Management of Spoiled Identity*, New York, NY, USA: Simon & Schuster.
- Heywood, P.M. (2018), 'Combating corruption in the twenty-first century: New approaches', *Daedalus*, 147(3): 83–97.
- Heywood, P.M. (2017), 'Rethinking corruption: Hocus-pocus, locus and focus', *Slavonic and East European Review*, 95(1): 21–48.
- Heywood, P.M. (2014), *Routledge handbook of political corruption* P. M. Heywood, ed., New York, NY, USA: Routledge.
- Hoffmann, L.K. and R.N. Patel (2017), Collective Action on Corruption in Nigeria: A social norms approach to connecting society and institutions., pp.1–53. Available at: <https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/2017-05-17-corruption-nigeria-hoffmann-patel.pdf>.
- Jackson, D. and N.C. Köbis (2018), *Anti-corruption through a social norms lens*, Bergen, Norway.
- Jamil, T. et al. (2017), 'Default "Günel and Dickey" Bayes factors for contingency tables', *Behavior Research Methods*, 49(2): 638–652.
- Jeffreys, H. (1961), *Theory of probability*. (3rd ed.), New York, NY, USA: Oxford University Press.
- Johnson, J., N. Taxell and D. Zaum (2012), *Mapping evidence gaps in anti-corruption*, Bergen, Norway.
- Kerr, N.L. and C.M. Kaufman-Gilliland (1997), "'.. and besides, I probably couldn't have made a difference anyway": Justification of Social Dilemma Defection via Perceived Self-Inefficacy', *Journal of Experimental Social Psychology*, 33(3): 211–230.
- Köbis, N.C. et al. (2015), "'Who doesn't?" - The impact of descriptive norms on corruption', *PLoS ONE*, 10(6): e0131830.
- Köbis, N.C. et al. (2016), 'Prospection in individual and interpersonal corruption dilemmas', *Review of General Psychology*, 20(1): 71–85.
- Köbis, N.C., D. Iragorri-Carter and C. Starke (2018), 'A Social Psychological View on the Social Norms of Corruption', In I. Kubbe and A. Engelbert (eds), *Corruption and Norms – Why Informal Rules Matter*, London, UK: Palgrave Macmillan, 31–52.
- Köbis, N.C., et al. (2019), 'Intuitive Honesty Versus Dishonesty: Meta-Analytic Evidence', *Perspectives on Psychological Science*, 14(5): 778–796.
- Köbis, N.C., D. Jackson and D. Iragorri-Carter (2020), 'Social norms and corruption – recent trends in empirical research'. In A. Mungiu-Pippidi and P.M. Heywood, (eds), *A Research Agenda for Studies of Corruption*, Cheltenham, UK: Edward Elgar Publishing.
- Koelble, T.A., (2018), 'Caught Between Liberation and Liberalism', In I. Kubbe and A. Engelbert, (eds) *Corruption and Norms - Why Informal Rules Matter*, London, UK: Palgrave Macmillan, 115–132.
- Krupka, E.L. and R.A. Weber (2013), 'Identifying Social Norms Using Coordination Games: Why Does Dictator Game Sharing Vary?', *Journal of the European Economic Association*, 11(3): 495–524.
- Kubbe, I. and A. Engelbert eds., (2018), *Corruption and Norms - Why Informal Rules Matter*, Palgrave Macmillan.
- Loewenstein, G. and N. Chatter (2017), 'Putting nudges in perspective', *Behavioural Public Policy*, 1 (1): 26–53.
- Manning, M. (2009), 'The effects of subjective norms on behaviour in the theory of planned behaviour: A meta-analysis', *British Journal of Social Psychology*, 48(4): 649–705.
- Marquette, H. and C. Peiffer (2015), *Corruption and Collective Action*, Bergen, Norway.
- Mény, Y. (1996), "'Fin de siècle" corruption: Change, crisis and shifting values', *International Social Science Journal*, 48: 309–320.

- Mortensen, C. R. *et al.* (2019), 'Trending Norms: A Lever for Encouraging Behaviors Performed by the Minority', *Social Psychological and Personality Science*, 10(2): 201–210.
- Mungiu-Pippidi, A. (2017), 'The time has come for evidence-based anticorruption', *Nature Human Behaviour*, 1(1): 11.
- Nye, J.S. (1967), 'Corruption and political development: A cost-benefit analysis', *The American Political Science Review*, 61(2): 417–427.
- OECD, (2018), *Behavioural Insights for Public Integrity: Harnessing the Human Factor to Counter Corruption*, Paris, France: OECD.
- Oliver, A. (2013), 'From Nudging to Budgeting: Using Behavioural Economics to Inform Public Sector Policy', *Journal of Social Policy*, 42(4): 685–700.
- Oliver, A. (2015), 'Nudging, shoving, and budgeting: Behavioural economic-informed policy', *Public Administration*, 93(3): 700–714.
- Oliver, A. and P. Ubel (2014), 'Nudging the obese: a UK–US consideration', *Health Economics, Policy and Law*, 9(3): 329–342.
- Olken, B.A. (2009), 'Corruption perceptions vs. corruption reality', *Journal of Public Economics*, 93 (7–8): 950–964.
- Pailey, R.N. (2013), *Gbagba*, New York, NY: One Moore Book.
- Pailey, R.N. (2019), *Jaadeh*, New York, USA: One Moore Book.
- Paluck, E.L. (2009), 'What's in a Norm? Sources and Processes of Norm Change', *Journal of Personality and Social Psychology*, 96(3): 594–600.
- Paluck, E.L., H. Shepherd and P.M. Aronow (2016), 'Changing climates of conflict: A social network experiment in 56 schools', *Proceedings of the National Academy of Sciences*, 113(3): 566–571.
- Paprzycka, K., (1999), 'Normative expectations, intentions and belief', *The Southern Journal of Philosophy*, XXXVII: 629–652.
- Peiffer, C. *et al.*, (2019), 'The surprising case of police bribery reduction in South Africa', *Crime, Law and Social Change*, pp.1–20. Available at: <http://link.springer.com/10.1007/s10611-019-09843-8> [Accessed July 22, 2019].
- Peiffer, C. and G. Walton (2019), *Overcoming Collective Action Problems through Anti-corruption Messages*,
- Perkins, H.W. and H. Wechsler (1996), 'Variation in Perceived College Drinking Norms and its Impact on Alcohol Abuse: A Nationwide Study', *Journal of Drug Issues*, 26(4): 961–974.
- Persson, A., B. Rothstein and J. Teorell (2012), 'Why anticorruption reforms fail—Systemic corruption as a collective action problem', *Governance*, 26(3): 449–471.
- Pinker, S., M.A. Nowak and J.J. Lee (2008), 'The logic of indirect speech', *Proceedings of the National Academy of Sciences of the United States of America*, 105: 833–8.
- Rose-Ackerman, S. (2006), *International handbook on the economics of corruption* S. Rose-Ackerman, ed., Cheltenham, UK/Northampton, MA, USA: Edward Elgar.
- Rothstein, B. (2000), 'Trust, Social Dilemmas and Collective Memories', *Journal of Theoretical Politics*, 12(4): 477–501.
- Rothstein, B. (2011), 'Anti-corruption: The indirect "big bang" approach', *Review of International Political Economy*, 18: 228–250.
- Rothstein, B. and A. Varraich (2017), *Making Sense of Corruption*, Cambridge, UK: Cambridge University Press.
- Scharbatke-Church, C. and D. Chigas (2016), *Facilitation in the Criminal Justice System*, Boston, Massachusetts. Available at: [fletcher.tufts.edu/IHS](http://fletcher.tufts.edu/IHS).
- Schram, A., J. Di Zheng and T. Zhuravleva (2019), *Contagious corruption: cross-country comparisons*, Florence, Italy.
- Soraperra, I. *et al.*, (2019), *A market for integrity An experiment on corruption in the education sector*, CREED Working Paper, Amsterdam, The Netherlands.

- Starke, C., T.K. Naab and H. Scherer (2016), 'Free to expose corruption: The impact of media freedom, internet access, and governmental online service delivery on corruption', *International Journal of Communication*, 10: 4702–4722.
- Stephenson, M.C. (2018), *Corruption as a self-reinforcing "trap": Implications for reform strategy*, QoG Quality of Government Institute Working Paper.
- Stibe, A. and B. Cugelman (2016), 'Persuasive backfiring: When behavior change interventions trigger unintended negative outcomes', In *Lecture Notes in Computer Science*. pp. 65–77. Available at: [https://link.springer.com/chapter/10.1007/978-3-319-31510-2\\_6](https://link.springer.com/chapter/10.1007/978-3-319-31510-2_6)
- Sunstein, C.R. (2015), 'On Interesting Policymakers', *Perspectives on Psychological Science*, 10(6): 764–767.
- Tankard, M. and E.L. Paluck (2016), 'Norm as a Vehicle for Social Change', *Social Issues and Policy Review*, 10(1): 181–211.
- Thaler, R. and C. Sunstein (2008), *Nudge: Improving decisions about health, wealth, and happiness*, Yale University Press, USA.
- Transparency International. (2013), *Global Corruption Barometer*, Transparency International. Available at: <https://www.transparency.org/gcb2013/report>
- Transparency International. (2017), *People and Corruption: Citizens voices from around the world – Global Corruption Barometer*, Transparency International. Available at: [https://www.transparency.org/whatwedo/publication/people\\_and\\_corruption\\_citizens\\_voices\\_from\\_around\\_the\\_world](https://www.transparency.org/whatwedo/publication/people_and_corruption_citizens_voices_from_around_the_world)
- van der Linden, S. (2018), 'The future of behavioral insights: on the importance of socially situated nudges', *Behavioural Public Policy*, 2(2): 207–217.
- Vogt, S. et al. (2016), 'Changing cultural attitudes towards female genital cutting', *Nature*, 538 (7626): 506–509.
- Winters, M.S., P. Testa and M.M. Fredrickson (2012), 'Using Field Experiments to Understand Information as an Antidote to Corruption', In D. Serra and L. Wantchekon, (eds), *New Advances in Experimental Research on Corruption*. Emerald Group Publishing Limited, 213–246.
- Zhao, H., H. Zhang and Y. Xu (2017), 'Effects of perceived descriptive norms on corrupt intention: The mediating role of moral disengagement', *International Journal of Psychology*.