RESEARCH ARTICLE

EASP WILEY

Parent and community political orientation predicts children's health behaviours

Anton Gollwitzer[1,2] | Julia Marshall[3] | Young-eun Lee[4] | Paul Deutchman[3] | Felix Warneken[5] | Katherine McAuliffe[3]

[1]Department of Leadership and Organizational Behaviour, BI Norwegian Business School, Oslo, Norway

[2]Center for Adaptive Rationality, Max Planck Institute for Human Development, Berlin, Germany

[3]The Department of Neuroscience and Psychology, Boston College, Boston, Massachusetts, USA

[4]Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

[5]Department of Psychology, University of Michigan, Ann Arbor, Michigan, USA

Correspondence
Anton Gollwitzer, Department of Leadership and Organizational Behaviour, BI Norwegian Business School, Nydalsveien 37, Oslo, 0484, Norway and Max Planck Institute for Human Development, Berlin, 14195, Germany.
Email: anton.gollwitzer@gmail.com

Julia Marshall, The Department of Neuroscience and Psychology, Boston College, MA 02467, USA.
Email: marshaau@bc.edu

Anton Gollwitzer and Julia Marshall share the first authorship.

Abstract

Does political partisanship extend to childhood? To what degree are children, a largely non-political population, impacted by parents' and communities' political orientations? We examined children's behaviours and attitudes during a politically divisive event – the COVID-19 pandemic. Children (4- to 12-year-olds; $N = 313$) of liberal (vs. conservative) parents reported greater preventive COVID-19 behaviours, such as mask wearing and physical distancing, and responded more positively to these health behaviours. At the community level, children living in Democratic-voting (vs. Republican-voting) U.S. counties more strongly endorsed preventive COVID-19 behaviours. Political orientation was a better predictor than education, income, religiosity, population-density, and infection rates. Mediation and moderation analyses revealed that the parent–child political link was driven by children's perceptions of their parents' guidance, behaviours, and concern about COVID-19, and that this link was attenuated in Democratic- versus Republican-voting counties. Political orientation appears to play an unexpectedly prominent role, both at the intimate family and broader community level, in determining children's behaviours and attitudes.

KEYWORDS
COVID-19, developmental psychology, partisanship, political ideology, political orientation

1 | INTRODUCTION

Political partisanship – psychological identification with a political party or ideology – is a pervasive force in the United States. Political minorities are afraid to reveal their political identity (Perez-Truglia & Cruces, 2017), partisans disagree on scientific findings (Rutjens et al., 2018), and memories of past political events are distorted by political leanings (Frenda et al., 2013). Political orientations also have

behavioural consequences. People geographically segregate themselves along party lines (Motyl et al., 2014), political homophily impacts romantic decision-making (Huber & Malhotra, 2017), and people prefer to interact with co-partisans (McConnell et al., 2018). Unfortunately, such political divisions are unlikely to improve. U.S. partisanship has only increased in the past two decades, becoming a particularly salient social identity (e.g., Iyengar & Krupenkin, 2018; Pew Research Center, 2014).

1.1 | The role of politics in development

Despite vast research on political ideology and partisanship in adults, the role of politics in development has been sparsely considered. Though researchers have examined whether people's political ideologies are informed by their parents' politics (e.g., Jennings & Niemi, 1968), surprisingly little work has examined the direct impact of parents' and communities' political leanings on children's psychology. Do parents' and communities' political ideologies and partisanship influence the cognition, attitudes and behaviours of children – a comparatively non-political population? If so, how does the influence of political orientation weigh compared to other factors, such as family income or educational opportunity, and what mechanisms underlie these potential effects? Answering these questions can reveal the factors that affect children's social development and whether political divisions in the United States have become pervasive enough to impact children – a largely non-political and particularly vulnerable population.

Several studies in developmental and political psychology suggest that political ideologies and partisanship can inform children's psychology (Guidetti et al., 2021; Leshin et al., 2022; Reifen Tagar et al., 2014; Hammond & Cimpian, 2021; Rhodes & Gelman, 2009; Segall et al., 2015). For instance, in terms of moral behaviour, parental conservatism (vs. liberalism) is linked to greater out-group punishment in children (Leshin et al., 2022). And, in terms of prejudice, children living in conservative (vs. liberal) communities more strongly reject claims of varying race individuals as being part of the same category (Rhodes & Gelman, 2009). Although these studies provide insight into the ways in which political orientation can affect children's views and behaviours, they are limited in several ways. Many of these studies (a) did not examine how strongly political orientation predicts children's psychology compared to other variables (e.g., education level), (b) did not simultaneously examine variation in parent- as well as community-level political orientation, and (c) did not consider other aspects of these potential links, such as relevant mechanisms or moderators. Taken together, our understanding of whether and how political orientation shapes children's psychology remains fairly limited.

1.2 | Present research

Building on this nascent research, we sought to conduct a systematic test of whether and how political orientation – defined here as including both political ideology (liberal vs. conservative) and political partisanship (identifying with Republicans vs. Democrats) – links to children's psychology. To do so, we examined children's attitudes and behaviour in an unexplored domain that has important implications for individual and community survival – health behaviours. Specifically, we examined whether parental political ideology (conservatism vs. liberalism) and community voting behaviour in children's locations (Republican- vs. Democratic-voting) predicted children's health attitudes and behaviours during the COVID-19 pandemic.

We chose to examine children's health behaviours during COVID-19 because the pandemic provided an ideal test case of the pervasiveness of political divisions. A strong political gap in preventive COVID-19 health behaviours (non-pharmaceutical interventions) was observed in the United States throughout the pandemic. Conservatives endorsed preventive health measures, including distancing and wearing masks, to a much smaller extent than liberals (e.g., Gadarian et al., 2021; Allcott et al., 2020; Grossman et al., 2020). Moreover, these findings extended to the community level. GPS coordinates of ~15 million people revealed that residents living in Republican-voting (vs. Democratic-voting) U.S. counties exhibited poorer physical distancing, for instance, visiting non-essential businesses to a greater extent. These distancing failures subsequently predicted greater county-level infections and even fatalities (e.g., Gollwitzer et al., 2020). Yet, despite this documented partisan divide, it is unknown whether children's COVID-19 attitudes and behaviours echoed the partisanship of their parents and communities. This question is not trivial. Children contribute to viral spread (including large-scale outbreaks) (Centers for Disease Control and Prevention, 2021; Hyde, 2020) and are potential 'reservoirs for the evolution of genetic variants' given their largely unvaccinated status (Opel et al., 2021; Yonker et al., 2021). Indeed, recent research utilizing smart thermometers suggests that, among household COVID-19 transmissions, over 70% of cases began with a child infection (Tseng et al., 2023).

With this background in mind, our research aimed to systematically investigate the relationship between children's self-reported COVID-19 behaviours and two components of political orientation: parental political ideology, measured via parents' self-reported conservatism versus liberalism, and community partisanship, measured via U.S. counties' voting patterns in the 2020 U.S. election. To do so, and unlike most past work, our study sampled ~300 children across a wide age range of children (4–12 years) and across politically diverse areas spanning the United States. Additionally, we compared the effect sizes of political orientation against relevant variables that may predict children's health responses (e.g., family income), examined theoretically relevant moderators (e.g., age, COVID-19 severity), and tested potential mechanisms (e.g., children's perception of their parents' health behaviours). Finally, to provide a multi-level perspective, we examined the intersection of parents and community politics in predicting children's health responses. For instance, children of conservative parents living in Democrat-voting (vs. Republican-voting) communities may exhibit different COVID-19 responding due to varying local regulations. Collectively, the present work, then, not only considers whether political orientation links to children's health attitudes and behaviours but also examines this question from a sample generalizability perspective (e.g., Bornstein et al., 2013), an effect-size perspective (i.e., contrasting the strength of predictors), a process-oriented perspective (e.g., Bandura, 1971; Segall et al., 2015), and a multi-level perspective (multiple levels of the surrounding environment; e.g., ecological systems theory) (Bronfenbrenner, 1992).

1.3 | Hypotheses

We generated four sets of hypotheses. First, we hypothesized that parental political leaning towards conservatism (as opposed to liberalism) is linked to children exhibiting fewer preventive behaviours

against COVID-19, such as physical distancing and mask wearing. This prediction was based on the strength and pervasiveness of politically biased health responses within adult communities during COVID-19 (e.g., Gollwitzer et al., 2020). Building on this link, we also sought to determine the extent to which parental political ideology is a comparatively more powerful predictor of children's COVID-19 responding than other theoretically relevant variables, such as parental income, education, religiosity, COVID-19 severity in participants' locations, and schooling format (e.g., in-person or virtual). In doing so, the present work can tease out whether it is truly parental political ideology or alternative but closely related variables that also play a role in health behaviours, such as education (Cutler & Lleras-Muney, 2010), that predicts children's health responses.

When examining the proposed parental–child link, we also exploratorily examined whether theoretically relevant variables, specifically children's age and COVID-19 severity in participants' locations, moderated this proposed link. Doing so contributes to the existing debate on whether parental influences become stronger with age (Gelman et al., 2004; Berndt, 1979; Leshin et al., 2022), and helps elucidate whether the predictive power of parental political ideology remains even during periods of heightened health risks – periods of high viral spread in which failing to protect against COVID-19 had substantial consequences, including increased mortality (e.g., Woolf et al., 2020). By examining these moderations, we go beyond solely establishing the expected connection between parental political ideology and children's responses to COVID-19; we also learn under which circumstances political orientation more or less strongly predicts children's health behaviours.

Second, we considered *why* parental political orientation may be linked to children's COVID-19 responding. Based on past work examining the transfer of attitudes and behaviour from parents to children (e.g., Bandura, 1971; Segall et al., 2015), we hypothesized that parents' attitudes and beliefs towards COVID-19 would mediate the proposed link between parental political ideology and children's preventive COVID-19 responses. Specifically, in line with past theorizing (e.g., Bandura, 1971; Segall et al., 2015; Cowell & Decety, 2015; Eisenberg & Valiente, 2002; Klahr & Nigam, 2004), we assessed the degree to which the link between parental political ideology and children's responses is mediated by (a) children's perceptions of their parents prompting them to follow COVID-19 health behaviours (direct guidance), (b) children's perceptions of their parents' COVID-19 health behaviours (direct modelling), and (c) children's perceptions of their parents' degree of worry about COVID-19 (general concern). Doing so can help inform our understanding of the socialization processes by which political orientation may shape children's behaviours.

Given the implied causal nature of the proposed mediation models (X → M → Y), the ordering of variables included in these models needs to be well-justified, and this is especially the case given that we collected solely observational data (e.g., Bullock et al., 2010; Nichols, 2007; Pearl & Mackenzie, 2018). The proposed sequence of variables was based on the low likelihood that parental political ideology (variable X) is causally influenced either by children's perceptions of their parents' COVID-19 responses (variable M) or by children's COVID-19 responses (variable Y). Indeed, political ideology tends to

remain fairly stable over time (e.g., Sears & Funk, 1999). Nonetheless, it remains possible that children's COVID-19 responses influenced their perceptions of their parents' responses (Y → M rather than M → Y) via some psychological processes, such as projection. To help address this possibility, and to provide support for the proposed ordering of variables (e.g., Bullock et al., 2010), we also examined a control model which assessed the mediation in terms of children's perception of their friends' COVID-19 responses as the mediating variable. If parental political ideology predicts children's responses via children's perceptions of their parents' COVID-19 responses but not their friends' COVID-19 responses, this would indicate that processes such as projection are unlikely to account for the observed findings (since we see no reason why children would project their own behaviours onto their parents but not their friends).

Third, we examined the proposed link between political orientation and children's health responding at the group level by considering communities' political partisanship. Similarly to our prediction that parental conservatism predicts lower preventive COVID-19 behaviours in children, we hypothesized that children living in communities (U.S. counties) with a greater Republican (vs. Democratic) vote share exhibit lower preventive COVID-19 behaviours. This hypothesis aligns with and extends previous work on the pervasiveness of partisanship in the United States (e.g., Van Bavel & Pereira, 2018) and that regional vote-share can have substantial health-dependent outcomes, such as COVID-19 infection and mortality rates (Gollwitzer et al., 2020). Echoing our analysis of parental political ideology, we also examined the comparative effect sizes of communities' partisanship versus other potential predictors (e.g., population density, education, income, COVID-19 severity, schooling format) and exploratorily examined how theoretically relevant variables (e.g., children's age, COVID-19 severity) interact with the proposed link.

Fourth, to provide a multi-level and comprehensive analysis of the link between political orientation and children's health responses, we exploratorily examined whether parental political ideology versus communities' partisanship independently predict children's COVID-19 responding, and which of these two political factors have stronger predictive power. Moreover, we tested whether parental political ideology and communities' partisanship interact to predict children's responses. Community-based differences in political orientation may influence the proposed link between parental conservatism and children's reduced COVID-19 responding. For example, this link may be attenuated in Democratic-voting counties given that such counties had stricter COVID-19 norms and policy restrictions (Grossman et al., 2020). These complementary analyses help paint a nuanced and comprehensive picture around parental and community politics and children's health responding.

2 | METHOD

2.1 | Participants

We recruited 313 children across the United States between 4 and 12 years old (*M* = 8.58, *SD* = 2.36; 160 female; see Table S1 for age

breakdowns). We chose our lowest age boundary (4-year-olds) because this was the youngest age at which children clearly understood the study questions. The higher boundary (12-year-olds) was chosen because we were interested in child development and not adolescent development. Two developmental labs collected the data between December 2020 and July 2021 (Lab 1: 228 participants; Lab 2: 85 participants). Children who participated in the study also participated in different COVID-19 studies immediately prior (Lab 1: Marshall et al., 2023; Lab 2: Lee et al., 2022). Neither of these other studies assessed children's COVID-19 behaviour. Because developmental studies over-recruit local children from liberal families, we conducted the study online and recruited participants from a wide political spectrum across the US. We received parental consent and children assented to participate.

The parents of the 313 children reported their demographics (one parent per child). Two hundred and eighty-one parents reported their political ideology. Since only one parent per child completed demographics, this parent estimated the political ideology of the other parent (if applicable, $n = 263$). Other demographics (e.g., income) were collected by Lab 1 (but not Lab 2).

We conducted a post hoc sensitivity power-analysis (using G*Power) to calculate the approximate power we had to detect the main hypothesized links – the links between parental ideology and children's COVID-19 responding, and county partisanship and children's COVID-19 responding. With 269 and 265 participants (these *ns* are smaller than the overall sample due to missing data; see Tables 1 and 3), we had 90% power to detect small relationships between parental ideology, county partisanship, and children's responding (*rs* ~ .20).

We applied sequential pre-registration. Pre-registration 1 (https://aspredicted.org/X17_X3L) pre-registered preliminary data exploration including measure reliability and variable distributions. Pre-registration 2 (https://aspredicted.org/72T_G1R) pre-registered the main analyses, including the conducted models and predictions. This twofold approach allows researchers to formulate models based on the reliability and distributions of included variables (e.g., pre-register models that account for non-normal distributions). For open-source data, code and materials, see OSF.

2.2 | Materials

2.2.1 | Overview

The materials are presented separately for children's responses, parents' responses, and community-level variables.

2.2.2 | Children

Children were tested on Zoom. The experimenter first explained the terms 'social distancing' and 'mask wearing' to provide all participants with an understanding of these key concepts. For example, we explained that social distancing is when 'you stand far away from people when you're in a group' or when you 'stay home from an event, like a birthday party' (see Supplemental Online Material [SOM] for full explanations). The experimenter then asked three sets of questions in randomized order: (1) children's preventive COVID-19 responses, (2) children's perceptions of their parents' and friends' preventive COVID-19 responses, and (3) children's schooling format.

Children's preventive COVID-19 responses. The experimenter asked four questions to assess children's preventive COVID-19 responses (randomized order). Two items assessed children's physical distancing and two assessed mask wearing (e.g., 'In general, do you wear masks when you're out of the house?' 1 = *Never*, 2 = *Sometimes*, 3 = *Most of the time*, 4 = *Always*. Half of the items assessed self-reported behaviour and the other half assessed evaluations of these behaviours (e.g., 'In general, do you think social distancing is a good thing to do?' 1 = *Not at all good*, 2 = *A little good*, 3 = *Pretty good*, 4 = *Very good*). The four items were averaged because they were weighted onto a single factor, $\omega_t = .77$, $M = 3.36$, $SD = 0.63$ (ω_t denotes McDonald's total omega). (See SOM: Table S2 for full items and descriptive statistics.)

Children's perception of parents' and friends' preventive COVID-19 responses. Three sets of items (four questions each; randomized) assessed children's perceptions of their parents' and friends' preventive COVID-19 responses. We assessed: (1) The degree to which children perceived their parents and friends as prompting them to follow preventive COVID-19 behaviours (direct guidance; e.g., 'In general, do your parents or guardians [friends] say you should social distance?'), (2) children's perception of their parents' and friends' preventive COVID-19 behaviours (direct modelling; 'In general, do your parents or guardians [friends] social distance?'), and (3) children's perceptions of their parents' and friends' worry about COVID-19 (general concern; 'In general, how much do your parents or guardians care about COVID-19?'). All 12 items had the response scale: 1 = *Never*, 2 = *Sometimes*, 3 = *Most of the time* and 4 = *Always*. The six items regarding children's perceptions of their parents were averaged because they loaded together, $\omega_t = .80$, $M = 3.35$, $SD = 0.61$. The same was done for children's perceptions of their friends, $\omega_t = .85$, $M = 2.80$, $SD = 0.81$. (See RMarkdown on OSF file for complete reliability analyses. See SOM: Table S3 for full items and descriptive statistics.)

Children's schooling format. Children experienced different schooling formats during COVID-19, for instance, in-person, hybrid or completely virtual models. Children were asked: 'In general, how have you been attending school? Are you doing school…' 1 = *Completely In Person*, 2 = *Completely virtual*, 3 = *Hybrid*, 4 = *Homeschooled*, 5 = *Other*. This scale was recoded to: 1 = *In Person*, 2 = *Hybrid*, 3 = *Completely virtual or Homeschooled*, NA = *Other*. We also assessed children's schooling format in the past week and future weeks but did not examine these variables as children's responses were almost identical to children's reported general schooling format.

2.2.3 | Parents

Parental data were collected as part of the consent process.

TABLE 1 Results of the conducted multivariate linear models testing the predictive power of parental political ideology on children's preventive COVID-19 responses.

Predictors	Main parent model			Saturated parent model			Saturated parent model (z-scored)		
	B	CIs	p	B	CIs	p	B	CIs	p
Intercept	2.51	2.11, 2.91	<.001	2.23	1.38, 3.08	<.001	3.36	3.26, 3.46	<.001
Parental political ideology $M = 4.69, SD = 1.52$, Min: 1, Max: 7	0.13	0.08, 0.18	<.001	0.14	0.07, 0.20	<.001	0.21	0.10, 0.31	<.001
Child's age $M = 8.58, SD = 2.36$, Min: 4, Max: 12.92	0.03	−0.01, 0.06	.107	0.00	−0.05, 0.05	.978	0.00	−0.11, 0.12	.978
Child's gender $M = −0.01, SD = 0.50$, Min: −0.5, Max: 0.5	0.11	−0.04, 0.26	.140	0.09	−0.11, 0.28	.385	0.09	−0.11, 0.28	.385
Parental education $M = 7.23, SD = 1.14$, Min: 3, Max: 9				0.04	−0.06, 0.14	.414	0.05	−0.06, 0.16	.414
Parental income $M = 3.63, SD = 0.92$, Min: 1, Max: 5				0.03	−0.09, 0.15	.639	0.03	−0.08, 0.13	.639
Parental religiosity $M = 3.29, SD = 1.69$, Min: 1, Max: 6				−0.01	−0.07, 0.06	.835	−0.01	−0.12, 0.10	.835
COVID-19 severity (cases per 100k) $M = 28.38, SD = 23.49$, Min: .57, Max: 114.41				0.00	0.00, 0.01	**.033**	0.10	0.01, 0.19	**.033**
Observations	269			170			170		
R^2/R^2 adjusted	.099/.089			.150/.113			.150/.113		

Note: Higher parent political ideology indicates greater liberalism (lower conservatism). Higher outcome values indicate greater adherence to COVID-19 preventive behaviours and more positive evaluations of such behaviours (physical distancing and mask wearing). The main parent model included the main predictors (unstandardized coefficients). The saturated parent model included the main predictors and demographic variables (e.g., parental income; unstandardized coefficients). The saturated parent model (z-scored) is the saturated model with predictors z-scored for effect-size comparisons. Bold values are values that are significant at the $p < .05$ threshold.
Abbreviation: CIs, confidence intervals.

Parents' demographics. One parent per child completed demographics. This parent was termed Parent 1 in the questionnaire. We assessed Parent 1's political ideology, education level, income and religiosity. Political ideology was assessed via 'How would you characterize the political affiliation of Parent 1?' 1 = *Very Conservative*, 4 = *Moderate*, 7 = *Very Liberal*. Parent 1 also estimated the political ideology and education level of the other parent (Parent 2). Where available, we averaged across Parent 1 and Parent 2 to create composite parental scores (political orientation: $r = .73, M = 4.69, SD = 1.52$; education: $M = 7.23, SD = 1.14$). Because religiosity was assessed via two items, we collapsed across these two items (after re-scaling the 1–4 scaled item to a 1–6 scale), $M = 3.71, SD = 1.82$. Parent 1 also reported whether they were the mother or father (211 mothers). (See Table S4 for all items and descriptives.)

2.2.4 | Community (U.S. county)

Zip codes were used to identify participant location (U.S. county). Counties' political partisanship was quantified as counties' voting record in the 2020 Presidential Election: % voters for Joe Biden minus % voters for Donald Trump, $M = 0.18, SD = 0.29$ (McGovern,

2020). We also retrieved counties' education level (% of adults with a bachelor's degree or higher; 2014–2018), median annual income (2018), and population density (people per square mile) (Killeen et al., 2020). Finally, we calculated COVID-19 severity via infection rate (new cases per 100k) on the date of participation in each participant's location in terms of U.S. county (New York Times, 2020). (See Table 4 for descriptive statistics.)

3 | RESULTS

Below, we first examine whether parental political ideologies are related to children's COVID-19 responses. We then consider the potential moderators and mechanisms underlying this link. Thereafter, we examine the link between community partisanship and children's COVID-19 responses, and the potential moderators of this link. Finally, we consider the comparative predictive power of parental political ideology and community partisanship in the same model and examine how these variables interact to predict children's COVID-19 responses. For raw correlations and descriptive statistics of the main variables, see SOM (Tables S4 and S5).

TABLE 2 Results of the conducted multivariate linear models testing moderators of the link between parental political ideology and children's preventive COVID-19 Responses.

Predictors	Age interaction			COVID-19 severity interaction			Both interactions		
	B	**CIs**	**p**	**B**	**CIs**	**p**	**B**	**CIs**	**p**
Intercept	3.36	3.28, 3.43	<.001	3.33	3.26, 3.41	<.001	3.35	3.27, 3.43	<.001
Parental political ideology	0.19	0.11, 0.26	<.001	0.20	0.12, 0.27	<.001	0.19	0.11, 0.26	<.001
Child's gender	0.11	−0.04, 0.25	.161	0.13	−0.03, 0.28	.104	0.12	−0.03, 0.27	.128
Child's age	0.06	−0.02, 0.13	.138	0.06	−0.01, 0.14	.110	0.06	−0.02, 0.14	.134
Parental political ideology X Child's age	0.09	0.01, 0.17	**.032**				0.09	0.01, 0.17	**.032**
COVID-19 severity				0.06	−0.01, 0.14	.106	0.07	−0.01, 0.14	.084
Parental political ideology X COVID-19 severity				−0.01	−0.08, 0.06	.768	−0.01	−0.08, 0.06	.840
Observations	269			261			261		
R^2/R^2 adjusted	0.115 / 0.101			0.111/0.094			0.127/0.106		

Note: Higher values indicate greater preventive responses (physical distancing and mask wearing). Higher parental political ideology indicates greater liberalism (lower conservatism). All predictors z-scored. Bold values are values that are significant at the $p < .05$ threshold.
Abbreviation: CIs, confidence intervals.

3.1 | Linking parental political ideology to children's COVID-19 responses

We examined whether parental political ideology predicted children's preventive COVID-19 behaviours and evaluations (physical distancing and mask wearing) across the United States during the COVID-19 pandemic. Although parental political ideology leaned slightly liberal, $M = 4.69$, $SD = 1.52$, the variable was well-distributed and captured a wide political spectrum (see RMarkdown file on OSF for distribution plots). We conducted a multivariate linear regression with parental political ideology (continuous), children's age (4.00–12.92 years; continuous), and gender (categorical) as predictors. Children's preventive COVID-19 responses, collapsed across behaviour (e.g., 'In general, do you social distance?') and evaluations (e.g., 'In general, do you think wearing a mask when you're outside of the house is a good thing to do?') was the outcome variable. The described model is henceforth the main parent model. (See Supplemental Note 1. See Tables 1–4 or RMarkdown on OSF for descriptive statistics.)

As predicted, the main parent model found that children of more liberal (less conservative) parents endorsed greater COVID-19 prevention – they reported greater preventive behaviours (physical distancing and mask wearing) and evaluated these behaviours more positively, $B = 0.13$, $p < .001$ (Table 1; Figure 1a). Specifically, children of very liberal parents (+2 SD, $M = 7.73$; Supplemental Note 3) exhibited a preventive COVID-19 response of 3.74, while those of very conservative parents (−2 SD, $M = 1.65$) scored 2.95 (1–4 scale), a ∼21% reduction. Neither children's age nor gender predicted children's responding, $ps > .107$ (Table 1).

A visualization of the observed link qualitatively indicated a quadratic trend (Figure 1a). We thus exploratorily added a quadratic parent political ideology term to the main parent model. A small quadratic effect was observed. Children of very conservative par-

ents were particularly likely to report lower preventive COVID-19 behaviours and to evaluate such preventive measures less positively, $B = −0.09$, $p = .016$.

The observed ideological differences may reflect social or economic confounds. We thus added demographic controls, including parental education, income, religiosity, and COVID-19 severity (cases per 100k) to the main parent model. Children of liberal (vs. conservative) parents still exhibited greater preventive COVID-19 responses, $B = 0.14$, $p < .001$ (saturated parent model; Table 1; Supplemental Note 4). When rescaling the predictors (z-scoring) to compare coefficients, parent political ideology – at least qualitatively – was a stronger predictor of children's responses than the control variables, $B = .21$ vs. $Bs < .11$ (Table 1). Moreover, none of the control variables predicted children's responses, $ps > .384$, except COVID-19 severity, which predicted greater preventive COVID-19 behaviours, $p = .033$ (Table 1).

We considered children's varying schooling experiences during COVID-19, such as in-person versus virtual schooling. It is possible that children of conservative parents exhibited poorer COVID-19 precautions because they attended schools that continued in-person pedagogy. We found that schooling (in-person to hybrid to completely virtual) did not account for our findings; the observed link between parental political ideology and children's responding remained when adding schooling format into the main parent model, $B = 0.13$, 95% CI[0.08, 0.18], $p < .001$. Additionally, schooling did not moderate the observed link, $p = .841$. These results support robustness by demonstrating that the observed parent–child link occurs independently of schooling environment.

Additionally supporting robustness, alternate statistical models revealed consistent results. The observed parent–child link remained when conducting the main parent model as a mixed-effects model (family entered as a random intercept because some children were part of the same family; see Supplemental Note 1) and as a generalized

EASP WILEY | 849

TABLE 3 Results of the conducted mediation models.

	Main mediation model			Saturated mediation model			Friend mediation model		
	B	CIs	*p*	*B*	CIs	*p*	*B*	CIs	*p*
Indirect link: Parental responses	0.09	0.05, 0.13	<.001	0.13	0.08, 0.18	<.001	0.08	0.04, 0.12	<.001
Indirect link: Friends' responses	–	–	–	–	–	–	0.01	−0.002, 0.02	.258
Direct link	0.03	−0.01, 0.07	.090	0.01	−0.05, 0.07	.812	0.04	−0.003, 0.08	.068
Total link	0.12	0.07, 0.18	<.001	0.14	0.07, 0.20	<.001	0.12	0.06, 0.18	<.001
Proportion mediated	72%			95%			65%		
Observations	282			172			282		

Note: Parent political ideology predicted children's preventive COVID-19 responses via children's perception of their parental COVID-19 responses (collapsed across direct guidance, direct modelling and general concern). The main mediation model includes main predictors (parental political ideology, children's age and gender; and unstandardized coefficients). The saturated mediation model includes additional controls applied on all paths (e.g., parental income). The friend mediation model is the main mediation model with children's perception of friends' COVID-19 responses added as a control mediator. Case-wise maximum likelihood estimation is applied to missing values. Bootstrapped: 5000 iterations. Coefficients are unstandardized. Bold values are values that are significant at the *p* < .05 threshold.
Abbreviation: CIs, confidence intervals.

TABLE 4 Results of the conducted multivariate linear models testing the predictive power of county partisanship (voting record: % voters for Joe Biden Minus % voters for Donald Trump in the 2020 U.S. Election) on children's COVID-19 responses.

	Main county model			Saturated county model			Saturated county model (z-scored)		
Predictors	*B*	CIs	*p*	*B*	CIs	*p*	*B*	CIs	*p*
Intercept	3.14	2.87, 3.42	<.001	3.07	2.63, 3.51	<.001	3.37	3.28, 3.46	<.001
County voting record $M = 0.18$, $SD = 0.29$, Min: −0.55, Max: 0.81	0.45	0.20, 0.69	<.001	0.51	0.12, 0.90	.010	0.15	0.04, 0.26	.010
Child's age $M = 8.58$, $SD = 2.36$, Min: 4, Max: 12.92	0.01	−0.02, 0.05	.347	0.01	−0.02, 0.05	.376	0.03	−0.04, 0.11	.376
Child's gender $M = -0.01$, $SD = 0.50$, Min: −0.5, Max: 0.5	0.12	−0.02, 0.26	.095	0.13	−0.02, 0.28	.084	0.13	−0.02, 0.28	.084
County education $M = 38.82$, $SD = 12.15$, Min: 14.0, Max: 74.6				−0.00	−0.01, 0.01	.776	−0.02	−0.16, 0.12	.776
County median income $M = 73,208$, $SD = 19,809$, Min: 37,562, Max: 140,382				−0.00	−0.00, 0.00	.987	−0.00	−0.11, 0.11	.987
County density $M = 2,501$, $SD = 8,253$, Min: 8.4 Max: 69,468				0.00	−0.00, 0.00	.568	0.12	−0.29, 0.53	.568
County COVID-19 severity $M = 28.38$, $SD = 23.49$, Min: .57, Max: 114.41				0.00	0.00, 0.01	.016	0.09	0.02, 0.16	.016
Observations	292			286			286		
R^2/R^2 adjusted	0.053/0.043			0.072/0.049			0.072/0.049		

Note: Higher values indicate greater preventive behaviours and more positive evaluations of COVID-19 (physical distancing and mask wearing. Main county model: Main predictors (unstandardized coefficients). Saturated county model: Main predictors and demographic variables (e.g., county income; unstandardized coefficients). Saturated county model (z-scored): the saturated model with z-scored predictors. Bold values are values that are significant at the *p* < .05 threshold.
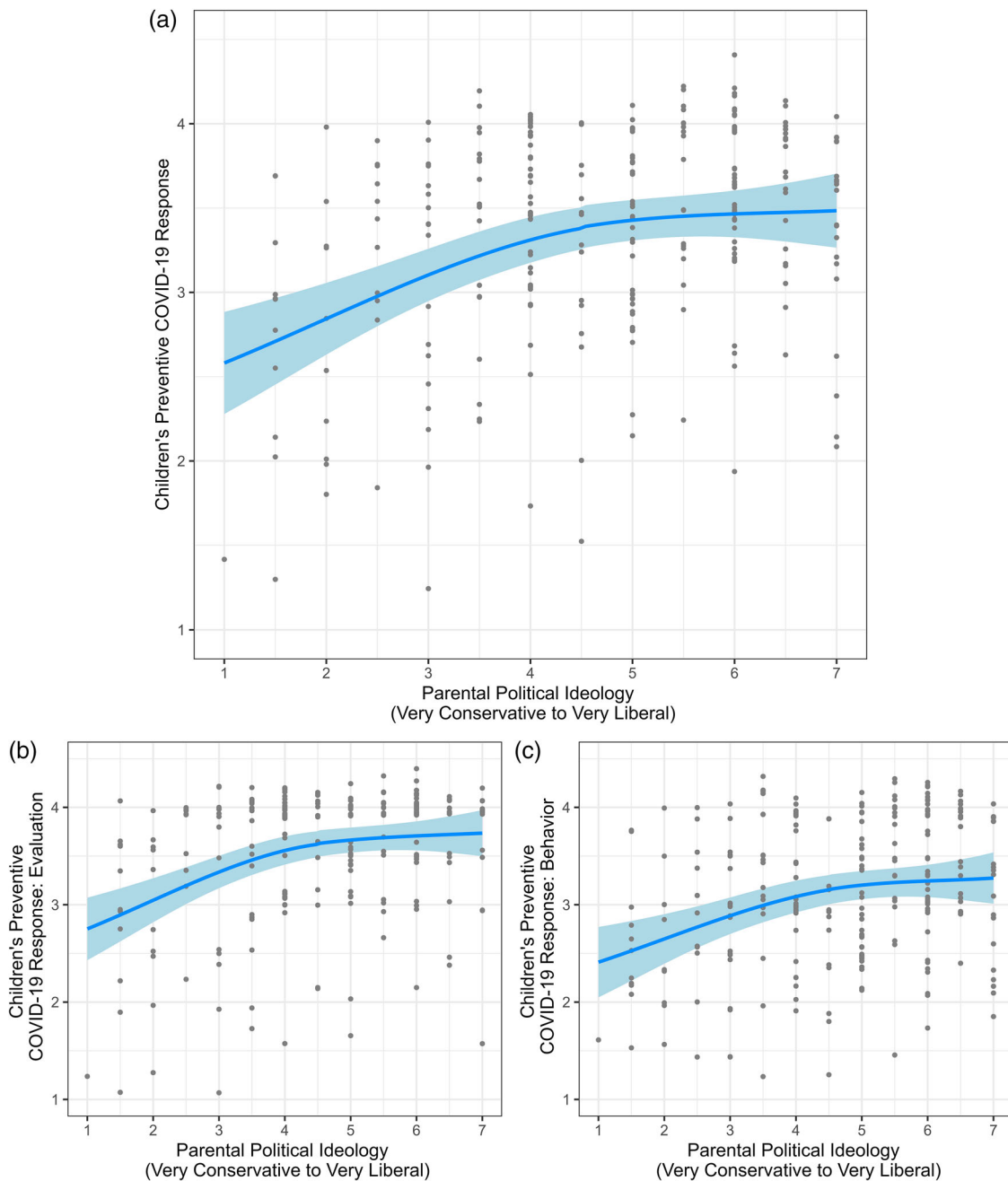Abbreviation: CIs, confidence intervals.

FIGURE 1 Loess partial–effects plots of children's preventive COVID-19 responses (between December 2020 and July 2021) as a function of parental political ideology. Local linear regression applied (higher order polynomials not estimated due to singular fit). Plot a: Greater parent liberalism predicted greater following of COVID-19 preventive behaviours (physical distancing and mask wearing) and more positive evaluations of these behaviours. Plots b and c depict the behaviour and evaluation submeasures, respectively. Error bands: 95% CIs.

linear model (to account for negative skew in children's responding; gamma distribution), $ps < .001$. The findings were also robust across sub-measures, including children's preventive COVID-19 behaviours (Figure 1b), children's evaluations of these behaviours (Figure 1c), Parent 1's political ideology (the parent who reported demographics), Parent 2's political ideology (whose political ideology was estimated by Parent 1), mothers' political ideology, and fathers' political ideology, $ps < .001$. Finally, the observed link neither depended on the completion date (between December 2020 and July 2021) nor which research lab administered the study, $ps > .781$. (See SOM.)

3.2 | Contexts modulating the observed parent–child ideological link

As pre-registered, and to contribute to the existing debate on whether parental influences become stronger with children's age (Gelman et al., 2004; Berndt, 1979; Leshin et al., 2022), we tested whether the observed link depends on age. We added the two-way interaction between parent political ideology and children's age (z-scored) to the main parent model. The interaction was significant, $B = 0.09$, $p = .032$ (Table 2). As depicted in Figure 2, the link between parent liberalism
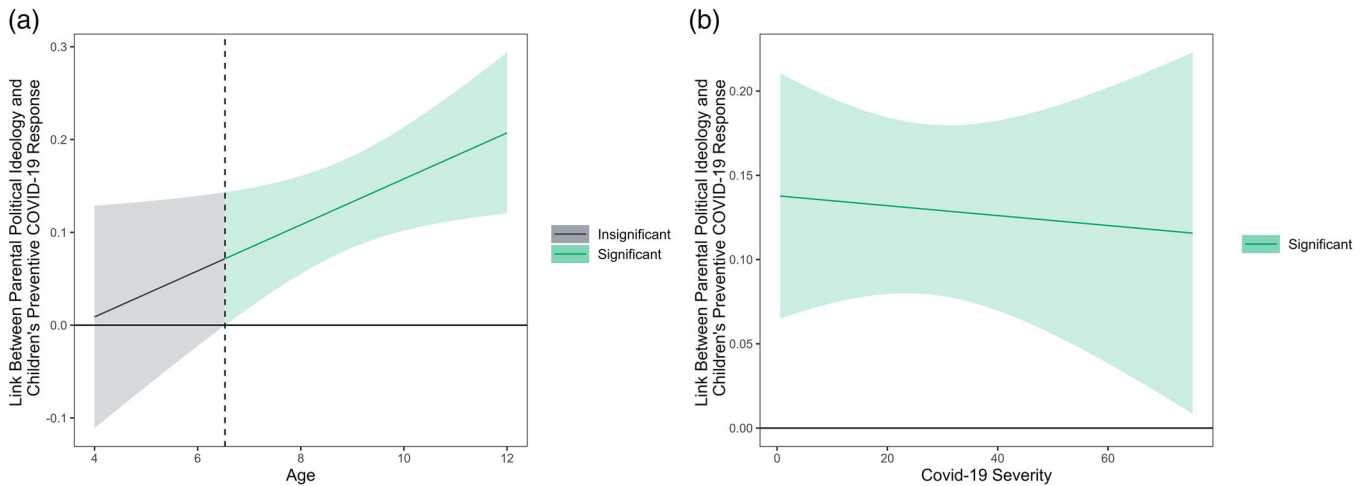
(a)

(b)

FIGURE 2 Johnson–Neyman (Floodlight analysis) plots of the tested interactions. (a) Parental political ideology significantly predicted children's COVID-19 responses for children above 6.53 years old but not below 6.53 years old. (b) The link between parental political ideology and children's COVID-19 responses was significant across the severity of COVID-19 in participants' locations (new daily cases per 100k; maximum boundary on the *x*-axis: +2 *SD*). Error bands: 95% CIs.

(vs. conservative) and greater preventive COVID-19 responses was stronger for older (B = 0.18, 95% CI[0.11, 0.25], p < .001 (+1 *SD*; M = 10.98), than younger children, B = 0.06, 95% CI[−0.01, 0.14], p = .083 (−1 *SD*; M = 6.32). Complementing this simple slopes analysis, a Johnson–Neyman analysis (i.e., Floodlight analysis) revealed that the link between parental political ideology and children's COVID-19 responses was no longer significant under the threshold of 6.53 years old (see Figure 2). This finding should be interpreted with caution, however, given that the effect was quite small and that younger children's responses may be noisier than older children's responses.

In addition to age, we examined COVID-19 severity as a moderator. If ideological differences fail to predict children's responses when COVID-19 is severe, then parental ideology is unlikely to be a meaningful risk factor for viral spread (e.g., Gollwitzer et al., 2020). To test this, we added the two-way interaction between parent political ideology and COVID-19 cases (per 100k) at participants' location on the day participants completed the study (z-scored) to the main parent model. In line with parental ideology playing a meaningful role even during periods of heightened health risks, a significant interaction was not observed, B = −0.01, p = .768 (Table 2; Figure 2).

3.3 | Mechanisms underlying the link between parent political ideology and children's COVID-19 responses

We examined the proposed mediation model. As pre-registered, we hypothesized that the link between parental political ideology and children's COVID-19 responses occurs via children's perceptions of their parents' COVID-19 responses. The mediation model included parental political ideology as the predictor, children's perception of their parents' COVID-19 responses (collapsed across direct guidance, direct modelling and general concern) as the mediator, and children's
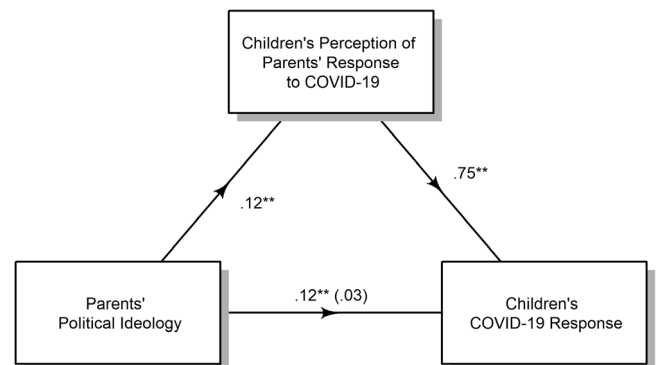

FIGURE 3 Main mediation model. The link between parental political ideology (1–7 scale) and children's preventive COVID-19 responses (1–4 scale) was mediated by children's perception of their parental COVID-19 responses (collapsed across direct guidance, direct modelling and general concern; 1–4 scale).

COVID-19 responses as the outcome variable (main mediation model). Children's age and gender were controls (on all paths of the model). The conducted mediation models involved bootstrapping 5000 SEs and estimated CIs and were conducted using *Lavaan* in R.

The main mediation model was significant, p < .001 (Table 3; Figure 3). Children's perception of their parental COVID-19 response accounted for 72% of the observed parent–child ideology link. These results indicate that children of liberal (vs. conservative) parents exhibited greater preventive COVID-19 responses because they perceived their parents (1) as prompting them to follow these measures, (2) as engaging in more preventive measures themselves, and (3) as more concerned and worried about COVID-19. Mediation analyses conducted for each mechanism individually determined that all three of these mechanisms explained significant variance, and a parallel mediation analysis including the three mechanisms simultaneously found

some support for each mechanism explaining unique variance (see SOM; Tables S5 and S6).

We accounted for common mediation pitfalls (e.g., spurious third variables) (e.g., Bullock et al., 2010). The mediation results remained in a saturated mediation model that included the demographic controls (e.g., parental income; entered on all paths of the model), $p < .001$ (Table 3). The mediation also remained when controlling for children's perception of their *friends'* preventive COVID-19 responses, which was assessed identically to children's perception of their parents' responses except 'parents' was changed to 'friends', $B = 0.08$, $p < .001$. Moreover, children's perception of their friends' COVID-19 responses was not a significant mediator, $p = .258$ (Table 3). As outlined in the Introduction, these robustness analyses tentatively support the potential causality of the proposed pathway; yet, our findings are still clearly limited by the observational nature of our data.

3.4 | Linking community partisanship to children's COVID-19 responding

To complement our analysis at the parental level, we assessed whether political orientation at the community level also predicts children's COVID-19 health responses. As pre-registered, we re-conducted the main parent model but replaced parental political ideology with community partisanship, assessed via the political voting record (2020 U.S. Election; % voters for Joe Biden minus % voters for Donald Trump) of the U.S. County in which children were living (*main county model*). Children in more Democratic voting (less Republican voting) counties reported greater COVID-19 preventive behaviours (physical distancing and mask wearing) and more positively evaluated these behaviours, $B = 0.45$, $p < .001$ (Table 4; Figure 4a). Specifically, children in very Democratic counties ($+2\,SD, M = 0.77$) endorsed these behaviours with a score of 3.61 (out of 4), while those in very Republican counties ($-2\,SD, M = -0.40$) scored 3.09, a ~14% reduction. Unlike parent political ideology, a quadratic effect of county partisanship was not found, $p = .391$.

Supporting robustness, the observed link remained in a saturated county model, which included county education level, median income, density, and COVID-19 severity as controls, $B = 0.51$, $p = .010$. When *z*-scoring, county partisanship qualitatively predicted children's responses more strongly than any of the control variables (Table 4). None of the control variables predicted children's COVID-19 responses, ps $> .084$, except COVID-19 severity (akin to the main parent model). The observed link also remained when adding children's varying schooling experiences (in-person to hybrid to completely virtual) to the model, $p < .001$, and, further, the link was not moderated by schooling experience, $p = 528$. Moreover, the observed link remained consistent across children's self-reported behaviours, $p < .001$ (Figure 4b), and evaluations, $p = .008$ (Figure 4c) and did not vary depending on children's age, COVID-19 severity, when participants completed the study, and which research lab administered the study, ps $> .120$. (See SOM. See RMarkdown for details of these analyses.)

3.5 | Linking parent political ideology and community partisanship to children's COVID-19 responses

Do parental political ideology and community partisanship contribute unique variance to children's preventive COVID-19 responses? We re-conducted the main model but included both parent political ideology and county partisanship as predictors (*z*-scored; *additive model*; Supplemental Note 5). Demonstrating unique predictive validity, both liberal (vs. conservative) parental political ideology and county partisanship predicted greater preventive COVID-19 responding in children: parent political ideology ($B = 0.17$, $p < .001$; Table 5) and county voting record ($B = 0.09$, $p = .026$; Table 5). The strength of the two predictors did not convincingly differ, $p = .206$ (see RMarkdown on OSF for the comparative linear hypothesis test). Political orientation appears to independently predict children's health behaviours on two different ecological levels – at the level of children's direct caretakers and at the level of children's surrounding environments (Bronfenbrenner, 1992).

Do parental political ideology and community partisanship interact to predict children's preventive COVID-19 responses? As pre-registered, the link between parental political ideology and children's health behaviours may be attenuated in Democratic-leaning counties because of greater local regulations and social pressures regarding COVID-19 (Courtemanche et al., 2020). To test this, we added the two-way interaction between parent political ideology and county partisanship to the additive model (*z*-scored; *interaction model*). We found a significant interaction, $B = -0.11$, $p = .003$ (we also tested a non-linear interaction model but this model did not improve model fit, $p = .111$; see RMarkdown on OSF). Two Johnson–Neyman analyses (i.e., Floodlight analyses) were conducted to unwrap this interaction, one from the perspective of community partisanship as the moderator and the other from the perspective of parental political ideology as the moderator. The first analysis revealed that the link between parental political ideology and children's COVID-19 responses was no longer significant in counties in which the vote-share was greater than 34 percentage points for the Democratic candidate (Joe Biden) over the Republican candidate (Donald Trump) (vote-share: % voters for Joe Biden minus % voters for Donald Trump). The second revealed that the link between country partisanship and children's COVID-19 responses was no longer significant for liberal parents; specifically, parents whose political ideology was above 4.32 on the 1–7 scale (1 = *Very Conservative*, 4 = *Moderate*, 7 = *Very Liberal*). These results indicate that (1) democratic environments may have acted as a buffer against the link between parental political ideology and children's COVID-19 responding, and/or (2) parental liberalism may have shielded children from failing to engage in preventive COVID-19 responding in conservative environments (see Figure 5).

4 | DISCUSSION

The present work sheds light on children's development by quantifying the degree to which variation in political orientation amongst
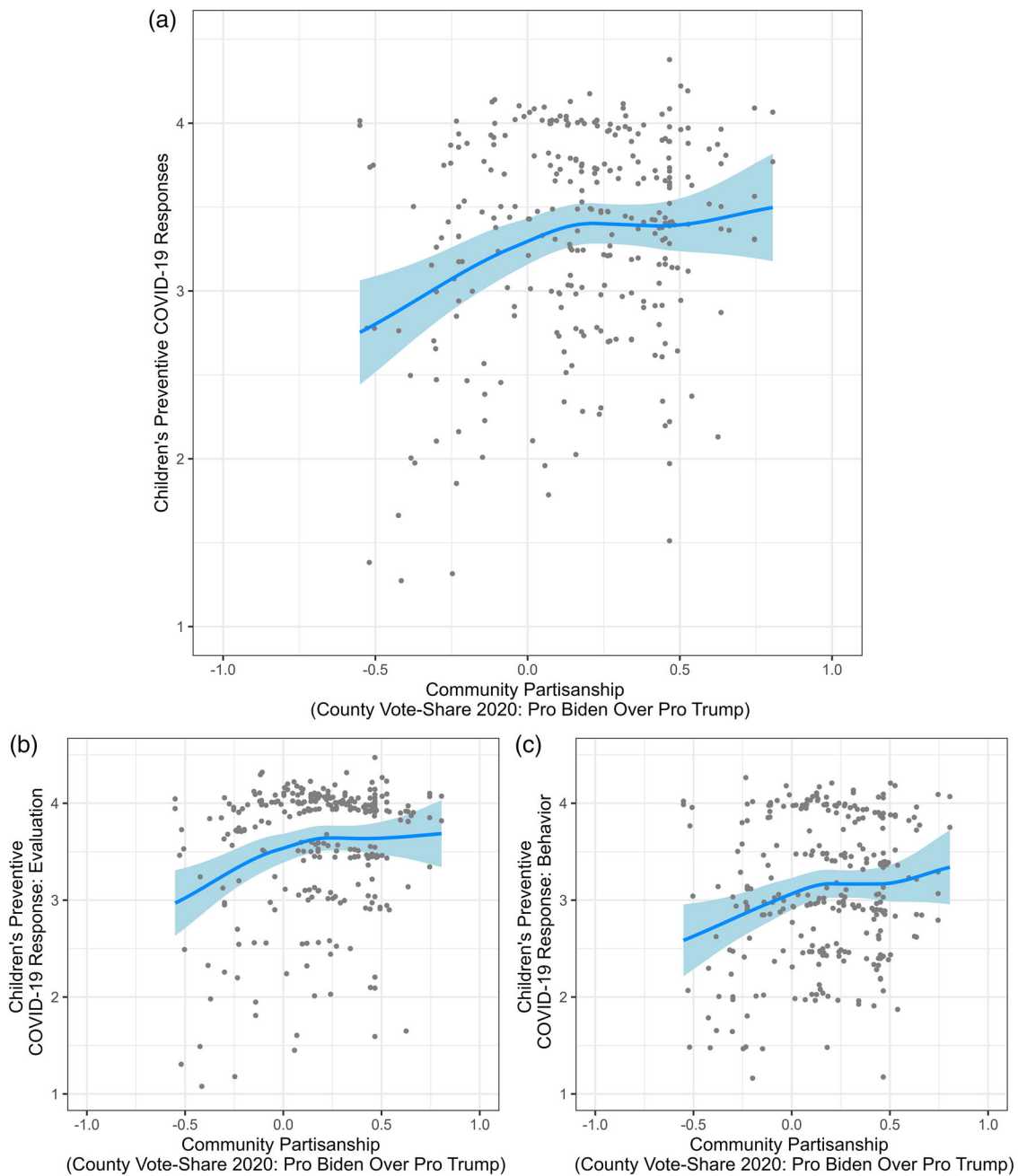
FIGURE 4 Loess partial–effects plots of children's COVID-19 responses as a function of county partisanship (vote-share: % voters for Joe Biden minus % voters for Donald Trump in the 2020 U.S. Election). Local linear regression applied (higher order polynomials not estimated due to singular fit). Plot a: Children living in more Democratic voting (vs. Republican voting) counties exhibited a greater following of COVID-19 preventive behaviours and more positive evaluations of COVID-19 preventive measures (masking and physical distancing). Plots b and c depict the behaviour and evaluation submeasures, respectively. Error bands: 95% CIs.

families and within communities predicts children's health behaviours during a public health crisis. Children of liberal (vs. conservative) parents reported greater preventive health behaviours during COVID-19 (physical distancing, mask wearing) and evaluated these behaviours more positively (a ~21% difference; $\pm$ 2 *SD* in parent political ideology). Similarly, at the community level, children living in Democratic-voting (vs. Republican-voting) counties reported greater preventive COVID-19 health behaviours and evaluated these behaviours more positively

(a ~14% difference; $\pm$ 2 *SD* in county political-leaning). These findings reveal associations between political orientation and children's health behaviors both at the familial as well as community levels, illustrating the potential role of political contexts in shaping children's development.

Numerous analyses supported the robustness of our findings. Parental ideology and community partisanship predicted children's health responses even when controlling for numerous closely related

TABLE 5 Multivariate linear models testing the predictive power of parental political ideology and county partisanship.

Predictors	Additive model			Interaction model		
	B	CIs	p	B	CIs	p
Intercept	3.34	3.27, 3.42	**<0.001**	3.37	3.29, 3.44	**<0.001**
Parental political ideology	0.17	0.09, 0.25	**<0.001**	0.15	0.07, 0.23	**<0.001**
County voting record	0.09	0.01, 0.17	**0.026**	0.05	−0.03, 0.13	0.228
Child's age	0.11	−0.04, 0.26	0.150	0.10	−0.05, 0.24	0.197
Child's gender	0.06	−0.02, 0.14	0.129	0.06	−0.01, 0.14	0.113
Parental political ideology X County voting record				−0.11	−0.19, −0.04	**0.003**
Observations	265			265		
R^2/R^2 adjusted	0.109/0.095			0.139/0.123		

Note: Higher values indicate greater preventive behaviours and more positive evaluations of COVID-19 (physical distancing and mask wearing). County partisanship: % voters for Joe Biden minus % voters for Donald Trump. All predictors z-scored. The additive model includes the main predictors. The interaction model additionally includes interaction terms. Bold values are values that are significant at the $p < .05$ threshold.
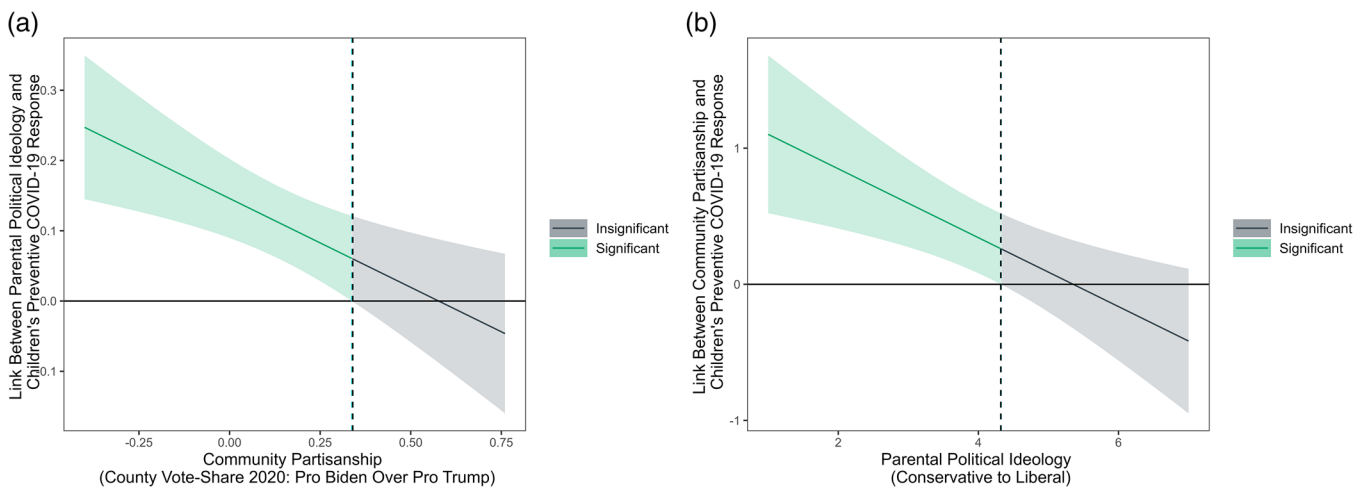Abbreviation: CIs, confidence intervals.

FIGURE 5 Johnson–Neyman (Floodlight analysis) plots of the tested interaction. (a) Parental political ideology significantly predicted children's COVID-19 responses in counties with less than a 0.34 vote-share for Joe Biden but not in counties with a vote-share greater than .34 for Joe Biden (vote-share: % voters for Joe Biden minus % voters for Donald Trump; minimum and maximum boundaries on the x-axis: +2 *SD*). (b) County partisanship (vote-share) significantly predicted children's COVID-19 responses for parents who responded lower than 4.32 on political ideology but not for those who responded greater than 4.32 (1 = *Very Conservative*, 4 = *Moderate*, 7 = *Very Liberal*). Error bands: 95% CIs.

and theoretically relevant variables, including education, income, religiosity, county education level, county income, population density, COVID-19 severity, and schooling format (e.g., in-person or virtual). Moreover, parental ideology and community partisanship were qualitatively better predictors than all these control variables, many of which did not significantly predict children's COVID-19 responding. Additionally, the observed links remained across varying degrees of COVID-19 severity in children's locations, indicating that political divisions remain a powerful predictor of children's health behaviours even when the risks are quite high (i.e., high risks of infection). Furthermore, the observed links did not vary by schooling format (in-person, hybrid or virtual), which additionally supports the contextual consistency of our findings, underscoring the strength of political divisions. Political

differences in the United States appear pervasive enough, both at the more intimate family level and the broader community level, to predict the health behaviours of young children.

We found support for several mechanisms underlying the link between parental political ideology and children's COVID-19 responding. Children of conservative (vs. liberal) parents perceived their parents as (1) less encouraging of following preventive COVID-19 measures (direct guidance), (2) less adherent to preventive COVID-19 measures themselves (direct modelling), and (3) less worried about COVID-19 (general concern); these perceptions, in turn, predicted children's own COVID-19 responding. These findings align with a rich developmental literature outlining how children's behaviours and attitudes are formed (e.g., Segall et al., 2015; Bandura, 1971) and extend

this work by suggesting that these pathways may also play a role in the link between parental political ideology and children's behaviours. Yet, we encourage readers to consider these findings cautiously; though the proposed mediation pathway aligns with past theoretical and empirical work (e.g., Bandura, 1971; Sears & Funk, 1999), our study was purely observational and thus cannot conclusively speak to causal effects nor to the specific order of variables in our mediation.

We found support for several moderators. The link between parental political ideology and children's health responses was stronger for older than younger children; the link was no longer significant below 6.53 years old. This suggests that younger children (vs. older children) may be less reliant on parental cues, though, this interaction may also be driven by greater noise in younger children's responding. Additionally, parental political ideology predicted children's responses in Republican-voting counties as well as slightly Democratic-voting counties but did not do so in strongly Democratic-voting counties (see Figure 5). Said another way, while children of conservative (vs. liberal) parents exhibited decreased health responses in Republican-voting and slightly Democratic-voting counties, in strongly Democratic-voting counties, children of both conservative and liberal parents highly endorsed COVID-19 health measures. Very democratic communities, thus, may act as a 'buffer', eliminating the link between parental political ideology and children's behaviours. Finally, from the perspective of parental ideology, parental liberalism may also act as a buffer against the link between Republican-voting counties and children's lower endorsement of preventative COVID-19 behaviors. Children in Republican-voting (vs. Democratic-voting) counties exhibited lower preventive COVID-19 responding if they had conservative parents but not if they had more liberal-leaning parents (Figure 5). Taken together, living in Democratic-voting environments as well as having liberal parental figures appears to act as a buffer against children failing to engage in preventive COVID-19 measures.

4.1 | Theoretical contributions

The present work examined whether and why variation in parental and community political orientation predicts children's psychology. While much work has examined the general influence of caregivers and environments on children's attitudes and behaviours (e.g., Segall et al., 2015), and how children's political identities develop (e.g., Iyengar, 1979), researchers have only recently examined whether political differences are linked to children's psychology (e.g., Leshin et al., 2022). The present work contributes to this nascent research by (1) revealing that political divisions may even predict children's health responses – responses that can have crucial consequences for health and well-being, (2) suggesting that variation in political orientation is a better predictor of children's psychology than other factors (e.g., family income level, population density), (3) showing that parental ideology and community partisanship *independently* predict children's responses, (4) demonstrating these links across a wide political spectrum (rather than comparing two specific samples; e.g., Rhodes & Gelman, 2009), and (5) identifying mechanisms and moderators of these

links. Finally, the present findings integrate developmental, political, and health science, particularly in terms of major political or societal events (Patterson et al., 2019). In doing so, we shed light on the ways in which political orientation plays a role in children's development.

The present work also informs research on the role of political division in predicting our psychology. During a public health crisis, variation in political orientation predicted even children's health behaviours, a population that, though having some political knowledge (e.g., Van Deth et al., 2011), is significantly less partisan than adults. Importantly, parental ideology and community partisanship were both qualitatively better predictors than numerous other factors, for instance, income and level of education. Our findings, together with adult work on political divisions and COVID-19 health behaviours (e.g., Gollwitzer et al., 2020; Conway et al., 2021), suggest that political variation is one of the most important current factors – if not *the* most important current factor – in determining health behaviours during a public health crisis.

Considering applied implications, our findings can inform policymakers who wish to target children's health behaviours. This is not trivial. Children play a role in the transmission of viruses, even leading to major outbreaks (CDC, 2021; Hyde, 2020). Moreover, due to their relatively lower vaccination rates, they can serve as potential sources for the emergence of new genetic variants (Opel et al., 2021; Yonker et al., 2021). Yet, it is challenging to know how exactly to intervene on the link between parental ideology, community partisanship, and children's COVID-19 responses. This is because many political factors could have contributed to the observed results. Is it conservative political ideology, political partisanship, or the rhetoric of specific political leaders that trickled down to children's failure to follow COVID-19 safety measures? Of these options, we find conservative ideology least likely. Conservatism has been linked to greater (rather than lower) threat sensitivity to physical threats (Crawford, 2017), and conservatives reported being more worried than liberals about the spread of a different virus, Ebola, when a Democrat was president (Doherty et al., 2014). In turn, our findings are more likely driven by political identity (political group loyalty) and the rhetoric and behaviours of political role models (Van Bavel & Pereira, 2018). Said another way, if Republican leaders had not been dismissive of COVID-19, it is unlikely that conservative parents and Republican communities would have failed to practice COVID-19 safety measures, in turn, likely reducing such noncompliant behaviours in children.

4.2 | Limitations

First, our data are observational and correlational. One should not draw causal conclusions. This is especially the case for the tested mediation model; though mediation models imply a causal pathway, it is entirely possible that the ordering of the variables in our mediation model is inaccurate. That being said, and as noted in the Introduction, several aspects support the proposed ordering. For instance, it is unclear how children's perceptions of their parental responses to COVID or children's own COVID-19 responses could have meaningfully altered their parental political ideologies. That is, it is unlikely that

M → X or Y → X. Nonetheless, future research should experimentally examine the proposed pathway.

Second, our study had a number of methodological limitations. For instance, due to physical distancing requirements, children's responses were assessed using self-report measures. Nonetheless, our findings align with adult samples that assessed health behaviours using more objective measures (GPS coordinates) (e.g., Allcott et al., 2020). Additionally, self-report social distancing measures accurately tracked objective distancing at both individual- and county-levels during COVID-19 (Gollwitzer et al., 2022). A further methodological limitation entails that we assessed the identified mechanisms via children's *perceptions* of their parental behaviours and attitudes rather than parents' actual actions. Our findings align with past work on these mechanisms, however (e.g., Bandura, 1971), and remained when accounting for a closely matched control mechanism (i.e., children's perceptions of their *friends'* COVID-19 responding).

Third, it is unclear whether political ideology or political partisanship accounts for the observed links. In our study, we assessed parental political ideology (liberal-conservative) and counties' partisanship (voting behaviour). The issue is that political ideology and partisanship often overlap, for instance, most people holding conservative ideologies also vote Republican and most people living in Republican counties are also conservative (though deviations can occur, particularly in certain subpopulations, such as Black conservatives; Jefferson, 2023). It is thus unclear whether political ideology or identifying with the Democratic versus Republican party – two antagonistic groups that responded very differently to COVID-19 – account for the observed results. However, as noted earlier, we find partisanship to be the likelier culprit given that conservatism is often linked to greater (rather than lower) threat sensitivity (Crawford, 2017), and conservatives reported being more worried than liberals about a prior viral outbreak (Ebola; Doherty et al., 2014).

Fourth, while we examined children's schooling format (in-person, hybrid, virtual), we did not examine local COVID-19 regulations in participants' locations. At the county-level, Democratic (vs. Republican) counties instituted stricter COVID-19 regulations (e.g., Grossman et al., 2020), likely leading children in those counties to more closely follow preventive COVID-19 measures. Future research should examine whether local policies are a mechanism via which community partisanship predicts children's COVID-19 responses.

5 | CONCLUSION

While few events bring groups together like a worldwide crisis, the United States exhibited a distinctly partisan response to COVID-19 (e.g., Grossman et al., 2020). Here, we documented that these political differences extend even to the health behaviours of young children, a presumably non-political population that has been left out of the conversation around the consequences of political division. Our findings: raise the possibility that children are not immune to the consequences of ideology and partisanship in the United States, suggest that interventions targeting political outcomes should not be

limited to adults, and renew urgent calls to bridge the current political divide.

REFERENCES

Allcott, H., Boxell, L., Conway, J., Gentzkow, M., Thaler, M., & Yang, D. (2020). Polarization and public health: Partisan differences in social distancing during the coronavirus pandemic. *Journal of Public Economics*, 191, 104254. https://doi.org/10.1016/j.jpubeco.2020.104254

Bandura, A. (1971). *Social learning theory*. General Learning Press.

Berndt, T. J. (1979). Developmental changes in conformity to peers and parents. *Developmental Psychology*, 15, 608–616. https://doi.org/10.1037/0012-1649.15.6.608

Bornstein, M. H., Jager, J., & Putnick, D. L. (2013). Sampling in developmental science: Situations, shortcomings, solutions, and standards. *Developmental Review*, 33(4), 357–370. https://doi.org/10.1016/j.dr.2013.08.003

Bronfenbrenner, U. (1992). *Ecological systems theory*. Jessica Kingsley.

Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (don't expect an easy answer). *Journal of Personality and Social Psychology*, 98, 550–558. https://doi.org/10.1037/a0018933

Centers for Disease Control and Prevention. (2021). *Science brief: Transmission of SARS-CoV-2 in K-12 Schools and early care and education programs*. https://www.ncbi.nlm.nih.gov/books/NBK570438/#:~:text=Reducing%20SARS%2DCoV%2D2%20transmission,people%20who%20are%20not%20fully

Conway, L. G., Woodard, S. R., Zubrod, A., & Chan, L. (2021). Why are conservatives less concerned about the coronavirus (COVID-19) than liberals? Comparing political, experiential, and partisan messaging explanations. *Personality and Individual Differences*, 183, 111124. https://doi.org/10.1016/j.paid.2021.111124

Courtemanche, C., Garuccio, J., Le, A., Pinkston, J., & Yelowitz, A. (2020). Strong social distancing measures In the United States reduced the COVID-19 growth rate: Study evaluates the impact of social distancing measures on the growth rate of confirmed COVID-19 cases across the United States. *Health Affairs*, 39, 1237–1246. https://doi.org/10.1377/hlthaff.2020.00608

Cowell, J. M., & Decety, J. (2015). Precursors to morality in development as a complex interplay between neural, socioenvironmental, and behavioral facets. *Proceedings of the National Academy of Sciences*, 112, 12657–12662. https://doi.org/10.1073/pnas.1508832112

Crawford, J. T. (2017). Are conservatives more sensitive to threat than liberals? It depends on how we define threat and conservatism. *Social Cognition*, 35(4), 354–373. https://doi.org/10.1521/soco.2017.35.4.354

Cutler, D. M., & Lleras-Muney, A. (2010). Understanding differences in health behaviors by education. *Journal of Health Economics*, 29(1), 1–28. https://doi.org/10.1016/j.jhealeco.2009.10.003

Doherty, C., Kiley, J., & Jameson. (2014). *Ebola worries rise, but most are 'fairly' confident in government, hospitals to deal with disease.* Pew Research Center. https://www.people-press.org/2014/10/21/ebola-worries-rise-but-most-are-fairly-confident-in-government-hospitals-to-deal-with-disease/

Eisenberg, N., & Valiente, C. (2002). Parenting and children's prosocial and moral development. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol., 5, pp. 111–143). Lawrence Erlbaum Associates.

Frenda, S. J., Knowles, E. D., Saletan, W., & Loftus, E. F. (2013). False memories of fabricated political events. *Journal of Experimental Social Psychology*, 49, 280–286. https://doi.org/10.1016/j.jesp.2012.10.013

Gadarian, S. K., Goodman, S. W., & Pepinsky, T. B. (2021). Partisanship, health behavior, and policy attitudes in the early stages of the COVID-19 pandemic. *PloS ONE*, 16, e0249596. https://doi.org/10.1371/journal.pone.0249596

Gelman, S. A., Taylor, M. G., Nguyen, S. P., Leaper, C., & Bigler, R. S. (2004). Mother-child conversations about gender: understanding the acquisition of essentialist beliefs. *Monographs of the Society for Research in Child Development*, 69(1), 116–127.

Gollwitzer, A., Martel, C., Brady, W. J., Pärnamets, P., Freedman, I. G., Knowles, E. D., & Van Bavel, J. J. (2020). Partisan differences in physical distancing are linked to health outcomes during the COVID-19 pandemic. *Nature Human Behaviour*, 4, 1186–1197. https://doi.org/10.1038/s41562-020-00977-7

Gollwitzer, A., McLoughlin, K., Martel, C., Marshall, J., Höhs, J. M., & Bargh, J. A. (2022). Linking self-reported social distancing to real-world behavior during the COVID-19 pandemic. *Social Psychological and Personality Science*, 13(2), 656–668.

Grossman, G., Kim, S., Rexer, J. M., & Thirumurthy, H. (2020). Political partisanship influences behavioral responses to governors' recommendations for COVID-19 prevention in the United States. *Proceedings of the National Academy of Sciences*, 117, 24144–24153. https://doi.org/10.1073/pnas.2007835117

Guidetti, M., Carraro, L., & Castelli, L. (2021). Children's inequality aversion in intergroup contexts: The role of parents' social dominance orientation, right-wing authoritarianism and moral foundations. *PLoS ONE*, 16, e0261603. https://doi.org/10.1371/journal.pone.0261603

Hammond, M. D., & Cimpian, A. (2021). "Wonderful but weak": Children's ambivalent attitudes toward women. *Sex Roles*, 84, 76–90. https://doi.org/10.1007/s11199-020-01150-0

Huber, G. A., & Malhotra, N. (2017). Political homophily in social relationships: Evidence from online dating behavior. *The Journal of Politics*, 79, 269–283. https://doi.org/10.1086/687533

Hyde, Z. (2020). COVID-19, children and schools: overlooked and at risk. *Medical Journal of Australia*, 213, 444–446. https://doi.org/10.5694/mja2.50823

Iyengar, S. (1979). Childhood Political learning in a new nation: The impact of partisanship. *Comparative Politics*, 11, 205–223. https://doi.org/10.2307/421756

Iyengar, S., & Krupenkin, M. (2018, April). Partisanship as social identity; Implications for the study of party polarization. In *The Forum* (Vol., 16, No. 1, pp. 23–45). De Gruyter.

Jefferson, H. J. (2023). The curious case of Black conservatives: Assessing the validity of the liberal-conservative scale among Black Americans. *Public Opinion Quarterly*.

Jennings, M. K., & Niemi, R. G. (1968). The transmission of political values from parent to child. *American Political Science Review*, 62, 169–184. https://doi.org/10.2307/1953332

Killeen, B. D., Chakraborty, S., & Shah, K. (2020). counties_only.csv. https://github.com/JieYingWu/COVID-19_US_County-level_Summaries/blob/master/data/counties_only.csv

Klahr, D., & Nigam, M. (2004). The equivalence of learning paths in early science instruction: Effects of direct instruction and discovery learning. *Psychological Science*, 15, 661–667. https://doi.org/10.1111/j.0956-7976.2004.00737.x

Lee, Y. E., Marshall, J., Deutchman, P., McAuliffe, K., & Warneken, F. (2022). Children's judgments of interventions against norm violations: COVID-19 as a naturalistic case study. *Journal of Experimental Child Psychology*, 221, 105452. https://doi.org/10.1016/j.jecp.2022.105452

Leshin, R. A., Yudkin, D. A., Van Bavel, J. J., Kunkel, L., & Rhodes, M. (2022). Parents' political ideology predicts how their children punish. *Psychological Science*, 33(11), 1894–1908. https://doi.org/10.1177/09567976221117154

Marshall, J., Lee, Y. E., Deutchman, P., Wang, Z., Horsey, C. D., Warneken, F., & McAuliffe, K. (2023). When not helping is nice: Children's changing evaluations of helping during COVID-19. *Developmental Psychology*, 59(5), 953–962. https://doi.org/10.1037/dev0001501

McConnell, C., Margalit, Y., Malhotra, N., & Levendusky, M. (2018). The economic consequences of partisanship in a polarized era. *American Journal of Political Science*, 62, 5–18. https://doi.org/10.1111/ajps.12330

McGovern, T. (2020). 2020_US_County_Level_Presidential_Results.csv. https://github.com/JieYingWu/COVID-19_US_County-level_Summaries/blob/master/data/counties_only.csv

Motyl, M., Iyer, R., Oishi, S., Trawalter, S., & Nosek, B. A. (2014). How ideological migration geographically segregates groups. *Journal of Experimental Social Psychology*, 51, 1–14. https://doi.org/10.1016/j.jesp.2013.10.010

New York Times. (2020). us-counties-2020.csv and us-counties-2021.csv. https://github.com/nytimes/covid-19-data/tree/master/rolling-averages

Nichols, A. (2007). Causal inference with observational data. *The Stata Journal*, 7(4), 507–541. https://doi.org/10.1177/1536867X0800700403

Opel, D. J., Diekema, D. S., & Ross, L. F. (2021). Should we mandate a COVID-19 vaccine for children? *JAMA Pediatrics*, 175, 125–126. https://doi.org/10.1001/jamapediatrics.2020.3019

Patterson, M. M., Bigler, R. S., Pahlke, E., Brown, C. S., Hayes, A. R., Ramirez, M. C., & Nelson, A. (2019). Toward a developmental science of politics. *Monographs of the Society for Research in Child Development*, 84, 7–185. https://doi.org/10.1111/mono.12410

Pearl, J., & Mackenzie, D. (2018). *The book of why: The new science of cause and effect.* Basic Books.

Perez-Truglia, R., & Cruces, G. (2017). Partisan interactions: Evidence from a field experiment in the United States. *Journal of Political Economy*, 125, 1208–1243. https://doi.org/10.1086/692711

Pew Research Center. (2014, June 12). *Political polarization in the American public.* http://www.people-press.org/2014/06/12/political-polarization-in-the-american-public/

Reifen Tagar, M., Federico, C. M., Lyons, K. E., Ludeke, S., & Koenig, M. A. (2014). Heralding the authoritarian? Orientation toward authority in early childhood. *Psychological Science*, 25, 883–892. https://doi.org/10.1177/0956797613516470

Rhodes, M., & Gelman, S. A. (2009). A developmental examination of the conceptual structure of animal, artifact, and human social categories across two cultural contexts. *Cognitive Psychology*, 59, 244–274. https://doi.org/10.1016/j.cogpsych.2009.05.001

Rutjens, B. T., Sutton, R. M., & van der Lee, R. (2018). Not all skepticism is equal: Exploring the ideological antecedents of science acceptance and rejection. *Personality and Social Psychology Bulletin*, 44, 384–405. https://doi.org/10.1177/0146167217741314

Sears, D. O., & Funk, C. L. (1999). Evidence of the long-term persistence of adults' political predispositions. *The Journal of Politics*, 61(1), 1–28. https://doi.org/10.2307/2647773

Segall, G., Birnbaum, D., Deeb, I., & Diesendruck, G. (2015). The intergenerational transmission of ethnic essentialism: How parents talk counts the most. *Developmental Science*, 18, 543–555. https://doi.org/10.1111/desc.12235

Tseng, Y. J., Olson, K. L., Bloch, D., & Mandl, K. D. (2023). Smart thermometer–based participatory surveillance to discern the role of children in household viral transmission during the COVID-19 pandemic. *JAMA Network Open*, 6, e2316190–e2316190. https://doi.org/10.1001/jamanetworkopen.2023.16190

Van Bavel, J. J., & Pereira, A. (2018). The partisan brain: An identity-based model of political belief. *Trends in Cognitive Sciences*, 22, 213–224. https://doi.org/10.1016/j.tics.2018.01.004

Van Deth, J. W., Abendschön, S., & Vollmar, M. (2011). Children and politics: An empirical reassessment of early political socialization. *Political Psychology*, 32, 147–174. https://doi.org/10.1111/j.1467-9221.2010.00798.x

Woolf, S. H., Chapman, D. A., Sabo, R. T., Weinberger, D. M., & Hill, L. (2020). Excess deaths from COVID-19 and other causes, March-April 2020. *JAMA*, 324(5), 510–513. https://doi.org/10.1001/jama.2020.11787

Yonker, L. M., Boucau, J., Regan, J., Choudhary, M. C., Burns, M. D., Young, N., … Barczak, A. K. (2021). Virologic features of severe acute respiratory syndrome coronavirus 2 infection in children. *The Journal of Infectious Diseases*, 224, 1821–1829. https://doi.org/10.1093/infdis/jiab509

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.