

Social Distance in Deceptive Behavior: Experimental Evidence from Malawi

David Cesar Heymann*, Pedro Rey Biel†

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Abstract

We study the unique role of social distance in determining deceptive behavior, independent of other confounding factors such as information asymmetries. In this experiment, confederates of three different ethnicities, under the same informational conditions, take bicycle taxi rides in Malawi, where drivers have two opportunities not to adhere to social norms of honesty - by overcharging or outright stealing by not returning back with change. We find that social distance affects fraudulent behavior per se, increasing the charged price by 11%. Using the outright stealing measure, we test for whether stakes affect deceptive behavior, and we do not find significant results. We find evidence that moral priming affects cheating, as routes that have destinations with moral connotations, such as churches, hospitals, and schools present fraud 18% less frequently than routes without moral connotations and, in these routes, discrimination in overcharges among different ethnicities disappears. Our results imply that in aid programs in developing countries, fraud may be reduced if the identity of the agents interacting with the locals is carefully chosen and the purposes of the aid are given proper moral connotations.

Keywords: Social distance, fraud, deceptive behavior, development, field experiment, Malawi.

JEL: D90, D91, 012, 017

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*Corresponding Author. University of Pennsylvania. E-mail: dceshey@sas.upenn.edu

†ESADE Business School, Ramon Llull University. E-mail: pedro.rey@esade.edu

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1 Introduction

Economic theory is built on the assumption that payoff maximizing agents act selfishly, and generally do not have preferences about the welfare or identity of others. As such, economic agents will incur in deceptive behavior as long as it is self-beneficial. In this paper we show that the social distance between the agent and who suffers from deceptive behavior is an isolated factor affecting the prevalence and extent of deceptive behavior. Our field experiment complements the seminal design of Balafoutas et al. (2013). However, our experiment allows us to disentangle whether individuals discriminate in their deceptive behavior towards others based on social distance from informational asymmetries which make engaging in deceptive behavior towards those with whom there exists higher social distance easier. Separating both effects is important since in a world where the frequency of international and interracial interaction is increasing (Tuch et al. (1999), WTO, (2018)) it allows us to understand whether preferences across groups translate into damaging behavior towards them, independently of informational conditions.

In our experiment, customers from three different ethnicities elicit a price from the drivers of a bicycle taxis in Lilongwe, the capital of Malawi. Once the ride is done, they pay for the service with a bill of a significantly larger face value than the price of the ride. In case the driver does not have change, he is asked to come back to the location soon after changing the bill. This allows us to study cheating via two measures, a ‘soft’ cheating via price, and a ‘hard’ cheating via stealing the change. Importantly, our script is designed such that all our confederates, irrespective of their ethnicity, show the same level of information about the location and the potential charges, allowing us to separate social distance from information asymmetries.

Most of the previous literature on deception has not studied the effect of social distance. Previous literature has ascertained deception behavior occurs. For example, Azar et al. (2013) found that 66% of restaurant customers in Israel that received extra change did not return it. Farrington and Kidd (1977) found, when asking random people on the street whether they had dropped money on the ground, that 37% falsely claimed they did. A similar pattern has also been detected in other contexts such as students falsely claiming the amount of copies they made using a copy-machine (Yuchtman-Yaar and Rahav (1986)), or bus passengers keeping the excess return from bus drivers (Goldstone and Chin (1993)). An extensive review of 63 lab experiments by Rosenbaum et al. (2014) finds consistent evidence across studies for the presence of unconditional cheaters and non-cheaters, and that truthful behavior can be influenced by monitoring and perceptions of lying costs. Importantly, none of these studies address whether social distance affects deceptive behavior.

Social distance is a powerful factor that has been shown to have an impact in a wide array of other social phenomena. For example Bickman (1971) examines ethnic differences in offering assistance and finds that individuals belonging to different ethnicities supply less help to individuals belonging to different ethnicities than themselves. A field experiment by Page and Moss (1976) found people engage in less criminal behavior towards people in closer social proximity to them. However, when it comes to the field of fraud in economic transactions, social distance had not been considered factor per se. Alesina and La Ferrara (2000) show that individuals from more ethnically diverse communities in the United States participate less in community action, hypothesizing that this is driven by a dislike of cooperation with people from another group. Related evidence comes from Koopmans and Veit (2014), who show that individuals from more ethnically diverse parts of Berlin are less likely to return lost letters. Importantly though, they do not find evidence for discrimination of individuals with Turkish roots by native Germans, and the other way around.

The studies of Ackert et al. (2011), non-monetary rewards. and found that agents lie more when they are closer, as the need to manage social image is more important. DePaulo and Kashy (1998) conducted a field experiment in which people recorded the amount of lies they told during a day and to whom. The authors found that individuals tell less lies on average to people they feel close to and that they also feel more uncomfortable when lying to those people. However, none of these studies address deception in economic transactions.

Differences in wealth have received attention as a determinant of deceptive behavior. Gneezy (2005) argues that individuals are not only maximizing their own utility when engaging in untruthful behavior, but that they are also concerned about the harm they cause to others. Hence, when it comes to untruthful behavior regarding monetary amounts, the other person’s wealth is considered by the potential deceiver. At the same time, perceived wealth is necessarily something subjective and hence, the perception of the other party’s wealth impacts the engagement in deceiving behavior. Gneezy (2005) shows in his article that when there is a discrepancy between people’s wealth in a relationship, the decision maker is more likely to lie to people who are wealthier. Our experimental design addresses this by ensuring our confederates have similar social backgrounds, education levels, dress similarly, and keep to high hygiene standards, therefore presenting homogeneous social circumstances,

Previous experimental work has been done on the effect of stakes on deceptive behavior. Fischbacher and Föllmi-Heusi (2013) and Conrads et al. (2014) find that people in general lie more as stakes increase. Yuchtman-Yaar and Rahav (1986) find that higher stakes increase deception in women, and decrease it in men. Given the mixed evidence, we provide additional data, but are unable to find significant results. On the effect of moral nudging on deception, Capraro et al. (2018) et. al find moral nudging increases prosocial behavior and charitable donations. Our contribution relies in examining moral nudging in the context of deceptive behavior.

The key contribution of this paper is that social distance is a key determinant, per se, of deceptive behavior in economic transactions. Furthermore, we find that the moral character of the destination of the ride reduces the likelihood of fraud. When we divide rides by destination - with clinic, schools, and churches being ‘moral’ ones, and businesses being standard ones, we find the ‘moral’ destinations present a lower rate of fraud. We do not find significant results in the analysis we run on stakes. These results may have a use providing guidance on potential ways to avoid or reduce fraud at policy delivery end points, via having end point providers be of a similar ethnicity, or, when possible, using places with moral connotations for policy delivery.

2 Experimental Design and Procedures

Instructed passengers from three different ethnicities take a ride with a bicycle taxi operator in Lilongwe (‘driver’ hereafter). At the beginning of the ride, the passenger states the destination, and asks for a price for the trip. We select hyper-local destinations, that a typical outsider would be unfamiliar with, (e.g. tiny neighborhood churches, local subsistence level convenience/hardware stores). During the ride, all confederates state that they are from another city, and no data is collected anywhere where confederates might be recognized (e.g.their neighborhoods). At the end of the ride, the passenger pays the pre-agreed price with a large bill the driver is unlikely to have change for. The driver is then asked to get change for the bill and return with it to give it to the passenger. There are two steps at which this setup ensures that the driver has the chance to default on the social norm of honesty and escape with the substantial excess change at minimal

risk of detection, or adhere to the norm and return the money. First, the driver could engage in ‘subtle’ fraud, via overcharging. This can happen ex-ante, by setting a price above market, which we use as the main measure for deception, or ex-post, by attempting to overcharge after setting the price, when given the change - which, as we will discuss later, we leverage as a robustness check. Second, the driver could engage in ‘stark’ fraud, by taking the chance to leave without returning the excess change. Throughout the experiment, subjects are not aware of the participation in the experiment. For a more detailed explanation of the procedures, see Appendix A.

Our treatment structure is presented in Table 1: drivers are given the choice whether to return the excess change for stakes of varying size and different ethnicities of passengers. By stakes of varying size we mean that different passengers pay with bills with different face value so that the excess money in play for the driver varies. As a measure of social distance, we leverage the ethnic makeup of Malawi, and let confederates from three different ethnic groups take the rides (Chewa (Malawian-majority), Tumbuka (Malawian minority), and Caucasians), while holding constant their outer appearance in terms of clothing and accessories. We have two stakes, which we also randomize at each ride. the 500, and the 2,000 Kwacha bills. The treatment structure is summarised in table 1.

The stakes we use, of 500MWK and 2000MWK are equivalent to about 0.62€, and 2.48€ respectively. To put these numbers into context, one kilo of the local staple food maize is traded at about 250 MWK, or 0.31€. Furthermore, given that using the World Bank’s Poverty Headcount Ration 71.4% of the population was under the \$1.90 threshold, the stakes are substantial even for the low-stake treatment. According to the Malawi Integrated Household Survey IHS3 (National Statistical Office, 2012), on average, bicycle drivers report a daily income of 324 MWK (1.51€ at the time of the survey), with a mean income of 180 MWK (0.84€).² Interestingly, the sampled households operating bicycles disproportionately fall into the upper two quintiles of the consumption distribution (47%), indicating the relative profitability of the business (authors’ calculations based on IHS3).

Ethnicity / Stakes (MWK)	500	2,000	Total
Malawian-Majority	68	66	134
Malawian Minority	68	66	134
Caucasians	68	66	134
Total	204	198	402

Table 1: Sample Description

The choice of ethnicities of the confederates is an effective way to proxy for social distance, as ethnic differences between Chewa, Tumbuka, and whites are salient in Malawi, and easily identifiable. Furthermore, upwards of 90% of the population is Chewa in the areas we analyze, and therefore, the driver the confederates interact is with a high degree of certainty Chewa.

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We replicate Balafoutas et al. (2013) in their methodology of letting groups of three confederates

²It is worth noting inflation in Malawi has averaged at 20.4% between 2011 and 2015 (World Development Indicators, 2017), explaining the differences in Euro value.

³We restrict ourselves to male-male interactions only, one of the reasons being that this occupation is almost exclusively run by men. Furthermore we let passengers be a man at all times so that gender differences do not play any role in the experiment. In this way we are able to obtain a representative large enough sample so that the results are representative for a male-male interaction.

(one Malawian-majority, one Malawian-minority, one Caucasian) walk to a taxi stand with one individual every five minutes. Throughout time we also randomize the order in which confederates approach the taxi stand. In this way, the first driver does not see subsequent potentially unusual passengers. This procedure is repeated at every route, an average of almost 8 times per day of data gathering. We carefully choose destination points to ensure that drivers deceive because of an a-priori preference for deception, and not because they are unable to find a place to change money in a reasonable time, and thus face a high inconvenience of being honest. These are more important than the location of the starting point (so it can be easily adjusted to fit the scenario), because they have to satisfy two requirements: the driver must be able to get the change from a place close by but at the same time he has to exert at least some effort to get change.

Our experiment is designed to isolate social distance from information asymmetries. There are a number of steps undertaken to guarantee this. First, we select destinations that are not frequented by tourists. Bicycle taxis serve a poor demographic, and are mainly found in places not at all frequented by tourists – namely, slums or slum-like areas. We select highly localised destinations, such as local small churches, schools, hospitals, or businesses, which a highly unfamiliar person would not choose. Second, we hire confederates with a breadth of experience in Malawi. All confederates including the white one have lived in Malawi for over a decade and is highly familiar with bicycle taxis, avoiding gestures of unfamiliarity with how this mode of transport operates, and thus sending subtle signals of high information. Third, and most importantly, our script (Attached in Appendix B) has confederates quote a price, which is either the market price, or a slightly under market price. This is done to signal familiarity with the mode of transport, and is the clearest signal that all of our confederates have the same information.

We introduce a novel measure to test whether the mechanism outlined by Balafoutas et al. (2013)- that agents with less information get cheated more - is present in our analysis. We have our confederates predict whether they think that on a given ride they have been overcharged, ranking the likelihood they have been overcharged from 1-5. If they were able to perfectly predict cheating, they would predict 1 every time they paid the fair price, and 5 every time that they were overcharged. If Balafoutas et al. (2013) are correct, we would expect the white confederate (presenting the higher social distance) be less aware of cheating. We find our white confederate not only is not worse at predicting deception, but in fact better, showing that in our experiment there is no underlying information asymmetry biasing our results.

There are two key concerns on the robustness of this measure. First, there is a concern that perhaps the white confederate might be able to detect fraud better, because he gets cheated with more intensity (i.e. charged higher prices). However, if the mechanism outlined by Balafoutas et al. (2013) is correct, this should not matter, as it is precisely because they are less informed that the confederates with greater social distance get charged more. Another concern, which is more troublesome, is that if the white confederate gets cheated more, he might have more chances to learn from being cheated. We find no evidence of this, as the frequencies of cheating are not significantly different across ethnicities.

We furthermore ensure that our experiment excludes situations where the same driver is a subject multiple times. It may be that drivers change their behavior if they are faced with the unusual choice of returning excess change multiple times. However, we address this by mapping a unique route for each observation - our confederates never take the same route twice. Given that in Malawi, drivers are licensed for a particular station, this insures us considerably against this issue. As with Balafoutas' experiment, who dismiss repeated interaction concerns as a large issue,

as there are many service providers, it is not the case bicycle taxi drivers attempt to give phone numbers or taken steps to make repeated contact with our confederates. However, to insure that there is no asymmetry in the possibility of repeated interaction, our confederates are instructed to also tell the bicycle drivers, that they are only in the city in which the experiment is being conducted ‘for a couple of days’. Then we see if there are any differences in the price agreed upon before this information was volunteered, and the one charged at the end of the ride, when this information is available to the driver. As we shall see, this information has no effect on fraud.

As an aggregate test, we can also see whether behavior structurally changes over time, which would be an indication of information spreading. We control for whether prices our confederates face increase with time, and we find that is not the case. Finally, drivers are commonly organized in the aforementioned associations by area stops which maintain a rotation system (Lindström, 2014). This, combined with the length of the rides, and that the different confederates approach the bicycle taxi stand with only 5 minutes difference, insures us from concerns about meeting the same driver twice.

Our experiment also takes measures to ensure that social distance is not proxying for economic distance. However, in our experimental design, we take pains to ensure that all our confederates present a similar level of wealth. Our confederates are all university educated, and middle class, for Malawian standards. They all dressed similarly for the experiment – and to track the distance of their rides, carried a relatively modern cell-phone, also signaling wealth. They all kept to high hygiene standards – something difficult to do in the slum circumstances of bicycle taxi drivers. All in all, they signaled being from starkly different socio-economic circumstances compared to the bicycle taxi drivers, and highly homogeneous social circumstances among the confederates. Our confederates were also all of the same age, and size, to avoid further omitted variable concerns.

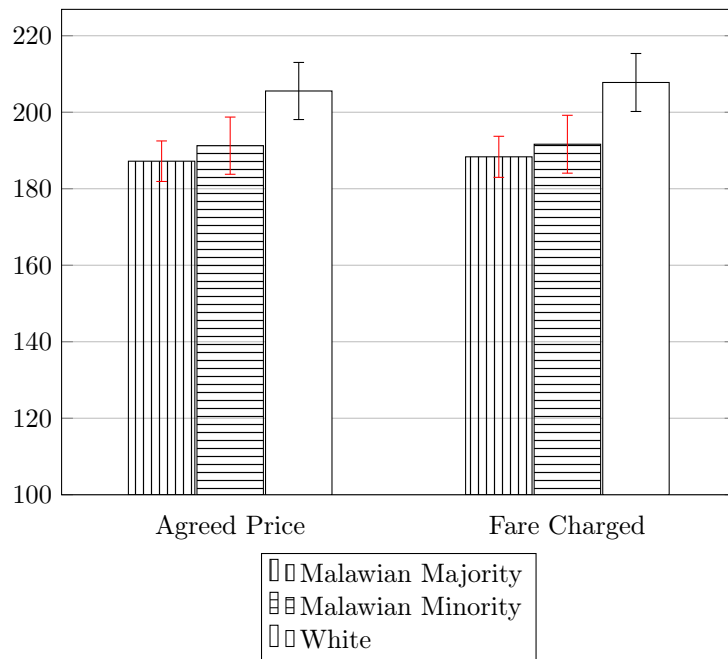
Lilongwe lends itself as an adequate location for the purposes of this study. The city is organized into numerous ‘Areas’ (numbered from 1 to 57) of different sizes and degrees of self-containedness. These areas have been numbered consecutively in the early days of Lilongwe’s growth, but this has later been changed, resulting in, for example, Area 37 lying between Area 1 and 3. While some areas, especially in the city center, have the character of an urban agglomeration, others are purely residential or contain government buildings. Within several areas, there is no other form of regular public transport than bicycle taxis. The areas are connected by major roads radiating out from the city center. For our study, we identified stretches of road of approximately 1 km length and flat profiles, leading from crossroads in residential areas to public points like major crossroads, markets or other residential houses. While 76% of our observations come from Lilongwe, under the impossibility of reaching our sample size objectives merely with observations from Lilongwe, we have also collected data in other Central Region urban areas: Mchinji, Salima, and Mponela. These are roughly the size of one to three Lilongwe districts, and share their self-containedness, lending themselves well to the experimental set up. Using data from different cities should not affect the results of the experiment, as the level of randomization is at stakes, and ethnicity, and the experimental set-up where the confederates take the same routes at the same times, guarantee minimal time and place effects on the data.

3 Results

Result 1: Cheating increases with social distance.

Table 2 presents the price demanded by the drivers from the confederates, and the price charged at the end of the ride, by treatment. We observe a substantially higher price charged to the white confederate than the to the other two relevant ethnicities. On average, the white confederate gets quoted 18.34 kwachas more per ride, and pays 19.43 kwachas more per ride. That represents a markup of 9.8%, and and 10.3% respectively.

Table 2: Descriptive Statistics



We now turn to regression analysis to confirm the results. These regressions are summarized in Table 3. We estimate the agreed price between the drivers and confederates, the fare charged, and whether the driver came back with change on the ethnicities, under a set of controls. Using our subtle measure (columns 1 and 2) we find that social distance has a significant, and substantial impact on the price drivers ask for, with the group with the greatest social distance being charged 11% more than the group with the least social distance. Formally, this implies that the utility functions of agents, where m is money, c is cheating and d is social distance, are $u(m, c(d))$ not $u(m, c)$ - therefore, the social distance of their counterpart affects the disutility associated with cheating.

We also find similar results in our ‘Agreed Price’ versus ‘Fare Charged’ regressions, indicating that offering information leveling the perceived probability of repeated interaction, has no effect on the results. Our regression specification allows us to control for potential contamination, which we find is non-existent, and for the location on the ride.

Table 3: Estimated effect of ethnicity on deceptive behavior

	(1)	(2)	(3)
	Agreed Price	Fare Charged	Change Returned
	Subtle Measure 1	Subtle Measure 2	Stark Measure
White	19.05893** (6.999412)	20.2522** (7.077868)	-.0148148 (.010528)
Malawian Minority	4.43006 (7.00711)	3.738125 (7.085653)	-.0074627 (.0105475)
Confederate Order	-.5748702 (3.499517)	-1.156059 (3.538742)	
Ride of the Day	-.8515383 (1.053564)	-.8345029 (1.065373)	
Day Fixed Effects	-1.227549 (.8529558)	-1.556313 (.8625165)	
Location: Lilongwe	39.89123*** (10.08424)	37.94545*** (10.19727)	
Constant	172.4551*** (17.5026)	178.9845*** (17.69878)	1*** (.0074722)
<i>N</i>	402	402	402

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

Using our 'stark' cheating measure (column 3) we do not find significant differences in cheating. However, it is worth noting, that we only had 3 instances of drivers not coming back with change out of 402 - over 99% of drivers came back with change. This makes inference less straightforward, as the sample where fraud occurs is very small. The extremely small percentage of drivers cheating in the 'stark' measure, makes testing whether social distance matters more as stakes increase not feasible.

Disentangling Social Distance and Information.

We undertake a set of tests to ensure that we are measuring the effect of social distance, independently from confounding effects such as information asymmetries, differential opportunities across ethnicities to learn from fraudulent interactions, or location effects.

We run two key regressions summarized in Table 4. In column 1, we regress the confederate’s predictions on a 1-5 scale predicting the likelihood that the drivers would come back with the change, with one being least likely to cheat, and 5 being most likely, on whether the driver actually comes back, and a set of controls. In column 2, we regress the confederate’s predictions on a 1-5 scale predicting the likelihood that the drivers would overcharge, with one being least likely to overcharge, and 5 being most likely, on whether the driver actually comes back, and a set of controls.

Table 4: Estimated effect of deceptive behavior on predictions of deceptive behavior

	(1)	(2)
	Prediction on Change Back	Prediction on Fair Price
	Stark Measure	Subtle Measure
Received Change Back	-.7991402*	
	(.3930771)	
Overcharged		.918298***
		(.0936795)
Confederate Order	-.0605825	-.0188649
	(.05952)	(.0529859)
Ride of the Day	-.0104832	-.0180583
	(.0194382)	(.0159571)
Day Fixed Effects	-.0120029	-.034839**
	(.0137655)	(.0130226)
Location: Liliongwe	-.0536637	-.0111665
	(.1629469)	(.1532356)
_cons	2.38298***	1.686162***
	(.4933996)	(.2606566)
<i>N</i>	197	399

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

We find strong evidence that confederates can, indeed, predict whether they will be cheated, with significant results in both our stark and our subtle measure. The confederates are able to predict when the driver is not going to come back with change. As table 4 shows, on the scale from 1-5 predicting the likelihood they would get cheated, with 1 being least likely to get cheated, and 5 being most likely, confederates rate interactions where the driver failed to come back 0.8 points higher than interactions where the driver comes back. On the same scale, but for whether they are overcharged, confederates rate interactions where they are overcharged 0.918 points when they are cheated. It is worth noting that for honest interactions the average of this measure is 1.68, so confederates accurately rate honest interactions, while for dishonest interactions the average is 2.6.

This implies that when they are cheated confederates still rate the interaction closer to 1, which is full confidence in the honesty of the transaction, than 5, indicating drivers cheat in ways that arouse only limited suspicion.

We are also able to break these results down by ethnicity. Table 5 presents the results of the regression of the confederate's predictions on whether they get overcharged, with each column summarizing the regression results for one of the three ethnic groups.

Table 5: Estimated effect of deceptive behavior on predictions of deceptive behavior by ethnicity

	(1)	(2)	(3)
	Prediction on Fair Price	Prediction on Fair Price	Prediction on Fair Price
	Malawian Majority	Malawian Minority	White
Overcharged	.6093744*** (.1536464)	.4825219*** (.0962869)	1.460721*** (.1849291)
Confederate Order	.0295853 (.0871518)	.0367603 (.055149)	-.1350068 (.1026777)
Ride of the Day	-.0023437 (.0253924)	-.0125592 (.0159887)	-.0369917 (.0321815)
Day Fixed Effects	-.0421417* (.0207941)	.0087684 (.013382)	-.0579881* (.0262316)
Location: Lilongwe	-.0091599 (.2468216)	.2328384 (.1544295)	-.1417444 (.3056065)
_cons	1.616219*** (.4346363)	.8075442** (.2540212)	2.485078*** (.5236723)
<i>N</i>	133	133	134

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

For the confederates' predictions on whether the driver will come back with the change, there is some potential for them not noting the prediction at the adequate time - between the handing of the change, and before the driver comes back. However, the main measure of whether the price is fair, is circled before the drivers know what the others have been charged, and therefore, is highly robust.

We find that confederates can predict to a large extent whether they are cheated, and that the white confederate tends to be best at predicting (significantly better than the Malawian Minority). In table 5, we can observe that the spread on the 1-5 scale between interactions where the confederate is cheated vis-a-vis ones where he is not is of 1.46 for the white confederate as opposed to 0.61 and 0.48 for the Malawian majority confederate and the Malawian minority confederate, respectively. We also find he is more suspicious - assigning the highest probability of unfair prices in rides where he is actually not overcharged. That he is most suspicious can be shown by the following regression, summarised in Table 6, where, controlling for cheating, we regress the predictions of confederates in rides where they are not cheated, on ethnicity. We find the white confederate is the most suspicious. Indeed, for a given ride where the confederate is not cheated the white confederate rates the ride 0.4 points higher in the 1-5 scale than the Malawian majority confederate.

Table 6: Estimated effect of ethnicity on predictions of deception

	(1)	(2)
	Prediction on Fair Price	Prediction on Fair Price
Overcharged	.8911627*** (.0904896)	.8971161*** (.089213)
Malawian Minority	-.2547298* (.1028947)	-.2494749* (.101109)
White	.3989519*** (.1028091)	.4074664*** (.1010917)
Confederate Order		-.0252412 (.050488)
Ride of the Day		-.0177748 (.0151777)
Day Fixed Effects		-.0351125** (.0123867)
Location: Lilongwe		-.0081506 (.1457516)
_cons	1.205574*** (.0773985)	1.650655*** (.2532372)
<i>N</i>	399	399

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

This is important evidence against the notion of Balafoutas et al. (2013) that it is informational asymmetries that explain why groups suffer more or less fraud. Indeed, in this case, the white confederate - the one with the greatest social distance, is most able to tell whether he is being cheated. This seems to point towards the fact our result is driven by differences in social distance and not by the confederate being in possession of less information. Balafoutas et al. (2013) specifically mention that "conveying to an expert seller the impression of possessing relevant information" might alleviate cheating. However, in our paper, neither doing so, or actually having more or better information and awareness of the situation, eliminates fraud.

Table 7: Estimated frequency of cheating

	(1)
	Frequency Overcharged Subtle Measure
White	.0554048 (.0570254)
Malawian Minority	.0203919 (.0571316)
_cons	.2878788*** (.0404743)
<i>N</i>	399

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

We can furthermore refute the idea that it is different opportunities to learn that explain the higher ability for the Caucasian confederate to predict cheating. In table 7, we regress the frequency of cheating on ethnicity. As Table 7 shows, the white confederate does not get cheated significantly more often than the other confederates. This strengthens the idea that it is not, in fact that asymmetries in information are unlikely in this case.

A final robustness check worth including, concerns whether it is indeed not problematic to obtain data from outside Lilongwe. In table 8, we run our analysis with only the data from Lilongwe, and again, we find similar results to the ones using our full sample, with the same coefficients being significant.

Table 8: Lilongwe Robustness

	(1)
	Price Charged Subtle Measure 2
White	20.81019* (8.284963)
Malawian Minority	2.861298 (8.264983)
Confederate Order	-.4850661 (4.141891)
Ride of the Day	.3893041 (1.240049)
Experiment Day	-.7777905 (.8915472)
_cons	203.2392*** (13.15421)
<i>N</i>	306

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

While we can see the prices are somewhat higher in Lilongwe, we can observe that the coefficients on all our variables are not significantly altered by omitting the observations from outside Lilongwe.

Result 2: Cheating increases with stakes.

We do not find strong evidence that cheating increases with stakes. As specified by the experimental design, we test for this hypothesis using only our stark measure - there is no clear way to use the ‘subtle’ measure when addressing this hypothesis - and the fact that only three drivers cheated out of four hundred and two makes inference difficult, even if those three cases occurred all in the high stakes treatment. We regress whether the driver came back with change on the stakes of the transaction, and do not find significant results. The regression results are summarized in table 9.

Table 9: Estimated effect of high stakes on deceptive behavior

	(1)	(2)
	Received Change Back	Received Change Back
	All	Non Malawian-majority
Stake 2000	-.0151515 (.0085739)	-.0225564 (.0128275)
_cons	1*** (.0060173)	1*** (.0090365)
<i>N</i>	402	268

* indicates that the estimate is significant at a 5% significance level.

** indicates that the estimate is significant at a 1% significance level.

*** indicates that the estimate is significant at a 0.1% significance level.

Standard errors are provided in parenthesis.

Going back to our formal model, this would imply that we cannot say that the following - i.e. that the utility associated with an extra unit of m is greater than the disutility of cheating an extra unit c - is the case:

$$\frac{\partial u}{\partial m} > \left| \frac{\partial u}{\partial c} \right| \quad (1)$$

Given negative results, the robustness check becomes less useful, but we can also see that results are not significant for any subset.

Result 3: The moral character of the destination affects the likelihood of cheating.

We observe that routes with a moral connotation present a substantially lower rate of cheating, with cheating occurring in 52.3% of them, as opposed to 71.6% of routes with destinations without positive moral connotations. Furthermore, the result that the white confederate is the object of significantly more deceptive behavior holds only for routes with non-moral connotations, as routes with moral connotations reduce the effect social distance has on behavior.

Indeed, using the ‘ride-cheat’ measure, a dummy variable that takes the value 1 if a driver is overcharged in a given ride, we find that destinations with a ‘moral’ character (schools, churches, or hospitals) - have a markedly lower rate of fraud than rides that do not have said character - indeed the expected probability of fraud occurring is reduced by 18 percentage points, as shown in table 10. This is a large effect, accounting for a drop in half from the frequency of cheating in non ‘moral’ routes. If this is true, then this would imply that it may be wise to deliver programs from places with moral associations, as this may reduce fraud.

We also find that when we disaggregate our sample into rides taken to moral destinations, as we do in table 11, and into rides taken into non-moral destinations, we find that social distance is a significant determinant of fraud in non-moral destinations, but ceases to be significant when the destination is has a moral association.

On our contamination measures, it is worth noting that in no cases where we are studying the behavior of drivers, the order of confederates, or the ride number of the day, have a significant effect

Table 10: Estimated effect of moral destinations on deception

	(1)
	Fraud in a Given Ride
Moral Destination	-.1807526* (.0879034)
Location: Lilongwe	.2226598 (.1463326)
Ride of Day	.0086349 (.0150913)
Day Fixed Effects	.015956 (.0124835)
_cons	.3616728 (.2317618)
<i>N</i>	132

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

- indeed the coefficient of these is almost invariably quite strongly zero, suggesting contamination was unlikely during the experiment. The only significant coefficient for a control is on day of the experiment, which becomes significant when we disaggregate rides into moral or non-moral destinations, for non-moral destinations. However, the coefficient is small, not significant in our main analysis, and unlikely to introduce any bias in our results, or indicate further issues.

Table 11: Estimated effect of ethnicity on deceptive behavior, disaggregated by destination type

	(1)	(2)
	Moral Destination: Price Charged	Non-Moral Destination: Price Charged
White	11.98537 (10.24882)	21.48028* (9.033423)
Malawian Minority	-1.277322 (7.00711)	6.126287 (9.086585)
Condeferate Order	-6.44662 (5.138002)	2.088005 (4.52273)
Ride of the Day	-2079027 (1.462688)	-1.37673 (1.397622)
Experiment Day	-.2246989 (1.25693)	-2.429723 (1.117803)*
Ride in Lilongwe	37.19651* (25.82744)	36.31397 *** (12.63843)
_cons	167.1829*** (17.5026)	187.868 *** (22.79865)
<i>N</i>	132	270

* indicates that the estimate is significant at a 5% significance level. ** indicates that the estimate is significant at a 1% significance level. *** indicates that the estimate is significant at a 0.1% significance level. Standard errors are provided in parenthesis.

4 Discussion

Controlling for informational asymmetries, we find that varying the ethnicities of the passengers during a ride, we observe an increase in the frequency of deceptive behavior when the social distance between the driver and the passenger is larger. This is in line with the previously mentioned studies that have found a decreased frequency for anti-social behavior when there is a closer proximity between the subject and the person who is disadvantaged from that behavior. Hence, we expected to find that a larger proportion of drivers will act honestly and return the change when an ethnic Malawian is the passenger compared to when a person of another ethnicity is a passenger. While Balafoutas et al. (2013) argue that informational asymmetries are key. Indeed, in this case, we find that social distance matters per se, a case strengthened by the fact that the condeferate that gets cheated the most, is also best able to identify cheating.

The practical implications for this research mainly lie in the field of developmental economics. Seeing that social distance affects fraud in economic transactions, implies that when engaging in policy-delivery, particularly at end-points, where services are actually being provided, it would be beneficial to reduce as much as possible the social distance between the provider, and the person receiving the service. Furthermore, we have found that the moral character of the destination of the ride, has a significant, and large negative effect on the likelihood the driver will overcharge. The implication of this, is that when possible, policy delivery should occur from locations with moral connotations (e.g. it may be beneficial to have a given NGO based in a church, instead of in a standard office).

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Appendix A

Detailed Procedures

The storyline of one observation is as follows: our confederate approaches the taxi stand, explains where he wants to go (as discussed, the routes are predetermined by the experimenters such that the length and the effort the drivers have to exert suffer from as small variation as possible) and he is instructed to quote the market price for the ride, usually 150 MKW (Chichewa uses the English numbers for counting, therefore translation is not an issue here). During the ride, the confederate avoids talking to the driver. If a driver starts a conversation, our confederate is instructed to keep the interaction to the necessary minimum to rule out effects of amicability between the driver and the passenger. The key exception is the confederate must state that he is only in town for a couple of days, and is not from there. Upon arriving at the final destination, our confederate thanks for the ride and prepares to pay. The confederate takes a banknote (its face value depends on the treatment, and their sequence having been randomized) out of the pocket and gives it to the driver saying that he does not have change. Obviously, it is necessary that passengers can convince drivers that they do not have change. We make sure that passengers are instructed not to show a wallet, but only pull a note out of the pocket. If the driver has the change, then the passenger takes the excess money, wishes a nice day and leaves.

If the driver says that he does not have change to return, our confederate asks the driver if it possible for him to go to a nearby place to get the change and return back afterwards. After this being said, our confederate waits at the destination point for 10 minutes to see whether the driver returns. If the driver does not return within 10 minutes, our confederate leaves and such an encounter will be counted as a deceit. In the end, we are interested in the proportion of 'deceits'.

The data was be recorded by the confederates in small cards illustrated in Figure 4. The confederates would fill the central part of the card with the sections 'Date' through to 'RA Order' before going to the bicycle taxi station. Before leaving, they would introduce the card in their pocket so it would not be visible to the drivers. The sections 'Come back?' and 'Left Bike?' - asking for the prediction of whether the driver will come back with the change, and whether he leaves the bike while he is doing so, are filled as the driver is getting change, with care being taken to do so out of sight of the driver. The third section of the card 'Paid' through to 'Distance' is completed after the interaction is over, and the RA has rejoined the team.

Come back?	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	Left Bike?	<input checked="" type="radio"/> Y	<input type="radio"/> N
Date:	11/08							
Ethnicity/Stakes:	T/2000							
Time of Day:	10:30am							
Ride Number:	1	RA Order:	1					
Paid:	2200	Fair Price?	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	
Had change?	<input checked="" type="radio"/> Y	<input type="radio"/> N	Change back:	<input checked="" type="radio"/> Y	<input type="radio"/> N			
Distance:	1.00km							

Figure 1: Example of a card used during the experiment

As for the trained confederates, all of them are young men aged between 27 - 28 recruited locally to control costs. We look for suitable Malawian confederates recommended from the economics department at Chancellor College, part of the University of Malawi. As for the physical appearance of the passengers, the confederates wear a white long-sleeved shirt with a pair of long trousers. Malawian-minority confederates are identified by their distinctive accent when speaking Chichewa.

Appendix B

Script

'Hello, I'd like a ride to (location) for (amount) MKW ' The confederate must the accept the price given to him in response by the cab driver.

After the price is agreed on, the confederate *must* state: 'I'm visiting (location) for two days.'

To keep the idea that the confederate is only visiting briefly, if asked where they're from, the confederate will state 'I'm from Kasungu (central region city-chewa)/Mzeze/Salima'

The driver is instructed to keep communication at an absolute minimum during the ride. This should be easy for non-native speakers as drivers often have limited English.

Answers to any questions should be minimalistic:

Examples:

Where do you study? 'City of origin'

What are you doing in Malawi/Lilongwe? 'Just visiting'

I've been/I like Mzeze/Kasungu. 'It's very nice'

What have you visited? 'Just the city'

You're not very talkative? 'Not terribly'

At the end of the ride, the driver must hand the bill (from the pocket, without showing a wallet or other bills) to the Malawian and say:

'Please take this bill, get change somewhere and come back here as soon as you can'.



Figure 2: Example of a bicycle taxi commonly used in Malawi.