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8 **Reduced social distancing during the COVID-19 pandemic is associated with antisocial**
9 **behaviors in an online United States sample**
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Abstract

Antisocial behaviors cause harm, directly or indirectly, to others' welfare. The novel coronavirus pandemic has increased the urgency of understanding a specific form of antisociality: behaviors that increase risk of disease transmission. Because disease transmission-linked behaviors tend to be interpreted and responded to differently than other antisocial behaviors, it is unclear whether general indices of antisociality predict contamination-relevant behaviors. In a preregistered study using an online U.S. sample, we found that individuals reporting high levels of antisociality engage in fewer social distancing measures: they report leaving their homes more frequently ($p=.016$) and standing closer to others while outside ($p<.001$). These relationships were observed after controlling for sociodemographic variables, illness risk, and use of protective equipment. Antisociality was not significantly associated with level of worry about the coronavirus. These findings suggest that more antisocial individuals may pose health risks to themselves and their community during the COVID-19 pandemic.

Introduction

The most urgent public health issue of the 21st century thus far is the global COVID-19 pandemic caused by a novel coronavirus strain, estimated to have caused over 400,000 deaths as of June, 2020 [1]. Because no cure or effective vaccine for COVID-19 yet exists, the primary means of reducing illnesses, deaths, and other costs from the pandemic are behavioral. These include social distancing measures such as limiting non-essential trips outside of the home and maintaining adequate social distance (6 feet or greater) from others in public settings [2]. Despite increasing global awareness of the pandemic and its impact particularly on vulnerable populations like the elderly and those with chronic health conditions [3,4], avoidance of harmful behaviors remains inconsistent [5,6], contributing to the ongoing spread of the virus. Thus, better understanding the factors that promote versus inhibit disease transmission risk behaviors is essential. In light of evidence that antisociality—the tendency to engage in various behaviors that directly or indirectly harm the welfare of others—represents a stable phenotype in adults that varies across individuals and predicts behaviors across domains including physical aggression, social aggression, and rule-breaking [7–11], we predicted that variation in social distancing behavior would be associated with scores on a validated measure of general antisociality even after accounting for key demographic and risk-related variables.

Antisocial behavior is defined as any action that harms others, violates social norms, or infringes on the rights of others [9,12]. The tendency to engage in antisocial behaviors such as violence, rule-breaking, and bullying varies significantly across the population, with a small proportion of individuals responsible for the majority of antisocial acts. For example, large cohort studies estimate that the most antisocial 1-10% of the population is responsible for more than two thirds of all criminal convictions [13–15]. Antisociality is known to increase behaviors specifically

relevant to public health risks as well, including physical violence [16–19], unsafe driving [20,21], and risky sex practices [22–25]. A relatively small fraction of individuals engaging in disease transmission behaviors could have significant implications, as epidemiological research suggests a small proportion of individual disease hosts can account for massive numbers of cases [26,27].

At the time of this investigation—early April of 2020—COVID-19 has become recognized as a significant cause of serious illness and death in many countries, including the United States, and behaviors that increase risk of disease transmission have quickly come to qualify as forms of antisociality. Such behaviors include leaving the home and venturing into public spaces for non-essential reasons, and maintaining insufficient distance (less than 6 feet) from others in public settings, particularly when not wearing protective equipment such as a face mask [28]. Engaging in these behaviors has been prohibited or discouraged across much of the globe, by both governmental and non-governmental organizations like universities, sports organizations, and private companies.

Nonetheless, engagement in potentially disease-transmitting behaviors remained common in the U.S. even at a time of exponential spread, stay-at-home orders and generally high uncertainty about the virus. Late March/early April polls reported that 16% of Americans were not avoiding social gatherings [29] and photographs of “coronaparties,” protests and crowded beaches led news headlines across the country. Potential reasons for continuing to engage in disease-transmitting behaviors during a pandemic include low awareness of disease severity (which may result from contradictory or unclear public messaging), perceptions of low personal risk, and socioeconomic factors [30–32]. But the antisocial behavior literature makes clear that individual variation in personality and values likely also play a role [33–37]; in particular, individual variation in overall antisocial tendencies may represent an important contributor to social distancing behavior during

the novel coronavirus pandemic. However, no empirical link between antisociality and behaviors that risk transmission of the novel coronavirus yet exists. And some evidence suggests disease risk behaviors may be moderated by dissociable psychological mechanisms from those that moderate other forms of risk behavior, with disease transmission risk behaviors regulated by neurocognitive systems that generate disgust in response to pathogen cues [38–40], and aggressive and other antisocial behaviors regulated by neural systems that generate fearful or angry responses to acute harm [41–43].

We thus sought to empirically test whether, in light of widespread awareness that behaviors that risk coronavirus transmission may expose others to acute illness or death, continuing to engage in such behaviors would be associated with overall antisocial tendencies. We hypothesized that antisociality would correspond to reduced social distancing behaviors. To test this prediction, we recruited an online sample of adults and assessed demographic variables, self-reported social distancing behaviors, and information related to illness risk of both respondents and members of their households. We measured antisociality using the Subtypes of Antisocial Behavior Questionnaire (STAB), which assesses variation in behaviors that include violence, threats, bullying, theft, and rule-breaking (e.g., littering, vandalism), and has been validated in community, clinical, and adjudicated samples to reliably predict a range of real-world antisocial behaviors [7,9,44]—but not, to date, any behaviors related specifically to disease transmission.

Methods and analysis plans were pre-registered and time-marked April 7th, 2020 at 17:04 EST and all materials, data and code are publicly available (<https://osf.io/3429d/>).

Methods

Participants

A total of 173 participants were recruited from Amazon's Mechanical Turk (MTurk) using a geographical US filter between April 08, 2020 14:25 EST and April 08, 2020 18:18 EST. Participants completed the survey in Qualtrics, which required passing a reCAPTCHA V2. Participants were excluded for being outside the required age range 18-65 (2), reporting that they do not currently live in the U.S. (1), or for failing 2 or more of 3 attention checks (7). In addition, we excluded 32 responses that were flagged as having suspicious location or ISP information using an online tool [45] or which appeared to be duplicates based on human inspection. Results were unchanged when using less strict exclusion criteria for suspicious responses, which is reported in Supplementary Materials.

Participants were compensated \$1.00 for completing the survey, which on average lasted 546 ± 300 seconds. All study procedures were carried out in accordance with a protocol approved by the Institutional Review Board Committee C at Georgetown University in Washington, DC, and participants provided electronic written informed consent prior to beginning the survey. Demographic characteristics of the final sample are reported in Table 1. Note one participant reported currently working as a healthcare provider.

Table 1. Demographic characteristics of the final sample.

Variable	Value
Age, M(SD)	36.3 (10.1)
Male/Female (% Male)	78/53 (59.5%)

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Race

White	104 (79.4%)
Black	13 (9.9%)
Asian	6 (4.6%)
Other/Mixed	8 (6.1%)
Hispanic/Not (% Hispanic)	15/116 (11.5%)
Education $\geq$ 4-year degree	74 (56.5%)
Employed full or part-time	112 (85.5%)
High-risk for serious illness ^a	
Self	29 (23.4%)
Lives with someone	35 (27.8%)
Total	48 (39.0%)

136 n=131.

137 ^a 8 participants did not provide information about risk.

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139 **Survey**

140 Survey questions related to the COVID-19 pandemic were based upon questions by Anet
141 and colleagues [46], which we expanded upon and adapted for a U.S. sample. Briefly, participants
142 were first asked to respond to the question, “How worried are you about the novel coronavirus
143 (COVID-19) pandemic?” on a 5-point scale from “Not worried at all” to “Very Worried”.
144 Participants were then asked about expected impact (i.e. on health or financial status) from
145 COVID-19 and behavioral/ social distancing questions including, “How many times have you left

your home/apartment in the last week?”, which participants answered using a drop-down list of values ranging from 0-19 and “More than 20 times” (no participant selected this option).

To assess distance kept from other individuals in the past week, participants were presented with an image of an adult silhouette surrounded by a rectangular border (Fig 1). They were asked to click a point in the image that represents how far away they typically stood from other individuals with the question, “Using the image below, click anywhere to the right of the silhouette that represents how far away you typically stand from other individuals (in the past week)”. The selected position was then displayed to the participant, at which point they were able to change their selection if desired prior to advancing. Distance between the silhouette and the selected point was measured in pixels along the x-axis of the image (y-axis information was ignored for statistical analyses). For interpretation, we also converted pixel distance into approximate inches by assuming the silhouette, which depicted a male, represented an average-height man in the US (69.3 inches; 176.0 cm) [47]. Personal protective equipment (PPE) use frequency was determined with the question, “How frequently did you use personal protective equipment such as a mask, face shield and/or gloves when you went outside in the last week?” with response options on a 5-point scale from “Never”=1 to “Always”=5.

Fig 1. Distance kept from others in past week. A bordered image that contained an adult silhouette was used to assess participant-reported distance kept from others. The gray-red heatmap shows how far participants reported standing from other individuals in the past week, with dark maroon indicating a higher density of responses obtained from a kernel density estimation. The mean response coordinate, +, represents a distance of approximately 98 inches (8.2 feet; 2.5 m).

After completing the COVID-19 specific questions, participants completed the STAB questionnaire [9]. Lastly, participants provided demographic and psychological history information.

Subtypes of Antisocial Behavior Questionnaire

Participants completed the 32-item STAB questionnaire [9], which inquired about engagement in various antisocial behaviors over the past year using a 5-point scale (“Never”, “Hardly ever”, “Sometimes”, “Frequently”, “Nearly all the time”). A summed total antisocial behavior score (STAB-Total) and three subscales were calculated: a 10-item Physical Aggression scale ($\alpha = .84-.91$), an 11-item Social Aggression scale ($\alpha = .83-.90$) and an 11-item Rule-Breaking

scale ($\alpha = .71-.87$). The factor structure of the STAB has been previously confirmed in non-clinical adult samples [9].

Statistical inference

Sample size was predetermined with G*Power [48] using the main outcome variable of number of times left home in the past week. We anticipated a base rate of $\beta_0 = .286$ (2 times in 7 days), a 25% increase ($\beta_1 = 1.25$) associated with antisocial behavior, and a moderate association between covariates and the main predictor ($R^2 \text{ other } x = .25$). Setting $\alpha = .05$ and $\text{power} = .90$, we calculated that a sample size of 138 would provide sufficient power. We expected this sample size to also provide sufficient power for the distance and worry multiple linear regression analyses estimating effect size as Cohen's $f^2 = 0.1$, $n \text{ predictors} = 5$, $\alpha = .05$ and $\text{power} = .90$ (critical $n = 108$). Assuming the need to exclude 20% of responses, we collected $n = 173$. We excluded more responses than anticipated (approximately 30%); however, our final sample size provided greater than standard power (.80) for all analyses (times left home post-hoc $\text{power} = .85$; distance post-hoc $\text{power} = .92$, worry post-hoc $\text{power} = .94$). All following statistical analyses were completed in Stata 15 (StataCorp. 2017. College Station, TX).

Results

Times left home in past week

Participants reported leaving their home a median of 2 times in the past week (IQR=1-3; Min=0; Max=15). To investigate whether leaving the home more frequently is associated with general antisocial tendencies, we applied statistical count models with the dependent variable set

as times left in the past week and STAB-Total as an independent predictor. Models included the following covariates: age, sex, education, whether the participant left home for work in the last week, and whether the participant was at high risk or lives with someone at high risk. Variables were entered in steps with basic demographics entered in Step 1, COVID-19-related covariates entered in Step 2, and STAB-Total entered in Step 3. A goodness-of-fit test from a Poisson model indicated the data for the full model were over-dispersed (deviance g.o.f.=220.43, $p<.001$), we therefore applied a negative binomial model; the likelihood-ratio test of the resulting alpha distribution parameter was greater than 0, indicating that the negative binomial model provided a better fit than Poisson ($\alpha=.36$, 95% CI=[.21, .63], $\chi^2=34.11$, $p<.001$). In the model, antisocial behavior scores and age are mean-centered, sex is coded as 0=male and 1=female, education is coded as 0= <4-year degree and 1= $\geq$ 4-year degree, left house for work in the past week is coded as 0=no and 1=yes, high-risk for serious illness (for self or someone the participant lives with) is coded as 0=no and 1=yes. Cases were excluded list-wise for missing data (left house for work, 7; high-risk, 8).

Results showed that frequency of leaving home during the COVID-19 pandemic was associated with overall antisocial tendencies, such that one standard deviation increase in STAB-Total was associated with 21.2% more incidents of leaving after adjusting for covariates (Table 2). Fig 2a displays this relationship while holding other covariates at their mean. As expected, leaving home for work in the past week was associated with 64.5% more incidents.

221 **Table 2. Negative binomial regression predicting the number of times participants left their home in the past week.**

	Step 1			Step 2			Step 3		
	IRR	95% CI	p	IRR	95% CI	p	IRR	95% CI	p
Constant	2.743	2.035, 3.697		2.276	1.654, 3.134		2.564	1.849, 3.554	
Age	1.011	0.994, 1.028	.213	1.013	0.996, 1.029	.125	1.013	0.997, 1.029	.113
Sex	0.806	0.556, 1.167	.254	0.925	0.646, 1.324	.669	0.935	0.658, 1.330	.709
Education	0.922	0.648, 1.313	.653	0.806	0.571, 1.136	.218	0.735	0.520, 1.037	.080
Left for work				2.054	1.397, 3.020	<.001	1.645	1.085, 2.494	.019
High-risk				0.992	0.704, 1.399	.965	0.890	0.628, 1.261	.512
Antisocial behavior							1.007	1.001, 1.013	.016

222 n=117. Step 1: $\chi^2(3)=2.47$, $p=.481$. Step 2: $\chi^2(5)=15.43$, $p=.009$; $\Delta\chi^2=12.96$, $p=.002$. Step 3: $\chi^2(6)=21.05$, $p=.002$; $\Delta\chi^2=5.62$, $p=.018$.

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Fig 2. Antisociality is associated with leaving the home more frequently and standing closer to others during the COVID-19 pandemic. (a) Adjusted predictions from the negative binomial regression indicate that leaving the home more frequently is positively associated with antisociality. (b) Adjusted predictions of distance kept from others outside of the home in the past week is negatively associated with antisociality; the red line denotes the government recommended distance of 6 feet (1.8 m). Error bars represent 95% CI of the mean.

Distance kept from others in past week

We next assessed whether antisocial tendencies were associated with estimates of real-world social distancing. Distance was measured as the horizontal distance (x-axis only) between the silhouette image and the selected typical standing distance in pixels ($M=392.6$, $SD=130.2$, 95% $CI=[369.2, 416.1]$, Fig 1). Approximate conversion to inches indicated that on average participants reported standing 98.2 inches (8.2 feet; 2.5 m) away from others ($M=98.2$, $SD=32.6$, 95% $CI=[92.4, 104.1]$). We applied a multiple linear regression predicting distance in pixels from total antisociality score while including the following covariates: age, sex, education, whether the participant was at high-risk or lives with someone at high-risk, and PPE use frequency. PPE use

frequency was entered as a continuous variable. Variables were again entered in steps; with basic demographics entered in Step 1, COVID-19-related covariates entered in Step 2, and STAB-Total entered in Step 3. Cases were excluded list-wise for missing or invalid (e.g. participant's response was on the silhouette) responses (distance from silhouette, 10; PPE use frequency, 1; high-risk, 8).

As expected, antisociality was associated with reduced reported distance kept from others, such that one standard deviation increase in STAB-Total was associated with 57.0 fewer pixels (i.e. 14.3 inches; 36.3 cm) of social distance after adjusting for covariates (Table 3). Fig 2b displays this relationship while holding other covariates at their mean. Increased PPE use frequency was associated with increased reported distance kept from others while having at least a 4-year college degree was associated with reduced distance kept from others.

256 **Table 3. Multiple linear regression predicting distance in pixels.**

	Step 1			Step 2			Step 3		
	B	95% CI	p	B	95% CI	p	B	95% CI	p
Constant	403.573	363.277, 443.869		365.929	306.794, 425.064		334.949	277.610, 392.288	
Age	-0.549	-2.881, 1.783	.642	-0.511	-2.858, 1.836	.667	-0.510	-2.705, 1.685	.646
Sex	50.100	1.519, 98.682	.043	48.077	-0.447, 96.602	.052	33.141	-12.826, 79.108	.156
Education	-61.216	-108.895, -13.537	.012	-61.766	-109.255, -14.278	.011	-48.472	-93.359, -3.585	.035
High-risk				21.539	-28.398, 71.475	.394	33.632	-13.445, 80.708	.160
PPE use frequency				10.755	-4.021, 25.531	.152	16.382	2.291, 30.472	.023
Antisocial behavior							-1.894	-2.819, -0.969	<.001

257 n=114; 1 pixel is approximately equivalent to 0.25 inches (0.64 cm). Step 1: $F(3,110)=3.51$, $R^2=.087$, $p=.018$. Step 2: $F(5,108)=2.75$,

258 $R^2=.113$, $p=.022$; $\Delta R^2=.025$, $p=.218$. Step 3: $F(6,107)=5.36$, $R^2=.231$, $p<.001$; $\Delta R^2=.119$, $p<.001$.

Reported worry about COVID-19

Participants on average reported moderate-to-high levels of worry about the coronavirus with a mean response of 3.63 on the 5-point scale ($M=3.63$, $SD=1.10$, $95\% \text{ CI}=[3.44, 3.82]$). We next considered the hypothesis that antisociality is associated with reduced worry about COVID-19. We thus applied a multiple linear regression predicting the dependent worry variable from STAB-Total and included the following covariates: age, sex, education and whether the participant was at high risk or lives with someone at high risk. In this model ($F(5,117)=2.51$, $R^2=.097$, $p=.034$, $n=123$), antisocial behavior score was not a significant predictor of worry ($B=0.005$, $95\% \text{ CI}=[-0.002, 0.012]$, $p=.161$). The only significant predictor in the model was the high-risk variable, which was associated with increased worry ($B=0.551$, $95\% \text{ CI}=[0.145, 0.958]$, $p=.008$). We assessed the same variables using an ordered logit model and observed the same results.

Correlations among variables

Inter-correlations between study variables are reported in Table 4. We applied Spearman's rank correlations due to the non-normality or count/ordinal scale of most variables. We observed a significant relationship between the two main dependent variables such that leaving the home more frequently was associated with reduced distance kept from others ($\rho=-.360$, $p<.001$), suggesting a consistent violation of social distancing norms in some individuals. Level of worry revealed a small positive relationship with PPE use frequency ($\rho=.201$, $p=.027$), but had no significant relationship with other variables. Subscales of the STAB questionnaire were highly intercorrelated (ρ values ranged from .642 to .827), which validated our use of a total score.

280 **Table 4. Intercorrelations among variables.**

	1	2	3	4	5	6	7	8	9	10
1. Age	-									
2. Education	0.120	-								
3. Times left house	-0.043	-0.003	-							
4. Distance kept	-0.059	-0.164	-0.360***	-						
5. Worry about COVID-19	0.051	-0.012	-0.149	0.123	-					
6. PPE use frequency	-0.076	0.047	-0.070	0.160	0.201*	-				
7. Physical Aggression	-0.152	-0.009	0.253**	-0.155	0.158	0.065	-			
8. Social Aggression	-0.043	0.013	0.221*	-0.165	0.114	0.082	0.827***	-		
9. Rule Breaking	-0.140	-0.064	0.337***	-0.198*	0.123	0.151	0.675***	0.642***	-	
10. STAB-Total	-0.108	-0.021	0.252**	-0.151	0.141	0.098	0.938***	0.952***	0.731***	-

281 All correlations are Spearman rho values; n=121.

282 * p<.05, ** p<.01, *** p<.05 Bonferroni corrected for 45 comparisons

Discussion

We find that antisociality is associated with reduced social distancing during the COVID-19 pandemic—specifically in early April of 2020, a period of high uncertainty, awareness of community disease spread in the U.S., government ordered stay-at-home guidelines, and news of well-known public figures being treated in intensive care units. In line with our pre-registered hypotheses, we observed that antisociality significantly predicted leaving the home more frequently and standing physically closer to others, even after controlling for demographic and education variables, risk for serious illness, leaving the home for work, and use of protective equipment. These findings are the first to link behaviors that increase the risk of coronavirus disease-transmission to antisocial behavior more generally, reinforcing the importance of understanding variation in antisocial tendencies for public health.

An estimated 24.4% of our sample reported violating social distancing norms. This includes the 8.4% who reported leaving the home more than five times in the past week despite not leaving for work, and the 19.8% who reported standing less than 6 feet from other individuals while outside. Of these individuals, 9.4% (3/32) also reported having “flu-like” symptoms. When queried about their rationale for violating social distance recommendations using an open-ended question format, responses from these individuals primarily referenced self-oriented concerns, such as, *“I don't think much will happen to me personally, other than not being able to buy groceries whenever I want. I just hope it slows down/ends soon,”* *“I worry that my retirement accounts won't recover,”* and *“I certainly cannot move ahead in life [sic] to the economy gets going again and the restrictions are lifted.”* The proportion of respondents who reported violating social distance norms is consistent with the observation that the transmission of infectious agents such as the novel coronavirus follows a 20/80 rule, meaning that 80% of cases arise from only

20% of the infected population [26,27], and that a few “super-spreaders” disproportionately infect large numbers of people. Both physiological (e.g. viral shedding) and behavioral (e.g. contact length and frequency) factors are considered important features of “super-spreaders” [49] and through this report, we hope to convey that: (1) antisociality serves as an important predictor of behaviors relevant to infectious disease spread, and (2) even a small population of antisocial hosts could substantially propagate a pandemic like COVID-19.

Our findings align with results from a number of unpublished pre-prints and working papers that report on psychological correlates of behaviors and attitudes toward COVID-19. A large sample of 22-year-olds enrolled from a Swiss longitudinal study showed that previous engagement in delinquent behaviors was associated with reduced social distancing and worse hygiene behaviors related to the virus [50], suggesting that our results similarly apply among a young adult-limited sample, which represents a peak age of antisocial behavior [51]. An online sample of 502 adult participants conducted in late March, found that psychopathic traits (which are risk factors for persistent antisocial behavior) were associated with reduced social distancing and worse hygiene—and even with the intent to knowingly expose others to risk and reduced appeal of a compassionate public-health message [52], indicating the challenges inherent in trying to sway highly antisocial populations’ behaviors toward public-health norms. These observations align with findings of typically reduced preferred social distances in high-psychopathy samples [53]. Recently published work has linked other personality traits to COVID-19-related behaviors, for example, finding emotionality and conscientiousness associated with increased toilet paper stockpiling [54]. Our findings also add the important information that, contrary to our hypothesis, antisociality was unrelated to worry about COVID-19, despite antisocial behaviors often being

associated with reduced fear or anxiety [55–60]. This raises questions about whether fear-based approaches to shifting the behavior of antisocial individuals would be effective.

A few limitations should be considered when interpreting our results. While our sample roughly approximates major demographics of U.S. adults 18-65 and includes participants from 38 states, it should not be considered nationally representative due to our recruitment using Amazon’s MTurk rather than via a sampling panel and due to the relatively small—though sufficiently powered—sample size. Replication in a larger representative sample will be important. The study also used a single time point for data collection and relied on retrospective report of social distancing behaviors in the past week, which may be subject to bias. This design did not permit us to track disease status or spread in relation to antisociality (note only one participant reported a diagnosis of COVID-19 at the time of data collection). Finally, our main outcome measures of distances were novel. Although their strong interrelationship supports their validity, additional assessment of these measures are needed. For example, our survey did not distinguish between reasons for leaving the home (e.g. grocery shopping versus outdoor exercise), which may provide useful information for future research. With these limitations in mind, we note a strength of this study was that all hypotheses and methods were pre-registered and data are publicly available.

In conclusion, we found that a validated measure of antisociality predicts reduced social distancing during the COVID-19 pandemic, suggesting antisociality is important to consider as a behavioral factor for communicable disease spread. These findings warrant future research to test manipulations aimed at boosting adherence to social distancing guidelines specifically when considering antisociality, for example by evaluating prompts signaling empathic versus self-oriented motivational cues.

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Supporting Information

Reduced social distancing during the COVID-19 pandemic is associated with antisocial behaviors in an online United States sample

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Supporting Text

We used human inspection and an online tool (Prims, Sisso & Bai, 2018; <https://itaysisso.shinyapps.io/Bots>) to flag and exclude 32 suspicious responses from our dataset. To ensure these methods had no impact on results, we also performed the main analyses when not excluding any suspicious responses (see S1 and S2 Table) and when using a more lenient exclusion criteria (see S3 and S4 Table). For the more lenient criteria, we excluded 12 responses that had the same latitude/longitude information, were flagged by the online tool, and appeared to have free response answers that were bot generated. Varying these exclusion criteria had no impact on the results of the main paper.

S1 Table. Negative binomial regression predicting the number of times participants left their home in the past week, not excluding suspicious responses.

	IRR	95% CI	p-value
Constant	2.470	1.796, 3.398	
Age	1.007	0.992, 1.021	.363
Sex	1.008	0.743, 1.367	.960
Education	0.768	0.549, 1.073	.122
Left for work	1.874	1.291, 2.720	.001
High-risk	0.892	0.643, 1.237	.492
Antisocial behavior	1.007	1.001, 1.012	.013

Note: Model: $\chi^2(6)=29.33$, $p<.001$, $n=145$.

S2 Table. Multiple linear regression predicting distance in pixels, not excluding suspicious responses.

	B	95% CI	p-value
Constant	319.606	260.716, 378.496	
Age	-0.496	-2.581, 1.588	.639
Sex	23.272	-20.368, 66.911	.293
Education	-50.363	-94.728, -5.997	.026
High-risk	7.217	-38.081, 52.515	.753
PPE use frequency	20.619	6.891, 34.347	.004
Antisocial behavior	-2.244	-3.058, -1.430	<.001

Note: Model: $F(6,128)=8.13$, $R^2=.276$, $p<.001$, $n=135$.

S3 Table. Negative binomial regression predicting the number of times participants left their home in the past week, using lenient exclusion criteria for suspicious responses.

	IRR	95% CI	p-value
Constant	2.541	1.850, 3.488	
Age	1.011	0.996, 1.026	.149
Sex	0.953	0.693, 1.311	.768
Education	0.763	0.545, 1.068	.115
Left for work	1.726	1.176, 2.534	.005
High-risk	0.883	0.634, 1.230	.462
Antisocial behavior	1.007	1.002, 1.013	.008

Note: Model: $\chi^2(6)=24.93$, $p<.001$, $n=134$.

S4 Table. Multiple linear regression predicting distance in pixels, using lenient exclusion criteria for suspicious responses.

	B	95% CI	p-value
Constant	337.505	279.261, 395.749	
Age	-0.565	-2.703, 1.573	.602
Sex	24.561	-19.907, 69.029	.276
Education	-48.762	-93.404, -4.120	.033
High-risk	16.646	-29.326, 62.618	.475
PPE use frequency	16.282	2.326, 30.239	.023
Antisocial behavior	-1.918	-2.763, -1.073	<.001

Note: Model: $F(6,120)=5.74$, $R^2=.223$, $p<.001$, $n=127$