Does Identity Moderate the Impact of Presidents' Messages on Health Misinformation? Identity Alienation, Geopolitics, and COVID-19 in Ukraine

Henry E. Hale, George Washington University[1]
Volodymyr Kulyk, National Academy of Sciences Ukraine
Olga Onuch, University of Manchester
Gwendolyn Sasse, ZOiS

Paper prepared for presentation at the 2021 Annual Meeting of the Association for the Study of Nationalities, online, May 5-8, 2021

ABSTRACT: Do people's ethnic backgrounds influence how receptive they are to health information coming from their presidents during major public health crises? Existing research provides no clear answer, with some expecting ethnicity to strongly moderate health messages' effects while others find large-scale public health crises can have nationally unifying effects that might be expected to override ethnic difference when leaders provide health behavior cues. This paper draws on two separate large-scale survey experiments designed to address this question in Ukraine, the first taking place early in the COVID-19 pandemic (April 2020) and the second at a much later stage (September-October 2020), using Bayesian Additive Regression Trees to assess heterogeneous effects. The first, exploratory study found that prohealth advice coming from Ukraine's president, Volodymyr Zelensky, is likely to backfire among people who robustly categorize themselves as non-Ukrainian while having no clear effect (positive or negative) among others. The second study successfully replicated this original finding. While much remains to be learned about the mechanisms involved, we find part of the story to be that presidential endorsement can implicitly politicize health information, promoting rather than countering misinformation among the most "identity alienated" population. In this case, the president is unwittingly tapping into latent anti-Western sentiment and senses that mask-wearing and self-isolation are foreign impositions.

Keywords: health communication, presidential endorsement, misinformation, ethnicity, identity, geopolitics, COVID-19, mask-wearing, self-isolation, pandemic, Ukraine

[1] Any errors in this paper are the sole responsibility of this coauthor, who was so late in writing up the paper that the other coauthors had no chance to verify its contents before circulation for the conference.

People frequently take cues from their political leaders on what to do and believe, essentially delegating to elites the task of drawing conclusions from complex information environments (Druckman 2001). We also know identity can moderate this cueing: People sharing important identity categories with their leaders are more likely to view their statements as credible and therefore update their beliefs and change their behavior in line with the cue, while those in other identity categories are likely to see the statements as less credible and thus respond more weakly or even negatively (Barber and Pope 2019; Donovan et al. 2020; Iyengar et al. 2019). The degree to which any of this is the case when it comes to beliefs about public health remains poorly understood, however. Health beliefs are inherently personal in ways beliefs about taxation or climate change simply are not, meaning we cannot assume health beliefs follow elite cues in the same way beliefs about (say) taxation or climate change might. Because of this inherent personal intrusiveness, governments' public health advice is especially liable to be mistrusted or even seen as a tool of state population control (Gardner, Smith, and Mansfield 2017). And since health beliefs and resulting behavior can sometimes make the difference between life and death for believers themselves and others in the societies they inhabit, it becomes crucial to directly study the effect of political leaders' cues on health beliefs.

But while voluminous studies shed light on how people update beliefs and change behavior in response to media and public campaign messages on health (Bursztyn et al. 2020; Durken, Brennan, and Wakefiled 2012; Gollust, Fowler, and Niederdeppe 2019; Meulenaer, Pelsmacker, and Dens 2018; Park et al. 2020), and while it is frequently asserted that country leaders' statements in particular matter (Grant 2017), one strains to find even a single study that focuses systematically and directly on the impact of health communications coming specifically from a country's chief executive (here we focus on presidents). Perhaps the lone exception is a study by Anderson and Shafer (2019), who look at former U.S. President Donald Trump's messaging and time-series data on Affordable Care Act enrollments to establish that the former systematically depressed the latter.

The state of the field is similar when it comes to the potentially moderating role of ethnic identity. Research firmly establishes that partisan identity can moderate responsiveness to government health policy initiatives (Allcott et al. 2020; Brodie et al. 2019; Cornelson and Miloucheva 2020; Gollust, Fowler, and Niederdeppe 2019; Makridis and Rothwell 2020). When it comes to ethnic identity, some studies have found it can moderate responses to public health campaigns, with disadvantaged groups being more likely to resist (Oyserman, Fryberg, and Yoder 2007; Smart Richman, Blodorn, and Major 2016), while others find mixed or no ethnic identity differences (Merkley et al. 2020; Hornik and Ramirez 2006; Hudson 2008). But the present authors are aware of no study that directly addresses the potential for presidential health *communications* (as opposed to presidents' actual policies) to be differentially received along ethnic identity lines. Our study focuses on this particular question, investigating whether and how ethnic identity can mediate the effects of presidential messaging on important health-related beliefs, in particular the importance people attach to behaviors widely believed necessary to stem the spread of the COVID-19 pandemic.

In addition, it bears mention that nearly all systematic studies of elite cues' effects on health behavior, rare as they are, have been conducted in the United States or other Western countries. This is a major shortcoming of the literature given that this region is only a small minority of the world's population, not to mention the potential for health beliefs and behaviors in other parts of the world to have major impacts on Western countries themselves in cases of

infectious disease. By siting our study in Ukraine, we contribute to a more globally inclusive understanding of health communications effects.

Materials and Methods

We conducted two separate survey experiments in Ukraine, a country where the incumbent president (Volodymyr Zelensky) has been outspoken from the outset of the COVID-19 pandemic in advocating pro-health behaviors, including self-isolation and mask-wearing (Gorchinskaya 2020). Resoundingly defeating a rival whose campaign prominently resorted to ethnically divisive issues, Zelensky was elected in 2019 as a political newcomer through calls for national inclusiveness, conflict resolution, and an end to corruption (Rohozinska and Shpak 2019). His exceptionally broad-based appeal makes Ukraine an unlikely case for finding ethnic differences in how people respond to presidential health communications; if we find them here, we are even more likely to find them in more clearly ethnically divided political contexts.

Study 1: April 2020

Our first study was timed close to the onset of the coronavirus health crisis in Ukraine, taking place in April 22-24, 2020, during the country's initial lockdown period. The study involved adding a battery of questions to the highly reputable Kyiv International Institute of Sociology's (KIIS's) nationally representative "onmibus" telephone survey of 2,024 people chosen through a random sampling of mobile phone numbers. The central element was an experiment with four arms in which all respondents were instructed "I am going to read you a list of measures that people might take in response to the coronavirus. Please tell me whether you think people should always do them, should do them in most circumstances, should only on a few occasions do them, or whether they are not necessary at all." They were then given a list of three such measures that were widely thought by experts to be important at that point in the public health crisis: "wear a face mask when in public places," "stay at home except for groceries, medicine, and dog walking," and "avoid shaking hands with or kissing close friends or family who do not live with you." The control arm (N=511) received this question as just stated. The treatment group of primary interest (N=467) was exposed to the following information right before the start of the experimental question: "President Zelensky is calling on people to stay at home so as not to spread the infection." The second and third treatment arms received the same preamble except that "President Zelensky is..." was replaced with "Doctors are..." (N=522) and "Doctors and President Zelensky are..." (N=524), respectively.

Because we were centrally interested in ethnicity's potentially moderating role, we followed Onuch and Hale (2018) in including measures for four dimensions of Ukrainian identity that they recommend treating as conceptually distinct. These include language preference (a binary variable coded 1 for people who elected to take the survey in Ukrainian instead of Russian when asked by a bilingual interviewer in linguistically ambiguous terms), language practice (a binary variable coded 1 for people reporting speaking mainly Ukrainian in private life), self-declared native language (a binary variable coded 1 for people claiming Ukrainian as their native language, a quantity well established in Ukraine to reflect language identity more than language proficiency (Kulyk 2011)), and nationality (a binary variable coded 1 for people who identify as Ukrainian by nationality, the traditional Soviet and post-Soviet census category). Because we cannot treat these dimensions of identity as reflections of the same thing, and because clarity requires somehow simplifying our analysis of Ukraine's highly complex identity environment, we focus here on the case where all four identity category

dimensions overlap. That is, we create one analytical category ("all-Ukrainians") for people who identify as "Ukrainian" on all four dimensions, and one analytical category ("all-non-Ukrainians") for people who do not identify as "Ukrainian" on any of the four dimensions. If identity is moderating presidential communications effects, this should be evident in differences between these two categories.

In short, this study was designed to allow us to measure the extent to which ethnicity was moderating any effect of Zelensky's endorsement of health information, and to compare patterns regarding a Zelensky communication with those regarding communications from an unspecified medical authority.

Study 2

Our second study followed up on the first, seeking to replicate and refine the principal finding from Study 1 and also to shed light on mechanisms. It took place from September 26 to October 8, 2020, when the coronavirus public health crisis was rapidly escalating, daily numbers of new cases were nearly ten times higher than back in April, but the nationwide lockdown was no longer in place, having been replaced instead by a more flexible targeting of official restrictions on hotspots (Tompson et al. 2020). This study also primarily involved adding questions to a KIIS omnibus survey, which was conducted at that time using the same methodology as before, though with 2,004 total respondents instead of 2,024.

As with the first study, all respondents were instructed "I am going to read you a list of measures that people might take in response to the coronavirus. Please tell me whether you think people should always do them, should do them in most circumstances, should only on a few occasions do them, or whether they are not necessary at all." The primary item of interest on the list respondents received also remained identical to that on the first study: "wear a face mask when in public places." As before, the control group received only this text, no preamble to it (N=520). We did, though, update the information presented to the primary treatment group of interest, the one receiving the presidential prime (N=508). Reflecting the changed coronavirus situation, this group was informed in a preamble that "President Zelensky is calling on people to seriously limit their own personal conduct and their interactions with other people in order to avoid the spread of the new coronavirus." We also asked the very same questions about identity in Ukraine that we asked in the first study, creating the same four measures of the same four dimensions of identity that appeared in the first study, and the same distinction between all-Ukrainians and all-non-Ukrainians.

Beyond this replication effort, we extended the study in several ways designed for us to probe mechanisms and scope. For one thing, along with beliefs about the importance of mask-wearing, we also asked about the importance of avoiding large social gatherings, which by fall 2020 had become evident as a major source of coronavirus spread: "Avoid large crowds of people who do not live together." If identity were moderating presidential messages' effects on beliefs about not only mask-wearing but also gathering, we would have more evidence for the presence of a general tendency for ethnicity to moderate such communications. If not, we would have cause to focus on what it is about mask-wearing that appears to make ethnicity operative in that limited domain.

Second, we added two questions aimed at helping us test possible mechanisms through which ethnicity moderates presidential health communications. Right after being asked about the importance of the two health behaviors just described, therefore, we queried: "If we talk about the taking (or not) of the mentioned measures that people might take in response to the

coronavirus, what do you think about them? Please choose the option closest to your thinking." The five options were: "protecting oneself and one's family," "protecting others in Ukraine," "disruption to my life and livelihood," "an intrusion of the government into the lives of people," and "something forced on Ukraine from the West." Separate binary measures were created for people citing disruption, government intrusion, and Western imposition. They were then also asked their level of agreement with "Regardless of one's political views, it is generally important to do what the authorities say." This yielded a four-point scale. We also asked about their levels of approval of Zelensky's performance in office and whether they regarded Zelensky as an illegitimate president, from which we created two four-point scales. Finally, the questionnaire also included a question designed for other purposes that proves useful for probing possible geopolitical associations with identity that could be mediating the effects found here: to what extent people would agree with "I support protests against Lukashenko that are happening now in Belarus." These protests were widely seen as a struggle between Belarus's pro-Russian president and forces aiming to take Belarus in a more independent direction that would yield better relations with the West. Since we are interested in the most intense identity associations here, respondents in our survey who expressed the strongest support for Lukashenko were coded 1, all others 0, in a binary measure.

The third innovation was to add two new treatments that would allow us to explore related questions. One of these replaced "President Zelensky is..." with "Some people are..." (N=479). The other replaced "President Zelensky is..." with "Many local government officials are..." These enable us to further probe how presidential cues relate to cues from other sources. These two primes replaced the two primes mentioning doctors in the first study.

Analysis

The main outcome of interest is the average marginal effect of the Zelensky treatment group as measured for different identity subpopulations. More specifically, we want to identify whether conditional average treatment effects (CATEs) differ by ethnic category. Because we are primarily interested in heterogeneous effects, we need a method capable of addressing the risks of false findings that can come with using OLS or other regression models with interaction terms to identify such effects (Guess and Coppock 2020). Following recent methodological advice, we employ Bayesian Additive Regression Trees (BART) to estimate the heterogeneous treatment effects posited in this study.[2] A sum-of-trees machine learning technique, BART automates the process of identifying interaction effects, which constrains researcher discretion in the fine-tuning of models and thereby enhances reported results' credibility. BART also accounts for the simultaneous operation of all potential moderators included in the study, flexibly accounts for nonlinear relationships in the data, and performs well in head-to-head tests against alternative models in detecting heterogeneous treatment effects (Green and Kern 2012; Hill, Linero, and Murray 2020). All of our BART results account for the roles of the following variables in addition to those of primary interest discussed above: gender, age, poverty, rural residence, fear of coronavirus infection, higher education, and residence in different macroregions of Ukraine (West, Center, Southeast). For those parts of our analysis that do not involve heterogeneous treatment effects, however, we follow those scholars advocating the most simple, straightforward, and therefore transparent approach to calculating average treatment effects in

[2] We use the R package *dbarts* (version 0.9-18, June 12, 2020) to generate the results reported here (default parameters).

randomized controlled trials: simple OLS, with no weighting and no cluster-adjusted standard errors (Angrist and Pischke 2009; Franco et al. 2017).

Results

At the aggregate level, we consistently find no support for the proposition that receiving a pro-health message from a president can lead people to adopt pro-health beliefs of any kind (see Appendix). Both the original study and the replication, however, confirm that these aggregate results mask important effect heterogeneity along ethnic lines. Figure 1 presents the results of the main BART analysis, with the dots representing the conditional average treatment effects and the vertical lines representing 95-percent credible intervals. The first panel shows that in the April 2020 study, exposure to Zelensky's pro-health message made no significant difference in all-Ukrainians' propensity to believe in the importance of mask-wearing, but that it strongly backfired among all-non-Ukrainians. More precisely, among people who robustly identified as something other than Ukrainian, hearing Zelensky's advice led them to downgrade the importance of mask-wearing by about 0.17 points on the 1-4 scale, roughly a 6 percent drop. The second panel shows that this same pattern was found in the replication study, with a slightly larger backfire effect of nearly 0.2 points. Further analysis reveals that these heterogeneous effects do not boil down to any particular identity dimension, instead appearing to reflect the effects of category overlap (see figures presented in the Appendix).

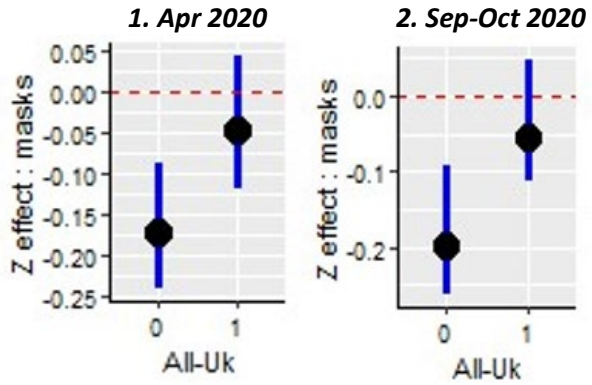


Figure 1. Average effects of exposure to Zelensky endorsement of pro-health beliefs on a four-point scale of the importance attached to mask-wearing among (0) all-non-Ukrainians and (1) all-Ukrainians in the April 2020 study (panel 1) and the September-October 2020 study (panel 2), calculated using BART, with 95-percent credible intervals.

What might underlie the backfire effect that we find among all-non-Ukrainians? Our study is designed to consider three broad possibilities. By one causal pathway, Zelensky's endorsement might be changing how this particular set of people (all-non-Ukrainians) perceive the health behaviors he recommends, introducing negative considerations that go on to change their beliefs about the behaviors. If so, it should first be the case that, among all-non-Ukrainians, the Zelensky treatment should promote negative associations with the pro-health behaviors in question. Table 1 reports some (if weak) evidence for this possibility: the groups receiving Zelensky's endorsement are about 10 percentage points more likely to think that mask-wearing and self-isolation are Western impositions and 4-6 percentage points more likely to think of them primarily as disruptions to their livelihood. The effects, however, approach traditional significance levels only for the Western imposition belief (p=.101 against the control, p=.081

against "some people"). Given the low statistical power available due to the relatively small numbers of all-non-Ukrainians in the relevant subsamples, these findings nevertheless suggest it is at least plausible that some causal relationship exists.[3] If so, we should also be able to observe two additional patterns. First, these associations should predict beliefs about mask-wearing and self-isolation among all-non-Ukrainians. And second, since we are positing that some of these associations result from the treatment, adding a control for the treatment should reduce the coefficients for the associations. Table 2 supplies strong support for these propositions. Models 1 and 3 show that despite the relatively small N, believing that these pro-health behaviors are Western impositions and focusing on their disruptive impact on livelihoods are both very strong negative predictors of mask-wearing and self-isolation, driving down their importance by nearly a whole point on a four-point scale. And indeed, comparing Models 2 and 4 to Models 1 and 3 shows that controlling for the Zelensky prime shrinks the coefficients for the negative associations by magnitudes of roughly 5-10 percent.

Table 1. Among all-non-Ukrainians only, average marginal effects of Zelensky prime on interpretations of calls for mask-wearing and self-isolation, simple bivariate OLS, odd numbered models compare Zelensky group to control (no endorsement), even numbered models compare Zelensky group to 'some people' endorsement group

	(1) Western imposition	(2) Western imposition	(3) Disruption	(4) Disruption	(5) Intrusion	(6) Intrusion
Ze prime	0.10	0.11^{+}	0.06	0.04	0.04	-0.08
	(0.06)	(0.06)	(0.05)	(0.05)	(0.04)	(0.06)
_cons	0.08^{+}	0.08	0.05	0.08^{+}	0.03	0.15**
	(0.04)	(0.05)	(0.04)	(0.04)	(0.03)	(0.04)
N	129	123	129	123	129	123

Standard errors in parentheses, $^{+}$ $p < .1$, * $p < 0.05$, ** $p < 0.01$

Table 2. Among all-non-Ukrainians, average marginal effects of Zelensky prime and interpretations of calls for mask-wearing and self-isolation on beliefs about the importance of these behaviors, simple OLS, relative to control group

	(1) Masks	(2) Masks	(3) Self-isolation	(4) Self-isolation
Western imposition	-1.03**	-0.95**	-0.77**	-0.72**
	(0.23)	(0.23)	(0.23)	(0.23)
Disruption	-0.70*	-0.62*	-0.94**	-0.88**
	(0.29)	(0.29)	(0.28)	(0.28)
Zelensky prime		-0.34*		-0.24
		(0.17)		(0.16)
Constant	3.25**	3.41**	3.30**	3.42**
	(0.09)	(0.12)	(0.09)	(0.12)
N	125	125	124	124

[3] Adding some confidence that these weak findings reflect a causal relationship, Table X in the appendix shows that when we conduct the same analysis in the full sample, not just all-non-Ukrainians, the Zelensky treatment is a statistically significant predictor of seeing pro-health measures as both Western impositions and disruptions relative to the "some people" group.

Standard errors in parentheses, $^{+}$ $p < .1$, * $p < 0.05$, ** $p < 0.01$

A different sort of causal pathway, instead of positing that Zelensky's message is *creating* negative associations among all-non-Ukrainians, would have Zelensky's message activating *preexisting* negative associations that are cognitively linked to all-non-Ukrainian identity. By this logic, the country's president is seen by the "identity alienated" (all-non-Ukrainians) as a symbol of a dominant outgroup, in which situation his endorsement activates ethnic frames that for all-non-Ukrainians come with proclivities to view mask-wearing and self-isolation negatively, as alien impositions. If a tendency to view mask-wearing and self-isolation as alien impositions is in fact linked to all-non-Ukrainness, we should be able to identify an association between all-non-Ukrainianness and four indicators of alienation measurable through our research design. These four indicators include the aforementioned beliefs that these measures are (1) Western impositions or (2) disruptive, (3) anti-Western/pro-Russian orientation, and (4) beliefs that obeying the authorities is unimportant. Table 3 confirms that three of these four variables are indeed strongly associated with all-non-Ukrainian identity. The odd-numbered models in Table 4 report that the remaining three potential mediators do strongly predict health beliefs in the expected directions. But if their relationship to health behaviors were reflective of ethnicity in the way posited here, adding a control for ethnicity should shrink their estimated coefficients. Comparing the even-numbered models with the odd-numbered ones in Table 4 shows, we see this not true for insubordination to authority (Obey) but is true (if only weakly so) for the geopolitical variables (seeing prohealth behaviors as Western impositions and backing Lukashenko).

Table 3. Average marginal effects of all-non-Ukrainian identity on variables that may be mediating the negative effect of Zelensky's messaging on pro-health beliefs, simple OLS, controlling for people whose four identity categories do not perfectly align as Ukrainian or not Ukrainian (DV's listed under model number)

	(1) Western imposition (binary)	(2) Disruption (binary)	(3) Obey (4-pt scale)	(4) Pro-Lukashenko (binary)	(5) Approve Ze (binary)	(6) Ze illegit (binary)
All-non-Ukrainian	0.05*	0.01	-0.21**	0.23**	-0.10**	0.02
	(0.03)	(0.02)	(0.07)	(0.03)	(0.04)	(0.02)
Imperfect overlap	0.05**	-0.02	-0.11*	0.07**	-0.01	-0.01
	(0.02)	(0.01)	(0.05)	(0.02)	(0.02)	(0.01)
Constant	0.10**	0.06**	2.33**	0.24**	0.43**	0.08**
	(0.01)	(0.01)	(0.04)	(0.02)	(0.02)	(0.01)
N	2004	2004	1800	2004	2004	2004

Standard errors in parentheses, $^{+}$ $p < .1$, * $p < 0.05$, ** $p < 0.01$

Table 4. Average marginal effects of possible mediators of ethnicity's moderating effects on a four-point scale of the importance attached to mask-wearing, simple OLS

	(1)	(2)	(3)	(4)	(5)	(6)
Western imposition	-0.91**	-0.89**				
	(0.06)	(0.06)				
Obey			0.20**	0.20**		
			(0.03)	(0.03)		

Pro-Lukashenko					-0.34**	-0.31**
					(0.05)	(0.05)
All-non-Ukrainian		-0.26**		-0.28**		-0.23**
		(0.07)		(0.08)		(0.08)
Imperfect overlap		-0.15**		-0.16**		-0.17**
		(0.05)		(0.05)		(0.05)
Constant	3.18**	3.28**	2.61**	2.74**	3.16**	3.27**
	(0.02)	(0.04)	(0.06)	(0.07)	(0.03)	(0.04)
N	1962	1962	1774	1774	1962	1962

Standard errors in parentheses, $^{+}p < .1$, $^{*}p < 0.05$, $^{**}p < 0.01$

Finally, we consider whether political alignments might underlie the ethnically heterogeneous effects of Zelensky's communications. If all-non-Ukrainianness is associated with opposition to Zelensky, all-non-Ukrainians may come to oppose these health measures simply because he is the one endorsing them. Column 6 of Table 3 finds no relationship between all-non-Ukrainian identity and believing Zelensky is not a legitimate president, but Column 5 finds that all-non-Ukrainians are 10 percent less likely to declare support for Zelensky. Might this association be accounting for the negative effect of Zelensky's health advice on pro-health beliefs among all-non-Ukrainians? Table 5 suggests that this is, at best, likely to be only a small part of the causal story. While Zelensky's job approval is a strong predictor of believing in the importance of mask-wearing, this effect diminishes hardly at all when we control for all-non-Ukrainian identity--by only one percentage point. This indicates that ethnicity and job approval are, for the most part, separately related to mask-wearing, without one factor serving mainly to channel the other.

Table 5. Average marginal effects of Zelensky support (binary variable) and all-non-Ukrainian identity on a four-point scale of the importance attached to mask-wearing, simple OLS

	(1)	(2)
Approve Zelensky	0.19**	0.18**
	(0.05)	(0.05)
All-non-Ukrainian		-0.29**
		(0.08)
Imperfect overlap		-0.19**
		(0.05)
Constant	2.97**	3.11**
	(0.03)	(0.04)
N	1962	1962

Standard errors in parentheses, $^{+}p < .1$, $^{*}p < 0.05$, $^{**}p < 0.01$

Discussion

Overall, our two studies have established not only that ethnic identity is capable of moderating the effects of presidential health communcations, but that the latter are liable to backfire among groups that we might call the most "identity alienated" from the country. At a time when identity in Ukraine has been "tipping" toward a more inclusive Ukrainianness, including "shedding Russianness" (Kulyk 2018), those who most robustly resist this trend are also found to be more

likely to embrace misinformation in the COVID-19 pandemic when exposed to information from the president of the country whose majority identity categories are not considered "theirs." Since Ukraine has notoriously weak political parties and since Zelensky himself did not form a party until after his presidential win as a political outsider less than a year before the pandemic's onset, the limited backfire we find does not grow out of partisanship. It may, we find, grow partly out of simple patterns of political support, with political opponents whose opposition is rooted in identity taking whatever the president says as worthy of rejecting, but this is at best a small part of the story. We find more evidence that geopolitical considerations underlie all-non-Ukrainians' strikingly negative reaction to Zelensky's prohealth advice. Not only are all-non-Ukrainians more likely to be skeptical of the West and to see calls for mask-wearing and self-isolation as Western impositions on Ukraine, but there is weak but noteworthy evidence that Zelensky actually spurs people to see these calls this way when he endorses them. At the same time, our evidence indicates this is unlikely to be the full story, calling attention to the need for future studies capable of identifying other mechanisms through which ethnicity can create informational backfire in presidential health communications.

References

Allcott, Hunt, Levi Boxell, Jacob C Conway, Matthew Gentzkow, Michael Thaler, and David Y Yang. 2020. "Polarization and Public Health: Partisan Differences in Social Distancing during the Coronavirus Pandemic." Working Paper 26946. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w26946.

Anderson, David, and Paul Shafer. 2019. "The Trump Effect: Postinauguration Changes in Marketplace Enrollment." *Journal of Health Politics, Policy and Law* 44 (5): 715–36. https://doi.org/10.1215/03616878-7611623.

Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, N.J.: Princeton University Press.

Barber, Michael, and Jeremy C. Pope. 2019. "Does Party Trump Ideology? Disentangling Party and Ideology in America." *American Political Science Review* 113 (1): 38–54. https://doi.org/10.1017/S0003055418000795.

Brodie, Mollyann, Elizabeth C. Hamel, Ashley Kirzinger, and Bianca Dijulio. 2019. "Partisanship, Polling, and the Affordable Care Act." *Public Opinion Quarterly* 83 (2): 423–49. https://doi.org/10.1093/poq/nfz016.

Bursztyn, Leonardo, Aakaash Rao, Christopher Roth, and David Yanagizawa-Drott. 2020. "Misinformation During a Pandemic." BFI Working Paper. Chicago: Becker Friendman Institute for Economics, University of Chicago. https://bfi.uchicago.edu/working-paper/2020-44/.

Cornelson, Kirsten, and Boriana Miloucheva. 2020. "Political Polarization, Social Fragmentation, and Cooperation during a Pandemic." 663. University of Toronto Department of Economics Working Paper. Toronto. https://www.economics.utoronto.ca/index.php/index/research/workingPaperDetails/663.

Donovan, Kathleen, Paul M. Kellstedt, Ellen M. Key, and Matthew J. Lebo. 2020. "Motivated Reasoning, Public Opinion, and Presidential Approval." *Political Behavior* 42 (4): 1201–21. http://dx.doi.org/10.1007/s11109-019-09539-8.

Druckman, James N. 2001. "On the Limits of Framing Effects: Who Can Frame?" *The Journal of Politics* 63 (4): 1041–66.

Durken, Sarah, Emily Brennan, and Melanie Wakefiled. 2012. “Mass Media Campaigns to Promote Smoking Cessation among Adults: An Integrative Review.” *Tobacco Control* 21 (2): 127–38.

Franco, Annie, Neil Malhotra, Gabor Simonovits, and L. J. Zigerell. 2017. “Developing Standards for Post-Hoc Weighting in Population-Based Survey Experiments.” *Journal of Experimental Political Science* 4 (2): 161–72. https://doi.org/10.1017/XPS.2017.2.

Gardner, Benjamin, Lee Smith, and Louise Mansfield. 2017. “How Did the Public Respond to the 2015 Expert Consensus Public Health Guidance Statement on Workplace Sedentary Behaviour? A Qualitative Analysis.” *BMC Public Health* 17 (47). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5288998/.

Gollust, Sarah E., Erika Franklin Fowler, and Jeff Niederdeppe. 2019. “Television News Coverage of Public Health Issues and Implications for Public Health Policy and Practice.” *Annual Review of Public Health* 40 (1): 167–85. https://doi.org/10.1146/annurev-publhealth-040218-044017.

Gorchinskaya, Katya. 2020. “Some Citizens Chafe, Businesses Push Back As COVID-19 Lockdown Lengthens In Ukraine.” *RFE/RL*, April 30, 2020. https://www.rferl.org/a/ukrainians-chafe-businesses-push-back-as-covid-19-lockdown-lengthens/30585399.html.

Grant, Roy. 2017. “Public Health Professionals Urgently Need to Develop More Effective Communications Strategies.” *American Journal of Public Health* 107 (5): 658–59. https://doi.org/10.2105/AJPH.2017.303738.

Green, Donald P., and Holger L. Kern. 2012. “Modeling Heterogeneous Treatment Effects in Survey Experiments with Bayesian Additive Regression Trees.” *Public Opinion Quarterly* 76 (3): 491–511. https://doi.org/10.1093/poq/nfs036.

Guess, Andrew, and Alexander Coppock. 2020. “Does Counter-Attitudinal Information Cause Backlash? Results from Three Large Survey Experiments.” *British Journal of Political Science* 50 (4): 1497–1515. https://doi.org/10.1017/S0007123418000327.

Hill, Jennifer, Antonio Linero, and Jared Murray. 2020. “Bayesian Additive Regression Trees: A Review and Look Forward.” *Annual Review of Statistics and Its Application* 7 (1): 251–78. https://doi.org/10.1146/annurev-statistics-031219-041110.

Hornik, Robert C., and A. Susana Ramirez. 2006. “Racial/Ethnic Disparities and Segmentation in Communication Campaigns.” *American Behavioral Scientist* 49 (6): 868–84. https://doi.org/10.1177/0002764205283806.

Hudson, Chris. 2008. “Singapore at War: SARS and Its Metaphors.” In *The Social Construction of SARS: Studies of a Health Communication Crisis*, edited by John H. Powers and Xiaosui Xiao, 163–80. Amsterdam/Philadelphia: John Benjamins Publishing.

Iyengar, Shanto, Yphtach Lelkes, Matthew Levendusky, Neil Malhotra, and Sean J. Westwood. 2019. “The Origins and Consequences of Affective Polarization in the United States.” *Annual Review of Political Science* 22 (1): 129–46. https://doi.org/10.1146/annurev-polisci-051117-073034.

Kulyk, Volodymyr. 2011. “Language Identity, Linguistic Diversity and Political Cleavages: Evidence from Ukraine.” *Nations and Nationalism* 17 (3): 627–48.

———. 2018. “Shedding Russianness, Recasting Ukrainianness: The Post-Euromaidan Dynamics of Ethnonational Identification in Ukraine.” *Post-Soviet Affairs* 34 (2–3): 119–38. https://doi.org/10.1080/1060586X.2018.1451232.

Makridis, Christos, and Jonathan T. Rothwell. 2020. “The Real Cost of Political Polarization: Evidence from the COVID-19 Pandemic.” SSRN Scholarly Paper ID 3638373. Rochester, NY: Social Science Research Network. https://papers.ssrn.com/abstract=3638373.

Merkley, Eric, Aengus Bridgman, Peter John Loewen, Taylor Owen, Derek Ruths, and Oleg Zhilin. 2020. “A Rare Moment of Cross-Partisan Consensus: Elite and Public Response to the COVID-19 Pandemic in Canada.” *Canadian Journal of Political Science/Revue Canadienne de Science Politique*, April, 1–8. https://doi.org/10.1017/S0008423920000311.

Meulenaer, Sarah De, Patrick De Pelsmacker, and Nathalie Dens. 2018. “Power Distance, Uncertainty Avoidance, and the Effects of Source Credibility on Health Risk Message Compliance.” *Health Communication* 33 (3): 291–98. https://doi.org/10.1080/10410236.2016.1266573.

Onuch, Olga, and Henry E. Hale. 2018. “Capturing Ethnicity: The Case of Ukraine.” *Post-Soviet Affairs* 34 (2–3): 84–106. https://doi.org/10.1080/1060586X.2018.1452247.

Oyserman, Daphna, Stephanie A. Fryberg, and Nicholas Yoder. 2007. “Identity-Based Motivation and Health.” *Journal of Personality and Social Psychology* 93 (6): 1011–27. https://doi.org/10.1037/0022-3514.93.6.1011.

Park, Sun-Young, Hyunsang Son, Jaejin Lee, and Eun Go. 2020. “Moderating Effects of Social Norms and Alcohol Consumption on Message Framing in Responsible Drinking Campaigns: Value from Deviance Regulation Theory.” *Health Communication* 35 (7): 793–803. https://doi.org/10.1080/10410236.2019.1593077.

Rohozinska, Joanna, and Vitaliy Shpak. 2019. “Ukraine’s Post-Maidan Struggles: The Rise of an ‘Outsider’ President.” *Journal of Democracy* 30 (3): 33–47. https://doi.org/10.1353/jod.2019.0040.

Smart Richman, Laura, Alison Blodorn, and Brenda Major. 2016. “An Identity-Based Motivational Model of the Effects of Perceived Discrimination on Health-Related Behaviors.” *Group Processes & Intergroup Relations* 19 (4): 415–25. https://doi.org/10.1177/1368430216634192.

Tompson, William, Gabriela Miranda, Geoff Upton, and Ksenia Lytvynenko. 2020. “The Covid-19 Crisis in Ukraine.” OECD. OECD. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwinoPqhrbDwAhWoFlkFHS9_CUUQFjABegQIAhAD&url=https%3A%2F%2Fwww.oecd.org%2Feurasia%2Fcompetitiveness-programme%2Feastern-partners%2FCOVID-19-CRISIS-IN-UKRAINE.pdf&usg=AOvVaw3PeymE9nIHkblM8ewlAQUm.

Acknowledgments

This study was supported by a grant from the British Academy (Onuch et al.) and funds from ZOiS and George Washington University’s Petrach Program on Ukraine at the Elliott School of International Affairs’ Institute for European, Russian, and Eurasian Studies (IERES).

Declaration of Interest Statement

The authors have no conflicts of interest to report.

Appendix

1. Wording of Main Questions Used in the April 2020 Study (in the order they appeared on the questionnaire)

[language] [In what language is it most comfortable for the respondent to speak with you?]

1. Ukrainian → Interview in Ukrainian	54.05
2. Russian → Interview in Russian	37.13
3. The same, but more often talks in Ukrainian → Interview in Ukrainian	5.31
4. Hard to say, but answers in Ukrainian → Interview in Ukrainian	0.89
5. All the same, but more often talks in Russian → Interview in Russian	2.14
6. Hard to say, but answers in Russian → Interview in Russian	0.48

Let us begin with a few questions on language. Please tell us:

{Key: 1. Ukrainian, 2. Russian, 3. Other [_____], 4. Russian and Ukrainian about equally, 97.H/S, 98.REF}

1. What language do you usually speak in private life? If you speak several languages in private life, then please say which one you consider the main one.

1. Ukrainian	50.63
2. Russian	28.25
3. Other [_____]	2.11
6. Russian and Ukrainian about equally	18.87
97.H/S	0.13
98.REF	0

2. Which language do you consider your native language?

1. Ukrainian	67.77
2. Russian	18.48
3. Other [_____]	1.98
6. Russian and Ukrainian about equally	11.13
97.H/S	0.64
98.REF	0

[RANDOMIZATION: 4 GROUPS] **[INSERT TREATMENT HERE] I am going to read you a list of personal measures that people might take in response to the COVID-19 virus. Please tell me whether you think people should always do them, should do them in most circumstances, should only on a few occasions do them, or whether they are not necessary at all.**

{KEY: 1. Always should; 2. In most circumstances should; 3. Only in a few special circumstances; 4. Not necessary at all.}

1. Wear a face mask when in public places

2. Stay at home except for groceries, medicine, and dog walking

3. Avoid shaking hands with or kissing close friends or family who do not live with you

Treatments

A. CONTROL [NO PRIME] (N=511)

B. Doctors are calling on people to stay at home so as not to spread the infection (N=522)

C. President Zelensky is calling on people to stay at home so as not to spread the infection (N=467)

D. Doctors and President Zelensky are calling on people to stay at home so as not to spread the infection (N=524)

Who do you consider yourself to be by nationality? [ONE ANSWER, DO NOT READ OUT OPTIONS]

1. Ukrainian	88.28
2. Russian	4.68
3. RUSSIAN AND UKRAINIAN [VOLUNTEERED RESPONSE]	3.10
4. Belurusian → D5	
5. Moldovan → D5	
6. Crimean Tatar→ D5	
7. Bulgarian → D5	
8. Hungarian → D5	
9. Romanian → D5	
10. Polish → D5	
11. Jewish → D5	
12. Other → D5	
13. H/S → D5	

2. Wording of Main Questions Used in the September-October 2020 Study (in the order they appeared on the questionnaire)

Language preference for the survey

1. Ukrainian	49.96
2. Russian	42.99
3. Equally, but more often in Ukrainian	3.39
4. Hard to say - said in Ukrainian	0.71
5. Equally, but more often in Russian	2.42
6. Hard to say, said in Russian	0.53

[RANDOMIZATION: 4 GROUPS] [INSERT VERSION OF QUESTION A, B, C, OR D HERE] **I am going to read you a list of measures that people might take in response to the coronavirus. Please tell me whether you think people should always do them, should do them in most circumstances, should only on a few occasions do them, or whether they are not necessary at all.**

{KEY: 1. Always should; 2. In most circumstances should; 3. Only in a few special circumstances; 4. Not necessary at all.}

1. Wear a face mask when in public places

2. Avoid large crowds of people who do not live together

Versions of question preamble

A. CONTROL [NO PRIME]

B. Some people are calling on people to seriously limit their own personal conduct and their interactions with other people in order to avoid the spread of the new coronavirus

C. President Zelensky is calling on people to seriously limit their own personal conduct and their interactions with other people in order to avoid the spread of the new coronavirus

D. Many local government officials are calling on people to seriously limit their own personal conduct and their interactions with other people in order to avoid the spread of the new coronavirus

If we talk about the taking (or not) of the mentioned measures that people might take in response to the coronavirus, what do you think about them? Please choose the option closest to your thinking.

1. Protecting oneself and one's family	**43.94**
2. Protecting others in Ukraine	**21.02**

3. Disruption to my life and livelihood	**5.81**
4. An intrusion of the government into the lives of people	**8.56**
5. Something forced on Ukraine from the West	**13.36**
97. H/S	**7.05**
98. Refuse	**0.25**

Please tell me, do you fully agree, tend to agree, tend not to agree, or completely disagree with the statement: Regardless of one's political views, it is generally important to do what the authorities say.

1. Fully agree	**8.90**
2. Tend to agree	**25.55**
3. Tend to disagree	**34.68**
4. Completely disagree	**21.14**
97. H/S	**8.97**
98. REF	**0.77**

Some people like how their political leaders are doing their jobs, while others do not. What about you, do you fully approve, tend to approve, tend to disapprove, or completely disapprove of the activities of the following politicians?

Volodymyr Zelensky as president

1. Fully approve	14.22
2. Tend to approve	27.54
3. Tend to disapprove	23.10
4. Completely disapprove	24.50
97. H/S	9.68
98. Refuse	0.95

Now let us think about different things with which someone might agree or disagree. Please tell me, do you agree, tend to agree, tend to disagree, or disagree that...?

{Key: 1. Agree, 2. Tend to agree, 3. Tend to disagree, 4. Disagree, , 97.H/S, 98.REF}

2. I support protests against Lukashenko which are happening now in Belarus

1. Agree	25.34
2. Tend to agree	16.76
3. Tend to disagree	12.16
4. Disagree	29.88
97. H/S	14.17
98.REF	1.70

5. President Zelensky is the legally elected president

1. Agree	73.31
2. Tend to agree	14.80
3. Tend to disagree	3.61
4. Disagree	4.01
97. H/S	3.64
98.REF	0.64

Please tell us:

1. What language do you usually speak in private life? If you speak several languages in private life, then please say which one you consider the main one.

1. Ukrainian	45.56
2. Russian	30.99
3. Other [_____]	3.59

6. Russian and Ukrainian about equally	19.46
97. H/S	0.30
98. REF	0.10

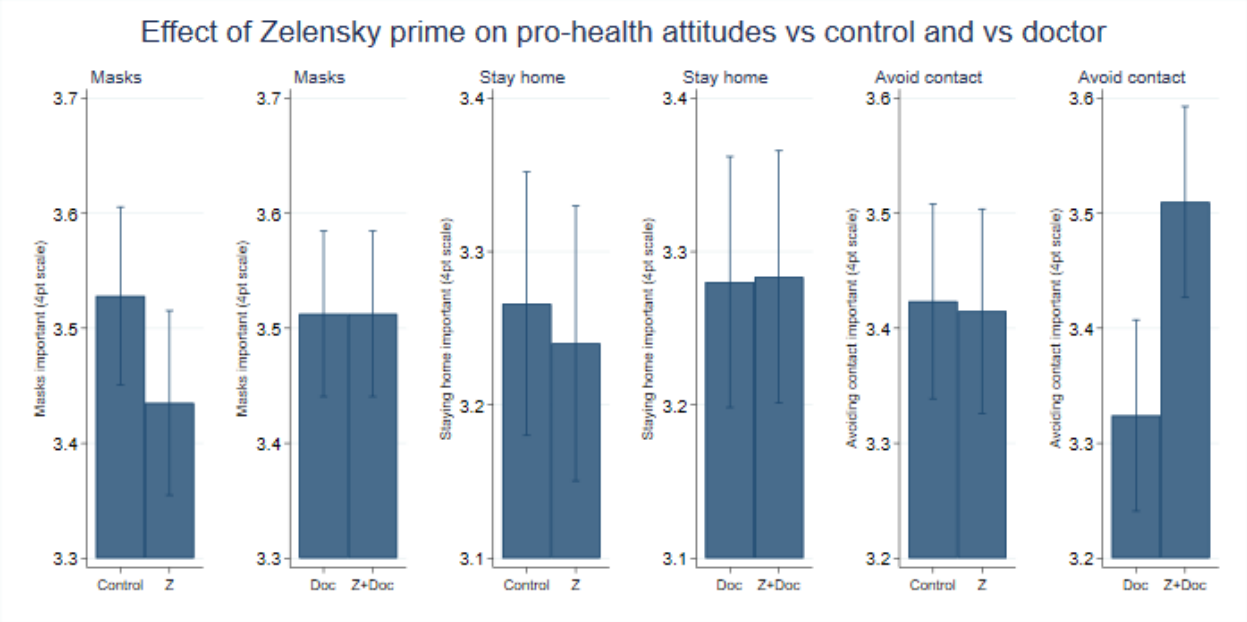
2. Which language do you consider your native language?

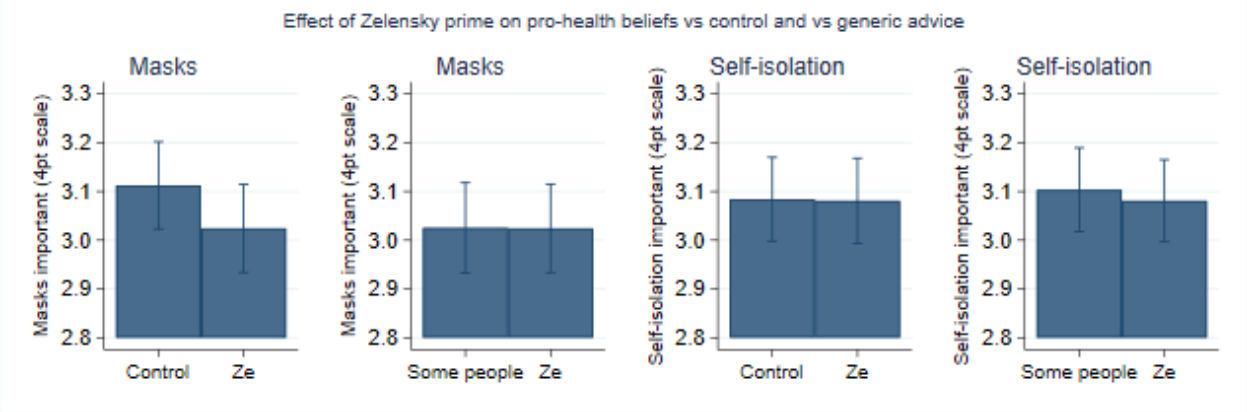
1. Ukrainian	68.16
2. Russian	17.59
3. Other [_____]	2.32
6. Russian and Ukrainian about equally	10.94
97. H/S	0.72
98. REF	0.28

With what nationality do you associate yourself?

1. Ukrainian	87.08
2. Russian	6.70
3. Ukrainian and Russian (volunteered)	3.00
...	
13. Hard to say	1.12

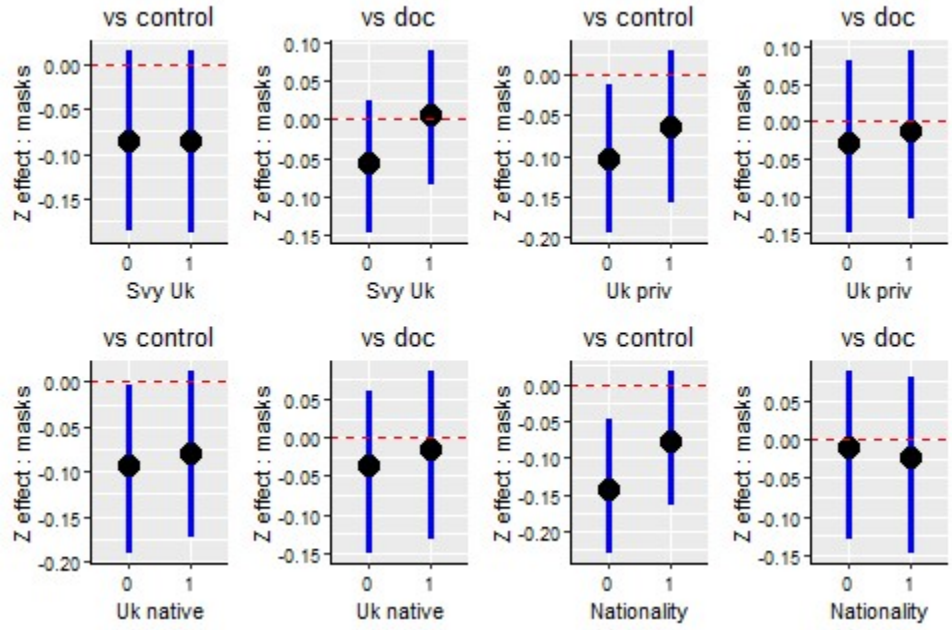
3. Aggregate average treatment effects



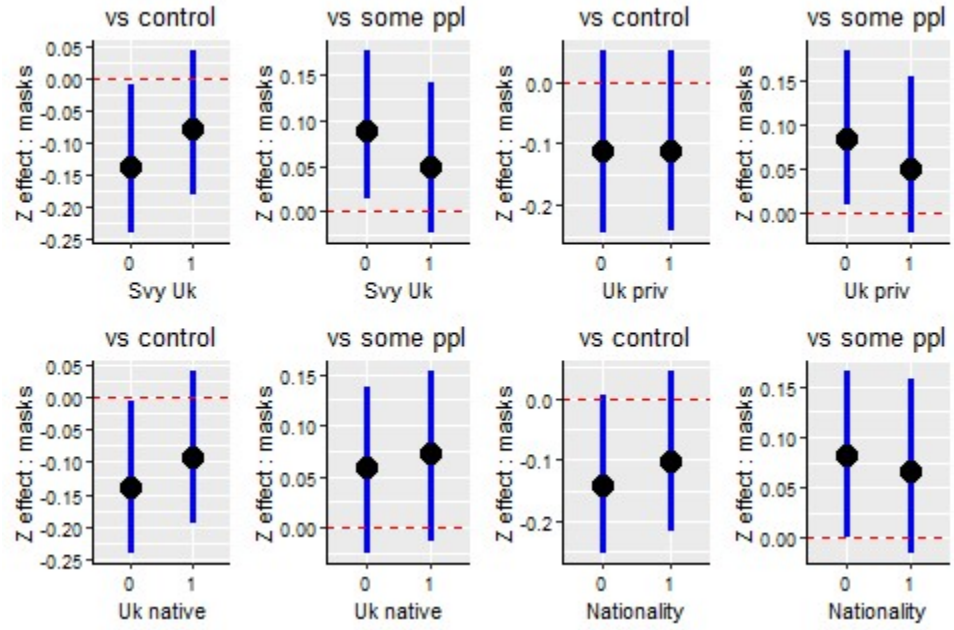


4. Results by individual identity dimensions (binaries)

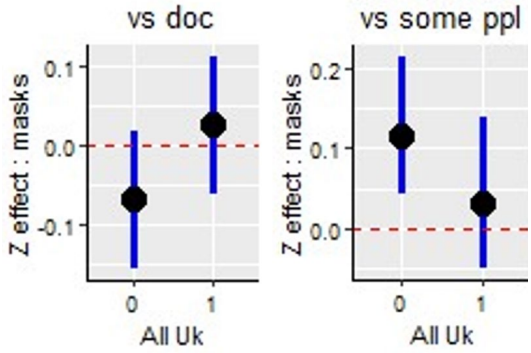
April 2020:



September-October 2020:



5. Zelensky effects relative to doctors (study 1) and relative to "some people" (study 2)



6. Effects of Zelensky prime on associations with pro-health behaviors

Table X. For whole population, average marginal effects of Zelensky prime on interpretations of calls for mask-wearing and self-isolation, simple OLS, odd numbered models compare Zelensky group to control (no endorsement), even numbered models compare Zelensky group to "some people" endorsement group

	(1) Western imposition	(2) Western imposition	(3) Disruption	(4) Disruption	(5) Intrusion	(6) Intrusion
Ze endorse	0.03	0.07**	0.01	0.03*	-0.02	-0.01
	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Constant	0.14**	0.10**	0.06**	0.04**	0.09**	0.09**
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
N	1028	987	1028	987	1028	987

Standard errors in parentheses, $^{+}p < .1$, $^{*}p < 0.05$, $^{**}p < 0.01$