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Dishonesty and mandatory mask wearing in the COVID-19 pandemic

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ABSTRACT

In an attempt to slow down the spread of the coronavirus, an increasing number of countries, including Israel, have made wearing masks mandatory for their citizens not just in closed public places but also while walking in the streets. Failing to comply with this regulation entails a fine enforced by the police. Still, while many passersby do wear a mask that covers both their mouth and nose, others wear a mask improperly around their chin or neck or walk the streets wearing no mask at all. We speculate that the former passersby prepare themselves for a possible encounter with a police officer, in which case they could lie and claim that their mask unnoticeably slipped down from its proper position. The present paper reports the results of a field experiment designed to examine the hypothesis that, given the opportunity, passersby who wear their mask around their chin or neck are more likely to lie than those who wear no mask at all, although intuition may suggest otherwise. Incentivizing passersby's dishonesty with the Die-Under-the-Cup (DUCT) task, the experiment results support our hypothesis.

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1. Introduction

In an attempt to slow down the spread of the coronavirus, an increasing number of countries, including Israel, have made wearing face masks mandatory for their citizens not just in closed public spaces (such as supermarkets, restaurants, or public transport) but also in the open air while walking in the streets or elsewhere outside their homes. Failing to comply with this regulation entails in Israel a fine of 500 NIS (about 120 Euro) enforced by the police. Observing passersby on the streets of Tel-Aviv reveals three types of people regarding mask wearing: those who fully comply with the mandatory requirement, wearing a mask that covers both their mouth and nose, those who wear the mask improperly around their chin or neck, leaving their mouth and nose exposed, and those who wear no mask at all. Wondering why people of the second type bother to wear a mask at all if it just hangs aimlessly and ineffectively on their chin or neck, we speculate that they prepare themselves for a possible encounter with a police officer, in which case they would lie and dishonestly claim that their mask unnoticeably slipped down from its proper position.

Over the past decade, with the growing appeal of experimental techniques, behavioral economists and social psychologists have

been designing numerous lab and field experiments with the purpose of deriving insights on real people's dishonest behavior, incentivizing subjects with monetary payoffs. While there is a wide variety of dishonesty experiments reported in the literature, the most prominent genre involves a simple task performed by participants in privacy, such as flipping a coin (e.g., [Buccioli and Piovesan, 2011](#)), rolling a die (e.g., [Fischbacher and Foellmi-Heusi, 2013](#)) or finding pairs of numbers that add up to 10 in as many matrices as possible (e.g., [Mazar et al., 2008](#)), the outcome of which they are requested to honestly self-report. Other genres of honesty experiments include sender–receiver games where senders may convey deceptive messages to receivers under conditions of asymmetric information (e.g. [Gneezy, 2005](#)), dropping wallets or cash envelopes in public places to examine the return rates ([West, 2005](#)) and handing cash-paying customers, such as restaurant diners, excessive change to elucidate their tendency to return the undeserved amount ([Azar et al., 2013](#)).¹

The present paper reports the results of a field experiment designed to examine our hypothesis that, given the opportunity, people who wear their mask around their chin or neck are more likely to lie than people who do not wear a mask at all, although intuition may suggest otherwise. Incentivizing people's dishonesty with monetary payoffs, the experiment's results support

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¹ For detailed reviews of the experimental literature on dishonesty see [Rosenbaum et al. \(2014\)](#), [Jacobsen et al. \(2018\)](#) and [Abeler et al. \(2019\)](#).

our hypothesis. Also, no difference in lying behavior was found between people who wear their mask properly and people who wear no mask at all.

2. The experiment

The experiment involved the Fischbacher and Foellmi-Heusi (2013) die-under-the-cup (DUTC) task, which incentivizes dishonest behavior. In this task, participants roll a six-sided fair die in private (under a cup or at some other hidden place) and are promised a payoff according to the outcome of the roll (e.g., 1, 2, 3, 4, 5 or 6 dollars for the corresponding die number rolled) which they report to the experimenter. While the DUTC task provides incentives for dishonest overreporting of the actual die outcome, it only allows to elucidate the aggregate (not the individual) level of dishonesty among participants as a group by comparing the average reported outcome to the expected outcome of 3.5 in a fair die roll.²

During the first week of June 2020, when wearing masks outside one's home was mandatory, we randomly approached passersby on the streets of Tel-Aviv, offering them to perform the DUTC task for a payoff of 5 NIS (about 1.2 Euros) per each dot shown on the die. We decided in advance to collect data from 100 passersby of each type described above (half males and half females), but because not everyone was willing (for whatever reason) to cooperate with us, we ended up approaching a total of 325 passersby (an acceptance rate of 93 percent), of whom 113 were wearing a mask that covered both their mouth and nose (an acceptance rate of 88 percent), 105 were wearing a mask around their chin or neck (an acceptance rate of 95 percent) and 107 were wearing no mask at all (an acceptance rate of 95 percent).³

Table 1 presents descriptive statistics of the 300 subjects who accepted our invitation. As shown in the table, the mean reported die outcome in the whole sample was 4.38, which is significantly higher than the statistical expectation of 3.5 ($t = 9.785, p < 0.01$). Hence, subjects on the aggregate level lied to us, over-reporting their actual die outcome. However, subjects who wore a mask around their chin or neck lied more than others, reporting, on average, an outcome of 4.91 (SD = 1.28) as compared to 4.05 (SD = 1.61) reported by those who wore their mask properly and 4.21 (SD = 1.65) reported by those who wore no mask at all. The difference in means between those who wore their mask improperly around their chin or neck and those who wore no mask at all is statistically significant ($t = 4.181, p < 0.01$), whereas the size of the difference, measured by Cohen's d test (known as the "effect size"), is "medium" [$d = 0.590, CI_{95\%}(0.310, 0.8701)$]. The difference in means between those who wore their mask improperly and those who wore it properly is also statistically significant ($t = 3.279, p < 0.01$), although the size of the difference is "small" [$d = 0.466, CI_{95\%}(0.180, 0.752)$]. However, the difference in means between those wearing a mask properly and those wearing no mask at all is statistically insignificant ($t = 0.737, p = 0.42$).

Table 2 presents the results of regressing the reported die outcome on mask wearing and two demographic variables (gender and age). In column I, passersby who wear a mask improperly around their chin or neck serve as the omitted variable from the

regression. The two types of passersby included in the regression exhibit a significant negative effect, implying that the omitted variable has a significant *positive* effect on the reported outcome. Hence, passersby who wear a mask improperly around their chin or neck tend more than others to lie about the true outcome of their die rolling. Notice further that age exhibits a significantly positive effect (across all columns) on the reported outcome, implying that lying increases with age, whereas the effect of gender is statistically insignificant. This seems to contradict some earlier literature which found gender differences in dishonest behavior, particularly that women are less dishonest than men (e.g., Ward and Beck, 1990; Jackson et al., 2002). Tibbetts (1999) argued that men have less self-control, which drives them to disobey rules more frequently, whereas women have a stronger tendency to feel shame from deviating from the norm and are more influenced by moral limitations.

In column II, we added a two-way interaction variable of gender and proper mask wearing which is statistically insignificant. This means that the negative effect of proper mask wearing on the reported outcome is not driven by a specific gender. In column III, passersby who wear their mask properly, covering their mouth and nose, serve as the omitted variable from the regression. In this case, passersby who wear their mask improperly exhibit a significant positive effect on the reported outcome, whereas the effect of passersby who wear no mask at all is statistically insignificant, meaning that there is no significant difference in dishonesty between those who wear no mask at all and those who wear a mask properly.

3. Conclusions

We have reported the results of a field experiment performed in Israel during the COVID-19 pandemic, when wearing a face mask was mandatory not only in closed public spaces but also while walking on the streets in the open air. The experiment examined the hypothesis that, given the opportunity, passersby who wore a mask improperly around their chin or neck were more likely to lie than passersby who wore a mask properly and, most interestingly, more likely to lie than passersby who took the liberty of not wearing a mask at all. The experiment involved the Die-Under-the-Cup (DUTC) task which incentivizes dishonesty, revealing that the mean reported die outcome of passersby who wore a mask improperly was significantly higher than that of other passersby and that improper mask-wearing had a significant positive effect on the reported outcome in a regression analysis. This supports our hypothesis that passersby who wore their mask improperly rather than not wearing it at all, apparently for the purpose of lying to a police officer that their mask unnoticeably slipped down,⁴ are greater liars than other passersby strolling the streets during the coronavirus pandemic. It is also worth mentioning that no significant difference in lying behavior was found between those who wore no mask at all and those who wore a mask properly.

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² In almost every DUTC task reported in the literature, the mean reported die outcome exceeded 3.5, but fell short of 6, implying that people in general respond positively to the monetary incentive to lie, yet refrain from lying to the highest possible extent.

³ Some passersby were wearing a mask that covered their mouth but not their nose. We ignored these passersby because their mask could indeed slip down a bit below their nose without having noticed it. Also, police officers did not tend to fine such passersby but just to order them to lift up their mask to cover their nose as well.

⁴ Another possible explanation for wearing a mask improperly rather than not wearing it at all is that when being approached by another passerby, it is easier to fix its position than to pull it out of the pocket and wear it properly. However, all improperly-mask-wearing passersby whom we approached did not fix their mask position in our honor.

Table 1
Descriptive statistics (means).

	All	Wearing mask properly	Wearing mask on chin or neck	Wearing no mask
Male ^a	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)
Age	31.12 (10.08)	31.57 (9.14)	30.24 (10.11)	31.56 (10.96)
Fraction of sample	1.00 (0.00)	0.33 (0.33)	0.33 (0.33)	0.33 (0.33)
Reported die outcome	4.38 (1.56)	4.05 (1.61)	4.91 (1.28)	4.21 (1.65)
N	300	100	100	100

Note: Standard deviations appear in parentheses.

^aMale = 1; Female = 0.

Table 2
Regression of reported die outcome on mask wearing and demographic variables.

	I	II	III
Constant	3.847* (0.311)	3.824* (0.319)	3.501* (0.300)
Male ^a	0.003 (0.171)	0.043 (0.211)	0.042 (0.211)
Age	0.035* (0.008)	0.035* (0.008)	0.031* (0.008)
No mask wearing ^b	-0.735* (0.211)	-0.735* (0.211)	0.111 (0.279)
Proper mask wearing ^c	-0.904* (0.211)	-0.845* (0.279)	- -
Improper mask wearing ^d	- -	- -	0.853* (0.279)
(Male) × (Proper mask wearing)	- -	-0.120 (0.365)	- -
R ²	0.107	0.107	0.075
N	300	300	300

Note: Standard errors appear in parentheses.

^aMale = 1; Female = 0.

^bNo mask wearing = 1; Otherwise = 0.

^cProper mask wearing = 1; Otherwise = 0.

^dImproper mask wearing = 1; Otherwise = 0.

*Statistically significant at 0.01 level.

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