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Can a pandemic make people more socially conservative? Political ideology, gender roles, and the case of COVID-19

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Abstract

The first months of 2020 rapidly threw people into a period of societal turmoil and pathogen threat with the COVID-19 pandemic. By promoting epistemic and existential motivational processes and activating people's behavioral immune systems, this pandemic may have changed social and political attitudes. The current research specifically asked the following question: As COVID-19 became pronounced in the United States during the pandemic's emergence, did people living there become more socially conservative? We present a repeated-measures study ($N = 695$) that assessed political ideology, gender role conformity, and gender stereotypes among U.S. adults before (January 25–26, 2020) versus during (March 19–April 2, 2020) the pandemic. During the pandemic, participants reported conforming more strongly to traditional gender roles and believing more strongly in traditional gender stereotypes than they did before the pandemic. Political ideology remained constant over time. These findings suggest that a pandemic may promote the preference for traditional gender roles.

1 | INTRODUCTION

During the first months of 2020, societies across the world became plagued by the COVID-19 outbreak, leading the World Health Organization to declare COVID-19 a pandemic on March 11 (World Health Organization [WHO], 2020b) and the United States to declare a state of national emergency on March 13. The prevalence of COVID-19 grew exponentially during the virus's first week as an official pandemic, with the number of U.S. cases rising by more than 7-fold—from 987 to 7,100 (WHO, 2020a)—from March 11 to 18. As individuals experienced everyday life during a time of societal turmoil and pathogen threat, their psychological defense mechanisms and motivational systems may have been put on guard, informing the way they felt about social, moral, and political matters. In the current paper, specifically, we focus on the following question: Could the COVID-19 pandemic have made people more socially conservative?

Endorsing socially conservative over liberal ideology reflects a general preference for stability and traditional values over change and progressive values (Jost et al., 2009). Yet, conservatism is not simply a fixed individual-differences variable but rather a malleable state sensitive to many of the situational forces resulting from COVID-19's emergence (Beall et al., 2016; Jost et al., 2003; Murray & Schaller, 2012). In the present research, we investigate potential implications of COVID-19 for political ideology as a global construct and for a specific domain of social and political attitudes: gender. We focus on conformity to traditional gender roles, or the extent to which individuals identify with and endorse traditional masculinity versus femininity (Kachel et al., 2016). Below, we consider two perspectives—motivated social cognition and the behavioral immune system—on how the COVID-19 pandemic may have shifted political ideology and gender role attitudes.

2 | MOTIVATED SOCIAL COGNITION

Conservatism is theorized to be a state of motivated social cognition—one that can be situationally prompted in response to uncertainty and existential threat (Jost et al., 2003). The COVID-19 pandemic amplified both uncertainty and existential threat, the former of which may have precipitated system-justifying cognitions, need for structure, and intolerance of ambiguity and the latter of which may have precipitated death anxiety.

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Uncertain societal and cultural conditions resulting from COVID-19 disrupted familiar norms and traditions, creating unknowns about the present and future. Espousing viewpoints that justify the existing social order may defuse the discomfort brought on by uncertainty (Jost et al., 2012; Jost & Hunyady, 2005). Early theorizing by Wilson (1973) suggests that adopting a conservative ideology may enable individuals to manage feelings of threat and anxiety that environmental uncertainty evokes. Likewise, system justification theory suggests that people can readily become ideologically motivated to defend existing social systems in the face of threat, instability, and change (Jost et al., 2004). In essence, environmental uncertainty can promote conservatism by motivating a need for structure, a desire to preserve the status quo, and resistance to social change (Jost et al., 2003). This effect is observed historically in U.S. presidential elections, throughout which times of greater societal threat to the established order have predicted increases in preferences for political conservativism (McCann, 1997). Additionally, people in the United States reported more conservative attitudes after the terrorist attacks of 9/11/01 than before, regardless of whether they personally self-identified as liberal versus conservative (Bonanno & Jost, 2006; Nail & McGregor, 2009). The uncertain societal conditions resulting from the COVID-19 pandemic may have similar effects, making conservatism an increasingly appealing worldview that can preserve familiar systems and create a sense of structure.

Uncertainty may also promote preference for conservatism through enhanced disliking of ambiguity (Jost et al., 2003), an effect that may particularly drive preference for traditional gender role conformity (Makwana et al., 2018). Ambiguous situations—such as blurred lines between men and women—can seem threatening (Budner, 1962). Ambiguity intolerance promotes essentialist, rigid, categorically dichotomized reasoning in domains such as morality and gender roles (Frenkel-Brunswik, 1948; Furnham & Ribchester, 1995), which may enhance perceptions that men ought to be traditionally masculine (e.g., powerful and brave) and women ought to be traditionally feminine (e.g., cleanly and pristine). The COVID-19 pandemic's ensuing uncertainty may have lowered individuals' thresholds for gender ambiguity tolerance, leading to greater preference for traditionally dichotomous gender roles. Valuing compliance with gender binary norms may have helped enable individuals to maintain a sense of clarity and social order during environmental turmoil.

In addition to uncertainty threats, the COVID-19 pandemic also posed *existential* threats. When threats to social order involve fear of death, they may be particularly likely to promote conservatism (Jost et al., 2003). A terror management theory (Greenberg et al., 1986) approach to a motivated social cognition model of conservatism suggests that adhering to established belief systems and identities can enable individuals to achieve existential security (Jost et al., 2009). Thinking about an infectious disease outbreak can prime death-related thoughts and spur people to defend worldviews, as research has found in studying the Ebola epidemic of 2014 (Arrowood et al., 2017) and the 2009 Swine Flu pandemic (Bélanger et al., 2013). Given that COVID-19 quickly boasted a high and exponentially growing death toll by mid-to-late March (WHO, 2020a), its pandemic likely primed mortality salience and stimulated defense mechanisms that promote conservative political viewpoints and traditional beliefs about gender.

3 | THE BEHAVIORAL IMMUNE SYSTEM

Pathogen threat presents a notable element intertwined with the COVID-19 pandemic, setting it apart psychologically from many other types of disaster. Unlike the turmoil that results from a natural disaster (e.g., hurricane, earthquake, and flood) or a terrorist attack, this pandemic brought a ubiquitous sense of disease risk. During the emergence of the COVID-19 pandemic, individuals faced not only instability and uncertainty of social order but also threat of contracting the COVID-19 virus from their surrounding social and physical environments.

Experiencing pathogen threats can influence moral and political psychology through a *behavioral immune system* (Schaller, 2006; Schaller & Park, 2011). Research on the behavioral immune system suggests that elevated disease risk can make individuals more socially conservative by reconfiguring their sense of morality to prioritize disease-avoidance, which can be done through supporting social conformity and traditional values (Murray & Schaller, 2016; Terrizzi et al., 2013). This moral shift may have pushed individuals toward a more conservative ideology as COVID-19 spread, leading them to value traditional gender roles more strongly and to feel less tolerant of gender role violations.

Two mechanisms through which activation of the behavioral immune system may promote conservatism include disgust sensitivity and fear of contamination (Terrizzi et al., 2013). A powerful adaptation that humans have evolved for avoiding disease is the capacity to feel disgusted (Curtis et al., 2011; Oaten et al., 2009; Rozin & Fallon, 1987). Yet disgust not only prevents people from ingesting contaminants and coming into contact with contagious others, but also serves to protect social and moral order by coordinating condemnation of norm violations (Tybur et al., 2013). In this vein, the experience of feeling disgusted may psychologically spill over into one's moral judgments and promote socially conservative attitudes (Dasgupta et al., 2009; Hodson et al., 2013; Inbar et al., 2012; Inbar, Pizarro, Iyer, et al., 2012; Terrizzi et al., 2010). The effect of pathogen threat on ideology may even operate in the absence of feeling disgusted, should contamination fears become salient. Simply priming people with the idea of cleanliness (e.g., by seeing hand sanitizer or using antiseptic hand wipes) can make them more conservative (Helzer & Pizarro, 2011). Accordingly, pathogen threats posed by the COVID-19 pandemic were a probable stimulus of conservatism even among individuals who themselves did not *feel* disgusted during the pandemic. Given that hygiene maintenance (namely, handwashing) has been widely promoted as a measure to prevent COVID-19 transmission, chronically elevated fears of contamination may independently

have sufficed to drive conservative attitudes via activation of the behavioral immune system, with or without the recruitment of disgust (Tybur et al., 2016).

4 | THE CURRENT RESEARCH

In the current research, we tracked within-person changes in U.S. adults' political ideology and gender role attitudes from before to during the COVID-19 pandemic. We assessed political ideology as a global construct, representing the degree to which one self-identifies as liberal versus conservative. We assessed gender role attitudes through two variables, one variable capturing one's personal identification with traditionally masculinity versus femininity and another variable capturing one's expectations that other people should act in accordance with stereotypes ascribed traditionally to their gender.

Most proximal to the current study are two previous studies that compared attitudes from before to during the Ebola epidemic of 2014. In one study, Beall et al. (2016) examined voting intentions preceding the 2014 U.S. federal elections by tracking changes in polling results, finding strong evidence that support for conservative candidates increased after the initial U.S. Ebola outbreak, primarily driven by states with preexisting conservative norms. In another study, Inbar et al. (2016) examined attitudes toward gay men and lesbians by tracking changes in data gathered via the Project Implicit website during 2010–2014. Findings of this study were inconsistent and of very small effect, providing suggestive evidence that the Ebola epidemic slightly increased implicit, but not explicit, bias against gay people.

The current research on the COVID-19 pandemic can build on these studies to advance understanding of how infectious disease outbreaks may affect social and political attitudes. First, our research used a within-person design, comparing data from the same participants at two different time points (before vs. during the pandemic). This design provides a more controlled test of attitude change and facilitates theoretically valuable moderation analyses. Second, given that COVID-19 cases were monumentally more prevalent in the United States than were Ebola cases—including at the time of the current study's data collection, which occurred early in the first few weeks of the COVID-19 pandemic's course—the COVID-19 crisis may provide a stronger naturalistic manipulation.

4.1 | Study hypotheses

We hypothesized that—compared to before the COVID-19 pandemic—during the pandemic, participants would report more conservative political ideology, higher gender role conformity, and stronger gender stereotypes. Each of these three effects would reflect a facet of increased support for a conservative worldview. We hypothesized that these effects would be moderated by the extent to which participants were concerned about the pandemic's health risks, being larger for participants who are high in concern than for participants who are low in concern.

While these predictions reflect a broader "conservative-shift" hypothesis (Bonanno & Jost, 2006; Nail et al., 2009), whereby the COVID-19 pandemic could make all individuals more conservative, we note alternative predictions that stem from the "worldview-defense" hypothesis (Burke et al., 2013): Rather than causing an unwavering shift toward conservatism, the pandemic may instead lead people to defend their preexisting worldview more strongly—regardless of whether that pre-pandemic worldview was conservative *or* liberal. In this sense, it is plausible that the COVID-19 pandemic could simply increase political polarization, making liberals more liberal and conservatives more conservative. To test this account, through *post hoc* analyses, we conceptualized baseline pre-pandemic political ideology as a moderator of all hypothesized effects. We note that we decided upon these analyses to test for a political polarization account shortly after we initiated wave 2 data collection (but before looking at any of the data) and thus were unable to include these analyses in our preregistration plan, which specified conservative-shift hypotheses. In order to survey participants during the emergence of the COVID-19 pandemic in real time, we needed to initiate data collection rapidly by developing our study, preregistration, and obtaining IRB ethical approval during a short window of time.

5 | METHOD

The current study presents data comparing individuals' attitudes during the emergence of the pandemic in the United States (wave 2) to their attitudes before the pandemic (wave 1). Wave 1 was conducted during a 2-day interval of January 25–26, 2020, and wave 2 during a 2-week interval from March 19, 2020, to April 2, 2020, in order to survey participants during the weeks immediately following the declarations of COVID-19 as a pandemic and of the United States into a state of national emergency. During the time of wave 2 data collection, the United States experienced a rapid growth in COVID-19 diagnoses, rising by more than 20-fold from 10,400 to 213,600 (WHO, 2020a). Accordingly, this window of time was one during which the pandemic was actively emerging and spreading throughout all parts of the country.

5.1 | Open science statement

This study's hypotheses and analyses were preregistered via the Open Science Framework (OSF), along with plans for the sample size and materials of wave 2 data collection (see https://osf.io/cpxgq/?view_only=066fa9961b7641f197d4e4e9093bf8e8 for preregistration). Of course, given that we could not have predicted the emergence of the COVID-19 pandemic 2 months prior in January at the time of wave 1 data collection, this preregistration plan pertains to wave 2 data collection and our intentions for the repeated-measures analysis of these two waves' data combined.

5.2 | Participants

A total of 2,000 U.S. adult participants, recruited via Amazon Mechanical Turk (MTurk), completed an initial baseline survey between January 25 and January 26, 2020. During the March 19, 2020, through April 2, 2020, interval, 749 of these initial 2,000 participants completed the follow-up survey on MTurk. Wave 1 data for the current research were collected conveniently shortly before the COVID-19 pandemic. We note that, as the current research was not intended to entail any subsequent participation beyond the survey at wave 1 data collection, participants were not initially expecting a follow-up survey, which likely increased our study's attrition rate. Notably, no effects of attrition bias emerged: Participants who completed the follow-up survey did not differ significantly from participants who did not complete the follow-up survey, in terms of any of our three outcomes (as assessed at baseline): political ideology, gender role conformity, or endorsement of gender stereotypes (all *p*s > .05).

Fifty-four participants were excluded from analyses for failing an attention check in either or both of the surveys, leaving 695 participants (54% women) in the final sample. Participants were between the ages of 18 and 88 (M_{age} = 42.77, *SD* = 13.61). This sample provided 80% power to detect a small effect size of $d = 0.11$.

5.3 | Materials

5.3.1 | Political ideology

Political ideology was assessed by the question, "On the following scale from 1 (very liberal) to 7 (very conservative), how would you rate your political views?"

5.3.2 | Gender role conformity

Conformity to traditional gender roles was assessed by Kachel et al. (2016) traditional masculinity/femininity scale (six items; $\alpha = .92$ at both time points). Example items were, "I consider myself as…" and "Ideally, I would like to be…" with responses to all items ranging from 1 (very feminine) to 7 (very masculine). This variable was reverse-scored for women so that higher scores reflected greater conformity to one's own gender roles for all participants (i.e., higher femininity for women and higher masculinity for men).

5.3.3 | Endorsement of gender stereotypes

Endorsement of traditional gender stereotypes was assessed by eight items (time 1 $\alpha = .89$ and time 2 $\alpha = .92$). Of these eight items, four items assessed attitudes toward men (time 1 $\alpha = .93$ and time 2 $\alpha = .91$) and four items assessed attitudes toward women ($\alpha = .96$ at both time points), which were additionally used to compute distinct men and women stereotype subscales for *post hoc* analyses. For attitudes toward men, the scale led with the prompt, "Compared to women, men are expected to be more…" and followed with the following items: "risk-taking," "brave," "courageous," and "adventurous." For attitudes toward women, the scale led with the prompt, "Compared to men, women are expected to be more…" and followed with the following items: "clean," "hygienic," "sanitary," and "pristine." Responses to all items ranged from 1 (strongly disagree) to 7 (strongly agree).

5.3.4 | COVID-19 pandemic concern

COVID-19 pandemic concern was assessed by the question, "How concerned are you about the health risks posed by the coronavirus pandemic?" with responses including "not at all," "somewhat concerned," "very concerned," and "extremely concerned." Participants who indicated that they were either "not at all" or "somewhat concerned" were categorized as low in concern, whereas participants who indicated that they were either "very concerned" or "extremely concerned" were categorized as high in concern.

5.4 | Procedure

This repeated-measures study involved two waves. First, participants completed an initial survey between January 25 and January 26, 2020. Second, participants completed a follow-up survey between March 19, 2020 and April 2, 2020. In both surveys, participants completed the measures of political ideology, gender role conformity, and endorsement of gender stereotypes in the same order. In the follow-up survey, participants completed the COVID-19 concern measure at the end of the survey, in order to avoid completion of this measure biasing participants' responses to the political ideology and gender role measures. This study protocol received Institutional Review Board approval, and informed consent was obtained from all study participants.

5.5 | Results

Data and analysis scripts are available at https://osf.io/pufdv/?view_only=872e4e685e8749bebfbdb099deaac7ac.

Table 1 displays intercorrelations for all variables.

5.5.1 | Political ideology

Preregistered analyses

Political ideology during the pandemic (*M* = 3.53, *SD* = 1.80) did not differ significantly from political ideology before the pandemic

TABLE 1 Intercorrelations for all variables, assessed at baseline (January 25–26, 2020) and follow-up (March 19–April 2, 2020)

Variables	Political ideology	Gender role conformity	Gender stereotypes	Men stereotypes	Women stereotypes
Political ideology	–				
Gender role conformity	0.24* (0.27*)	–			
Endorsement of gender stereotypes	0.01 (−0.03)	0.15* (0.14*)	–		
Endorsement of men stereotypes	0.05 (0.05)	0.17* (0.19*)	0.79* (0.84*)	–	
Endorsement of women stereotypes	−0.04 (−0.09)	0.07 (0.07)	0.84* (0.90*)	0.33* (0.51*)	–
COVID-19 pandemic concern	(−0.18*)	(0.02)	(0.10)	(0.08)	(0.09)

Note: Correlations at baseline are presented first, with correlations at follow-up presented next in parentheses. Pandemic concern was assessed only at follow-up; thus, all correlations involving this variable appear in parentheses.
*$p < .01$.

(M = 3.51, SD = 1.76), $t(694) = 0.66$, $p = .508$, $d = 0.02$. Change in political ideology from before to during the pandemic did not differ significantly by participants' level of pandemic concern, $F(1, 693) = 0.06$, $p = .813$.

Post hoc analyses

Moderation by baseline political ideology. Change in political ideology from before to during the pandemic did not differ significantly by participants' baseline political ideology, $F(6, 688) = 1.75$, $p = .107$.

Exploring demographic moderators. Change in political ideology from before to during the pandemic was invariant across age, $F(59, 635) = 1.03$, $p = .425$, gender, $F(1, 691) = 1.63$, $p = .202$, income, $F(5, 689) = 0.40$, $p = .851$, and educational attainment, $F(5, 689) = 1.59$, $p = .161$.

5.5.2 | Gender role conformity

Preregistered analyses

Participants reported conforming more strongly to traditional gender roles during the pandemic (M = 5.39, SD = 1.02) than before the pandemic (M = 5.31, SD = 0.99), $t(692) = 3.28$, $p = .001$, $d = 0.12$. Change in gender role conformity from before to during the pandemic did not differ significantly by participants' level of pandemic concern, $F(1, 691) = 2.26$, $p = .133$.

Post hoc analyses

Moderation by baseline political ideology. Change in gender role conformity from before to during the pandemic did not differ significantly by participants' baseline political ideology, $F(6, 686) = 0.36$, $p = .902$.

Exploring demographic moderators. Change in gender role conformity from before to during the pandemic was invariant across age, $F(59, 633) = 1.19$, $p = .167$, gender, $F(1, 691) = 0.23$, $p = .633$, income, $F(5, 687) = 0.32$, $p = .904$, and educational attainment, $F(5, 687) = 0.34$, $p = .891$.

5.5.3 | Endorsement of gender stereotypes

Preregistered analyses

Participants reported endorsing traditional gender stereotypes more strongly during the pandemic (M = 5.57, SD = 1.03) than before the pandemic (M = 5.46, SD = 1.01), $t(694) = 2.84$, $p = .005$, $d = 0.11$. Change in endorsement of gender stereotypes from before to during the pandemic did not differ significantly by participants' level of pandemic concern, $F(1, 693) = 0.30$, $p = .584$.

Post hoc analyses

Moderation by baseline political ideology. Change in endorsement of gender stereotypes from before to during the pandemic did not differ significantly by participants' baseline political ideology, $F(6, 688) = 1.24$, $p = .284$.

Exploring demographic moderators. Change in endorsement of gender stereotypes from before to during the pandemic was invariant across age, $F(59, 635) = 1.30$, $p = .071$, gender, $F(1, 691) = 2.59$, $p = .108$, income, $F(5, 689) = 0.10$, $p = .992$, and educational attainment, $F(5, 689) = 1.29$, $p = .268$.

Distinguishing between stereotypes of men versus women. In addition to our preregistered analyses focusing on gender stereotypes overall (with stereotypes of men and women combined), we also tested for changes in stereotypes of men and women distinctly. Participants reported endorsing traditional gender stereotypes of men more strongly during the pandemic (M = 5.60, SD = 1.07) than before the pandemic (M = 5.49, SD = 1.17), $t(694) = 2.34$, $p = .018$, $d = 0.09$. Likewise, participants reported endorsing traditional gender stereotypes of women more strongly during the pandemic (M = 5.54,

SD = 1.30) than before the pandemic (*M* = 5.43, *SD* = 1.30), $t(694) = 2.12$, $p = .035$, $d = 0.08$.

6 | DISCUSSION

During the emergence of the COVID-19 pandemic, participants reported small increases in their conformity to traditional gender roles and endorsements of traditional gender stereotypes. These effects did not vary depending on how concerned participants were about the pandemic's health risks, nor did they vary by participants' baseline political ideology or any other demographic. Moreover, effects were invariant across both participant gender and target gender: Not only did men identify more strongly with masculinity *and* women more strongly with femininity, but also both men and women participants endorsed more traditional gender stereotypes of both men and women. All of these effects, while statistically significant, were of very small magnitude (*d*s ranging from 0.08 to 0.12). Political ideology remained constant from before to during the pandemic, and this null effect was consistent across all levels of pandemic concern, baseline political ideology, and other demographics.

These findings provide novel insights relevant to moral, political, and existential psychology, offering implications for theory and practice. Although exact mechanisms driving our findings remain unclear, our data draw attention to gender role beliefs as a domain potentially sensitive to a pandemic's threats, contributing to existing theoretical perspectives and raising questions for future research.

One motivational system that can promote conservative views is terror management, and our findings may contribute to this area of existential psychology. Our findings inform debate surround two opposing predictions (Burke et al., 2013): the conservative-shift hypothesis (mortality salience threat makes all individuals more conservative) and the worldview-defense hypothesis (mortality salience threat makes individuals affirm their preexisting ideology more strongly, whether liberal or conservative). We found no moderation by political ideology for pre- to during-pandemic changes in political ideology or gender role attitudes, providing support for the conservative-shift hypothesis. All study participants were from the United States, where traditional gender roles have long dominated cultural norms. That both liberal and conservative participants expressed enhanced support for traditional gender roles after COVID-19's emergence suggests that mortality salience threats could have increased preference for a deeply ingrained cultural worldview, but not necessarily one's own personal worldview. That is, liberals—who tend to be more progressive in their gender role attitudes than conservatives (Lye & Waldron, 1997; Prusaczyk & Hodson, 2020)—still expressed stronger endorsements of traditional gender role conformity after COVID-19's emergence, at a magnitude indistinguishable from that among conservatives. Our findings thus support the terror management theory's conservative-shift predictions about motivated cognition as conceptualized by Jost et al. (2003). Aligning with research on previous infectious disease outbreaks (e.g., Ebola; Arrowood et al., 2017), our study's results suggest potential for existential threats induced by COVID-19 to promote social conservativism, albeit here only in the domain of gender roles.

These findings add to a large body of research on mortality salience effects (Burke et al., 2010; Pyszczynski et al., 2015), contributing to its relatively smaller subsets of evidence that have considered nonexperimental within-subjects effects and/or focused on ongoing real-world primes of mortality salience (Martin & Van den Bos, 2014). Our data on gender role attitudes couple with data from previous studies (e.g., Arrowood et al., 2017; Das et al., 2009; Jonas & Fischer, 2006; Pyszczynski et al., 2003) to suggest that effects of real-world mortality salience primes may elicit similar positive effects on traditional worldview defense as do experimental lab inductions. At the same time, even if our findings can be situated within predictions of terror management theory, our data cannot verify the theory's core mechanistic prediction: that mortality salience threat was the most proximal cause of our effects. Threats of uncertainty salience—like mortality salience—also lead people to defend cultural worldviews, even to larger degrees than does mortality salience (Van den Bos et al., 2005). Furthermore, experimental inductions of mortality salience concurrently induce uncertainty salience, making it less clear which threat would likely have been the most proximal cause of attitudinal change (Van den Bos et al., 2005).

Documenting increased preferences for traditional gender role compliance aligns with behavioral immune system theorizing (Schaller, 2006; Schaller & Park, 2011) and related empirical evidence highlighting a positive link between pathogen risk and social conformity (Murray & Schaller, 2012; Murray et al., 2011). Although our data revealed statistically significant support for predictions of the behavioral immune system (Schaller, 2006; Schaller & Park, 2011) and motivated social cognition model of conservatism (Jost et al., 2003), they concurrently highlight potential boundary conditions of these theories. In contrast to our hypothesis, participants did not self-identify as more politically conservative upon the emergence of the COVID-19 pandemic. A potential interpretation of our data is that a pandemic promotes changes in domain-specific attitudes (such as gender), but not self-reported global political ideology; further research looking beyond gender would be needed to test this perspective. Our significant hypothesized effects for gender role beliefs, moreover, were very small, suggesting limitations for practical significance.

Also in contrast to our predictions was a lack of moderation by level of health concern related to the pandemic for any effect. This result suggests that stronger conscious feelings of threat from disease risk did not amplify effects of the pandemic on gender attitudes or political ideology, nor did an indifference toward disease threat buffer against effects. A first question emerges regarding the necessity of disease *concern* versus disease *salience* in inducing conservatism shifts; one can feel unconcerned by COVID-19 yet still think about the virus frequently. Research on the Ebola epidemic by Beall et al. (2016) found that, specifically in U.S. states with preexisting conservative ideologies, higher psychological salience—as operationalized by internet search volume—of Ebola was linked to increased support for political conservatism. These

results suggest that high salience of COVID-19 may be responsible for our observed shift toward conservative gender attitudes. Given the ubiquitous upheaval COVID-19 brought to the United States in late March 2020, we suspect—with caution—that the overwhelmingly high salience of disease in society may have restricted the influence of individual differences in virus concern on our outcomes, potentially explaining our lack of moderation by COVID-19 health concerns.

A second, and related, question emerges with regards to individual-level versus societal-level effects of pathogen threat variability. Studies have found that subjective perception of disease risk promotes conservatism and social conformity on an individual level (Helzer & Pizarro, 2011; Murray & Schaller, 2012; Wu & Chang, 2012). At the societal level, variations in pathogen prevalence also positively predict conservatism, specifically traditionalism and conformity (Murray et al., 2011; Schaller & Murray, 2008; Tybur et al., 2016). In the current study, subjective COVID-19 health risk did not predict shift in social or political attitudes at the individual level, but the increased prevalence of the COVID-19 virus in society did coincide with a shift toward traditional gender role attitudes in the aggregate. These findings invite inquiry into whether and how variability in perceived disease risk at an individual level may affect psychological outcomes when the surrounding societal context is inundated with pathogen threat. The psychological implications of pathogen threat may manifest on a cultural level through automatic social norms and rituals (Murray et al., 2017), suggesting potential for sociocultural reactions to COVID-19—for example, amplified gender disparities in childcare responsibilities due to lockdowns—to have driven psychological effects. That is, increased conformity to traditional gender roles following COVID-19's emergence may be a product of cultural adaptations to increased infectious disease threat, rather than individuals' concerns with acquiring the virus. Research investigating baseline individual differences and experimental manipulations related to pathogen threats among participants in the broader context of a looming pandemic may be theoretically worthwhile.

Our study design—as well as the lack of moderation by COVID-19 health concern—leaves the exact mechanism driving our effects unknown. Our data cannot foster attribution of effects *specifically* to theorizing from either the behavioral immune system or the motivated social cognition model of conservatism. We see potential for either theory's explanatory power. Moreover, participants may have expressed preference for traditional gender roles due to the pandemic as a means of achieving existential security and reducing uncertainty and ambiguity through essentialist, rigid, categorically dichotomized reasoning (e.g., Frenkel-Brunswik, 1948; Furnham & Ribchester, 1995; Jost et al., 2003, 2009; Makwana et al., 2018). At the same time, it is possible that the presence of a disease-threatening pathogen promoted preferences for social conformity to gender roles (e.g., Murray & Schaller, 2012; Murray et al., 2011; Wu & Chang, 2012). Even further, our data leave no way to discern whether the observed gender attitude effects are truly related to the pandemic's emergence, or whether some other temporal confound occurring between January and March 2020 (e.g., the release of widely consumed media content displaying gender stereotypes or statements made by public figures endorsing traditional gender roles, etc.) could be at play. Given our use of study preregistration, it is unlikely that our effects reflect false positives, yet their driving factors remain open to clarification.

Beyond theoretical implications, the notion that the COVID-19 pandemic could have increased preference for traditional gender roles should be considered in light of political elections in its wake (e.g., the 2020 U.S. presidential election). For example, a potential implication of our findings is that public opinion—among both liberals *and* conservatives—may have shifted slightly to prefer candidates and media outlets that uphold traditional gender binary roles through dialogue and policy. Nevertheless, we emphasize that our effect sizes were of very small magnitude, at approximately one-tenth of a standard deviation. Thus, while we report support for their *statistical* significance, their *practical* significance remains open to interpretation. It is unclear whether shifts in gender role attitudes of this magnitude could have meaningful implications for real-world behavior, such as election voting or more general social preferences. To understand whether and how the current findings and their theoretical bases connect to such real-world phenomena in the pandemic's immediate wake is a worthwhile aim for research across not only social psychology but also gender studies and political science.

A strength of this research is its ecologically valid documentation of people's lived experiences in real time during the emergence of a pandemic—in contrast to either people's retrospective self-report after the pandemic has concluded or their prospective forecasting of pandemic experience hypothetically. Other strengths include its use of preregistration and its high statistical power. One limitation is that findings are generalizable only within the United States. A second potential limitation, psychometrically, is that we assessed political ideology and COVID-19 pandemic concern with single-item scales, which may have reduced their sensitivity and may potentially explain the null effects of tests on these variables. At the same time, that we observed a null effect for political ideology yet significant effects for gender role attitudes might reflect a distinction between political self-identification versus endorsement of social/political beliefs, where the latter is more sensitive than the former. A third limitation, as discussed above, is that our data cannot foster attribution of effects specifically to any single theory or mechanism. An important goal of building psychological theories is to apply said theories to predict and explain real-world phenomena, as exemplified by our research. The current study's high ecological validity to permit this application, however, comes at the cost of internal validity, in that the specific psychological mechanisms by which the COVID-19 pandemic could have affected gender role beliefs remain unclear. By demonstrating effects using a rare naturalistic manipulation, this research can couple with more controlled studies that pit competing theories against one another and uncover mediating factors.

Ultimately, these findings highlight that the COVID-19 pandemic coincided with very small, but significant, increases in preferences for traditional gender roles among U.S. adults. In this vein, when it comes to men being masculine and women being feminine, a

pandemic may indeed have the potential to make people more socially conservative.

DATA AVAILABILITY STATEMENT

Data and analysis scripts are openly available at https://osf.io/pufdv/?view_only=872e4e685e8749bebfbdb099deaac7ac, reference number https://doi.org/10.17605/OSF. IO/PUFDV.

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