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Overconfident, resentful, and misinformed: How racial animus motivates confidence in false beliefs

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Overconfident, Resentful, and Misinformed:
How Racial Animus Motivates Confidence in False Beliefs

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Many Americans not only hold misinformed beliefs about policy-relevant topics (e.g., climate change, public health) but hold those views with high degrees of confidence in their factual accuracy. Epistemic overconfidence – an application of the Dunning Kruger Effect (DKE, or "ignorance of one's own ignorance" – is politically consequential, as misinformed individuals who hold those views with high degrees of confidence may be especially likely to oppose evidence-based policies and resist attitude change. Yet, its psychological origins – particularly in application to misinformation endorsement – are not well understood. In this paper, we propose that racial animus plays a key psychological role in motivating Americans to express confidence in misinformed beliefs. Using nationally representative survey data from the American National Election Study, we find that racial resentment plays a strong role in leading Americans to hold confidently misinformed views about racialized policy issues (e.g., the causes of anthropogenic climate change, the origins of the COVID-19 pandemic), but not on less-racialized issues (e.g., MMR vaccine safety). We conclude by discussing how our work underscores the often-overlooked importance of intergroup attitudes in shaping DKE, and helps resolve theoretical tensions in the study of misinformation acceptance.

Keywords: Misinformation; Covid-19; climate change; public opinion; racial prejudice

Word count: 7,494

1. Introduction:

Misinformation and misperceptions about politically contentious scientific issues are not only prevalent among many Americans, but are often persistent and hard to correct. Scientific and medical experts overwhelmingly agree, for example, that childhood vaccines such as the MMR vaccine are safe and not related to autism (Pew 2015). Climate scientists agree with similar levels of scientific consensus that global temperatures are increasing and that this is primarily due to human activity (Cook et al. 2016). Scientists and public health experts also agree about the need for mask wearing in public places and vaccination as effective ways to mitigate the spread of the Covid-19 pandemic, while rejecting allegedly-effective alternative medical treatments such as Ivermectin and Hydroxychloroquine (Bull-Otterson et al. 2020).

Still, many Americans dismiss expert consensus and accept misinformation pertaining to these issues. Many hold a degree of confidence in their knowledge that can limit efforts to persuade them and correct these misperceptions. *Overconfidence* among individuals who objectively know less than scientific and medical experts is a manifestation of what psychologists call "meta-ignorance" – i.e., ignorance of one's own ignorance – and can be broadly thought about as a form of the Dunning-Kruger Effect (DKE; Dunning 2011).

Epistemic overconfidence can have several politically-relevant consequences: individuals who inaccurately overestimate their own knowledge in different domains may be increasingly susceptible to believing false news (Lyons et al. 2021), may discount information from experts and oppose expert-backed policies (Motta et al. 2018; Motta & Callaghan 2020), and may resist self-correction (Anson 2018). Consequently, people who are highly overconfident may be more likely to continue holding misinformed beliefs, even in the face of factual corrections presenting evidence to the contrary. This may go on to shape socially and politically consequential actions, such as their intentions to engage in pro-environmental and/or healthful behaviors, and express opposition to policies aimed at promoting public health and environmental objectives.

While scholars have made tremendous strides important strides in studying the social and political correlates of misinformation acceptance, we draw attention to a fundamental tension in the role that factual knowledge plays in shaping misinformation endorsement. While some accounts see knowledge as exacerbating partisan motivated reasoning (thereby encouraging individuals to selectively credit certain forms of misinformation as correct), others see knowledge as a mitigating force. In this paper, we take a first step toward resolving this

theoretical tension by investigating how the psychology of intergroup attitudes might underlie the DKE in application to misinformation acceptance.

Specifically, we study how racial prejudice in issue domains where policies or outcomes are often associated with race or evaluated through racial lenses by voters might promote epistemic overconfidence. Drawing on data from the 2020 American National Election Study, we compare misinformation endorsement and meta-ignorance on the safety of childhood vaccines, the reality of anthropogenic (human caused) climate change, and the origins and treatment of the Covid-19 coronavirus. We selected these issues because, as we outline later on, each one bears a unique relationship with intergroup relations and racial prejudice in the U.S.

We find that racial prejudice is associated with both misinformation acceptance and (more importantly, for our purposes in this paper) increased *confidence* in misinformed beliefs. Consistent with our theoretical expectations, we find this to be the case in three scientific issue domains that have been racialized: climate change, the origin of Covid-19, and treatment of Covid-19. In contrast, we find no evidence for this effect on public opinion about childhood vaccine safety, where we expect lower levels of racialization.

Our results add to existing literature on misinformation, racial prejudice, and public opinion about politically contentious scientific issues by providing new insights to the belief systems that undergird misinformation about these issues. In identifying racial prejudice as a factor that shapes not only misinformation but also meta-ignorance about racialized scientific issues, we also add insight into why some forms of misinformation may remain so persistent and difficult to correct, given the widespread and inveterate nature of such prejudices.

2. Misinformation, overconfidence, and meta-ignorance

Many Americans hold views about politically-contentious science that are inconsistent with the best available scientific evidence. Past research, for example, documents high levels of misinformation acceptance regarding the causes of climate change (Brulle, Carmichael, and Jenkins 2012; Egan and Mullin 2017; Motta et al., 2019), childhood vaccine safety (Oliver and Wood 2014; Nyhan et al., 2014; Larson 2018; Motta et al., 2021), and both the origins of the COVID-19 pandemic and effectiveness of non-medically-recommended treatments for the virus (Miller 2020; Motta, Stecula, and Farhart 2020; Yermal 2020).

The prevalence of misinformation in these domains is important, as it may motivate taking politically consequential actions that undermine expert-backed policies and our collective well-being. For example, people who are misinformed about the causes of climate change tend to be more likely to oppose policy efforts aimed at curbing the rise of average global temperatures, and express less concern about the effects climate change may have on human life (Marquart-Pyatt et al., 2011; Ehret et al., 2018). Similarly, people who believe that childhood vaccines are unsafe are less likely to support policies that encourage universal vaccination, and more likely to intend to refuse to vaccinate themselves and their children (Brewer et al., 2018; Benecke and DeYoung 2019; Motta et al., 2021).

Misinformation has also played a powerful role in shaping Americans' health attitudes and behaviors throughout the COVID-19 pandemic. People who believe conspiracy theories suggesting that the COVID-19 pandemic emerged as part of a deliberate "lab leak" or "bioweapon" conspiracy have been shown to be more likely to reject expert consensus about the severity of the COVID-19 pandemic (Motta, Stecula, and Farhart 2020), and less likely to take protective public health action (e.g., social distancing, wearing masks in public spaces; Enders et al., 2020). Likewise, people who believe that discredited methods for treating coronavirus infections are safe and effective -- such as the popular livestock de-worming medication Ivermectin, and anti-malarial drug Hydroxychloroquine -- may be more likely to pursue unorthodox medical remedies themselves, and thereby risk personal injury (Fittler et al., 2021).

Understanding the social, political, and psychological causes of misinformation acceptance is important, as it can help scholars both preempt and attempt to counteract its politically pernicious effects (MacFarlane, Hurlstone, and Ecker 2020; Lewandowsky 2021). While scholars have made substantial progress on this score (see: Flynn, Nyhan, and Reifler 2017 and Jerit and Zhao 2020 for extensive reviews), there are still several important gaps in our collective understanding of why some people accept misinformation about politically-contentious science.

Partisan identity, for example, has been shown to play a powerful role in motivating misinformation acceptance. Past research documents strong partisan asymmetries in who accepts misinformation about the causes of climate change (McCright and Dunlap 2011), childhood vaccine safety (Hornsey et al., 2018b; Motta 2021), and both the causes of and potential treatments for the COVID-19 pandemic (Miller 2020b; Uscinski et al., 2021). Specifically, self-

identified Republicans tend to be more likely to accept misinformation in all three areas, potentially resulting from partisans' receptivity to elite cues (Merkley and Stecula 2018; Pickup et al., 2020; Chen et al., 2021; Stecula and Pickup 2021). For example, partisan polarization in climate-related beliefs has been shown to increase as Democratic and Republican elites have come to hold divergent views of the nature and severity of climate change (Merkley and Stecula 2018, 2021).

Several other social, political, and psychological factors are thought to encourage misinformation acceptance. People who distrust scientific experts (Motta 2018; Merkley 2020; Merkley and Loewen 2021), embrace conspiratorial styles of thinking ("conspiratorial ideation;" e.g., Hornsey et al., 2018a, 2018b; Klofstad et al., 2019), and/or who hold cultural values at odds with scientific consensus (Kahan et al., 2010, 2012; Amin et al., 2017; Lunz-Trujillo et al., 2020) are more likely to accept false claims as true.

Less clear from extant research, however, is the role that knowledge of basic scientific facts and reasoning skills might play in shaping misinformation acceptance. A thriving literature pushes back on the idea that ignorance of basic scientific facts encourages the acceptance of false beliefs; what is known as the "knowledge deficit model" (Sturgis and Allum 2004; Bauer, Allum, and Miller 2007). In fact, people with superior science knowledge and reasoning skills may use that information in service of rationalizing holding misinformed views about politically and culturally contentious science (Kraft et al., 2015), in service of protecting their prior beliefs and identities (Kahan et al., 2010, 2012, 2017; Kahan 2017; although see Pennycook and Rand 2019).

At the same time, though, individuals who objectively know less than scientific and medical experts – but mistakenly believe that they know more (i.e., "meta-ignorance," or ignorance of one's own ignorance) – tend to be more likely to accept misinformation as true. This form of what is known as a Dunning Kruger effect (Dunning 2011) has been shown to motivate the acceptance of inaccurate views about the safety of genetically modified food (Fernbach et al., 2019), vaccine hesitancy (Motta, Callaghan, and Sylvester 2018), and other policy-relevant issues (Anson 2018). Collectively, this line of research implies that information -- and the accuracy of meta-beliefs about the degree to which one is informed -- may have at least some role to play in explaining misinformation acceptance.

One way to reconcile the tension between these two lines of research is to consider the possibility that the application of Dunning Kruger Effects to misinformation acceptance may be standing-in for other politically and socially relevant determinants of misinformation acceptance. As we detail shortly, it could be the case that meta-ignorance arises from Americans' negative attitudes toward social groups impacted by expert-backed policies in politically-contentious scientific domains. In this way, both meta-ignorance and knowledge could play distinct psychological roles in explaining misinformation acceptance; with the former serving as an expression of Americans' racial antipathies, and the latter providing the cognitive mechanisms necessary to engage in motivated reasoning.

3. Overview of racialization/how policies and issues get racialized

Misinformation and misperceptions are also associated with Americans' racial prejudices in several issue domains. The relationships between these prejudices – most commonly evaluated through the traditional racial resentment scale (Kinder and Sanders 1996) – and public preferences for numerous social, economic, and criminal justice policies are well documented (e.g. Tesler 2016; Miller and Davis 2021; Cramer 2020; Peterson and Riley 2022). In many cases these issues have become "racialized", with many Americans viewing either the issues themselves, political candidates associated with these policies, or people impacted by these issues through racial lenses. As this has occurred, perceptions of related facts and stereotypes have also become associated with Americans' racial prejudice; for example, misinformation about Obama's birthplace (Pasek et al., 2015; Jardina and Traugott 2019) or misperceptions and stereotypes of welfare recipients (Hancock 2004).

As electoral politics have become increasingly racialized over the past few decades, Americans' racial identities and prejudices have become more salient (Enders and Scott 2018). These trends have been further amplified in the past decade during the Obama presidency given voters' tendencies to evaluate him and his policy agenda through a racial lens (Tesler 2016), and through Trump's campaign and presidency that explicitly cued racial prejudices and identities among white voters (Abramowitz and McCoy 2019, Banda and Cassese 2021). Consequently, racial prejudices have become associated with a growing number of issues and policies such as the economy (Chen and Mohanty 2018), gun control (Filindra and Kaplan 2017), and even the payment of college athletes (Wallstein et al. 2017).

Both climate change and the Covid-19 pandemic stand out as two issues where multiple aspects of these issues and related policies have become racialized, despite significant scientific consensus on both the causes and potential solutions to these problems. For example, while the scientific community has largely agreed that it is "extremely unlikely" that Covid-19 was manufactured intentionally in a lab (WHO 2021), and has recommended masking and vaccination as best practices to mitigate personal risks and spread of Covid-19, misinformation about Covid-19's origins, treatments, and best mitigation practices are rife.

Elite cues highlighting Covid-19's origin in China – most notably, Trump's frequent references to it as "kung flu" and "the Chinese virus" (Nakamura 2020) – became associated with increasingly prejudiced and xenophobic behavior towards Asians and Asian-Americans in multiple social and online contexts (Croucher et al., 2020; Dhanani and Franz 2020). These cues and other forms of elite rhetoric have often been accompanied by misinformation undermining CDC recommendations on masking and recommendations for alternate treatments such as ivermectin and hydroxychloroquine, despite FDA and NIH advisories against these treatments (Chen et al. 2021). As the disproportionate impacts of Covid-19 on mortality and morbidity in Black communities have become increasingly evident (Millett et al. 2020), surveys also show racial differences between white voters and all other demographics in their willingness to take precautionary measures such as wearing masks (Hearne and Nino 2020, Skinner-Dorkenoo 2022), and show Black communities and other minorities reporting greater Covid-related discrimination when taking mitigative precautions (Strassle et al., 2022).

While climate change has not been racialized in such explicit terms as Covid-19, nor associated with similar forms of overt discrimination towards Black and other minority communities, its harms have also been documented as disproportionately impacting non-white communities within the United States and globally (e.g. Pellow 2016; Sultana 2022). Public opinion on climate change has also been associated with racial prejudices with individuals who hold stronger racial prejudices being increasingly likely to endorse misinformation about climate science and oppose climate mitigation or other environmentally ameliorative policies (Benegal and Holman 2021; Benegal 2018; Dietz et al., 2018; Chanin 2018). While the dynamics of racial spillovers into the issues of climate change and Covid-19 differ, we see considerable evidence of both outcomes and public concern about these issues being divided by racial identities and

prejudices. We therefore expect that both misinformation endorsement and overconfidence on these issues will be associated with racial resentment.

We contrast these issues to the issue of childhood vaccines and the misperception that these are associated with autism. While this misperception is modestly prevalent among the American public with about 11% of Gallup survey respondents expressing concern that vaccines are more dangerous than the diseases they prevent (Reinhart 2020), there is little evidence that the issue of childhood vaccinations is a racialized one. Analyses of autism-related vaccine hesitancy among parents show no significant differences among different racial demographics; rather, these studies indicate income-based differences with either poverty or high levels of affluence being associated with intentional non-vaccination of children (Berezin and Eads 2016; Smith et al., 2010).

There is considerable expert consensus on scientific facts and ideal policy recommendations relating to childhood vaccines, climate change, and Covid-19. Yet misinformation and misperceptions about these issues and their related risks or causes are relatively common and consequential given their impacts on behaviors. A key difference between these is that there is considerable evidence that indicates climate change and Covid-19 have been "racialized", or are viewed by many Americans through different racial lenses. We hypothesize that:

1) Racial prejudice will be associated with increased confidence in misinformation endorsement about climate change and COVID-19.

However, we expect that issues where we do not see such a "spillover" of race into rhetoric or policy outcomes will not see such an association. We thus also hypothesize that:

2) Racial prejudice will *not* be associated with increased confidence in misinformation endorsement about childhood vaccine safety.

We therefore expect that racial prejudices will be associated with misinformation and overconfidence in the contexts of climate change and Covid-19. In contrast, as the safety of childhood vaccines is not a racialized scientific issue, we hypothesize that racial prejudice will not be associated with our measures of misinformation and overconfidence in this domain.

4. Data and methodology:

We test our hypotheses using data from the 2020 American National Election Study (ANES), a nationally representative survey of the US population using a combination of online, phone, and video-based interviews. Our dependent variables use four measures of misinformation endorsement about politically-relevant scientific issues, and respondents' reported levels of confidence in each answer. We provide a table of descriptive statistics for all examined variables in Appendix A.

The ANES first asked respondents to report agreement with one of two statements on different topics – vaccines, climate change, and Covid-19 – with one statement being an established scientific finding, and the other being an endorsement of misinformation or a conspiracy theory. The statements were:

Vaccines:

1. Most scientific evidence shows childhood vaccines do not cause autism

2. Most scientific evidence shows childhood vaccines cause autism (Misinformation)

Climate change:

1. World temperatures have risen on average over the last 100 years.

2. World temperatures have not risen on average over the last 100 years. (Misinformation)

Covid-19 origin:

1. The novel coronavirus (COVID-19) was developed intentionally in a lab.

2. The novel coronavirus (COVID-19) was not developed intentionally in a lab. (Misinformation)

Covid-19 treatment:

1. There is not clear scientific evidence that the anti-malarial drug hydroxychloroquine is a safe and effective treatment for COVID-19.

2. There is clear scientific evidence that the anti-malarial drug hydroxychloroquine is a safe and effective treatment for COVID-19. (Misinformation)

Following each of these questions, respondents were asked how confident they were in their answer about each statement, with responses coded on a five-point scale of "Not at all", "A little", "Moderately", "Very", and "Extremely".

We combine responses from each statement of scientific knowledge or misinformation and the follow-up question about confidence to create a measure of *overconfidence* for each issue. We code this measure as 1 if the respondent both endorsed misinformation about the scientific issue (e.g. agreement that evidence shows that vaccines cause autism), *and* reported a moderate or high degree of confidence in their answer about the issue. We code the measure as 0 if the response included either the correct answer (e.g. vaccines do not cause autism) or the respondent endorsed misinformation but had none or little confidence in their answer, omitting respondents who refused to answer either question from our analyses.[1]

5. Results:

We begin our analysis by documenting the prevalence of misinformation and overconfidence on each of the four politically-contentious science issues included in the ANES. Table 1 shows the prevalence of these views across our sample, treating responses of "Moderately", Very", and "Extremely" as high confidence, and "Not at all" or "A little" as low confidence. Among those respondents who endorsed misinformation about any issue, a majority expressed moderate or higher confidence in their answer.

Table 1: Summary statistics for misinformation and overconfidence

	Vaccines do not cause autism	**World temps risen in the last 100 years**	**Covid-19 was not developed intentionally**	**No evidence that HCQ can treat Covid-19**
Misinformed, high confidence	482 6.66%	646 8.86%	2,723 37.41%	1,338 18.49%
Misinformed, low confidence	223 3.08%	228 3.13%	650 8.93%	412 5.69%
Informed, low confidence	876 12.10%	672 9.22%	660 9.07%	1,056 14.60%
Informed, high confidence	5,656 78.15%	5,743 78.79%	3,246 44.59%	4,429 61.22%
N	7,237	7,289	7,279	7,235

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[1] As a further robustness check, we also code an alternative ordinal measure such that 0 corresponds with a correct answer, 1 corresponds with misinformation endorsement but with low confidence, and 2 corresponds with misinformation endorsement and moderate or higher confidence. We replicate our main analyses using this measure in Appendix E and find no substantial differences in results.

People who are overconfident in misinformed beliefs on one issue, however, are not necessarily more likely to confidently accept *many* forms of misinformation as true. Supplemental analyses suggest that only 53 respondents in our entire sample (0.74%) held misinformed views on all four issues with high confidence, and 363 respondents (5.08%) held these views on three of the four issues in the survey. Meanwhile, 1,791 respondents in the survey (25.04% of the sample) reported misinformation with overconfidence on only one issue.

With this descriptive and contextualizing information in hand, we next examine the correlates of meta-ignorance for each question. To do this, we estimate logistic regression models that include a measure of racial prejudice as our main independent variable of interest, while controlling for respondents' partisanship[2], education, sex, and age[3]. We measure racism by using the four-item composite index of racial resentment (Kinder and Sanders 1996), coding the variable such that 0 indicates the lowest level of racial prejudice on the scale and 1 indicates the highest level of prejudice. The full list of question items and details about scale validity are provided in Appendix B.

Figure 1 presents coefficient plots from these models for our full sample (tables of results are in Appendix C). We also conduct additional robustness checks (presented in Appendix D) estimating these models for only respondents who racially identify as white, and for all respondents who do not racially identify as Black respondents, given how responses to the racial resentment scale vary differently across racial and ethnic identities. We find that the pattern of effects documented in Figure 1 are robust to these alternative specifications. For the model estimating correlates of meta-ignorance about vaccines and autism, we observe this effect is not significant (coef= -0.245, p=0.417). This is consistent with our expectations, given that the topic of childhood vaccine safety is not a racialized one.

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[2] We do not include a measure of ideology in the main analysis for two reasons. First, we are concerned that this measure largely overlaps with partisanship (see Kalmoe 2020), and a correlation between ordered three-item measures of ideology and partisanship has a coefficient of 0.758. Second, the concepts and salience of "liberal" and "conservative" also vary substantially for different racialized groups (see Jefferson 2020). In the 2020 ANES, we observe 11% of white respondents answered "Haven't thought much about this" to the ideology question item, whereas 24% of non-white respondents answered that. However, we do replicate our analyses using ideology in place of, and alongside partisanship, and present these robustness checks in Appendix D. We find that while effect sizes and in some models, the significance of partisanship changes, our results for racial resentment remain consistent throughout these robustness checks.

[3] We do not include a measure of trust in experts in the main model; however, we include this in our robustness checks in Appendix D and find that our overall results are unchanged with this added control.

Figure 1: Effects of racial resentment on overconfidence
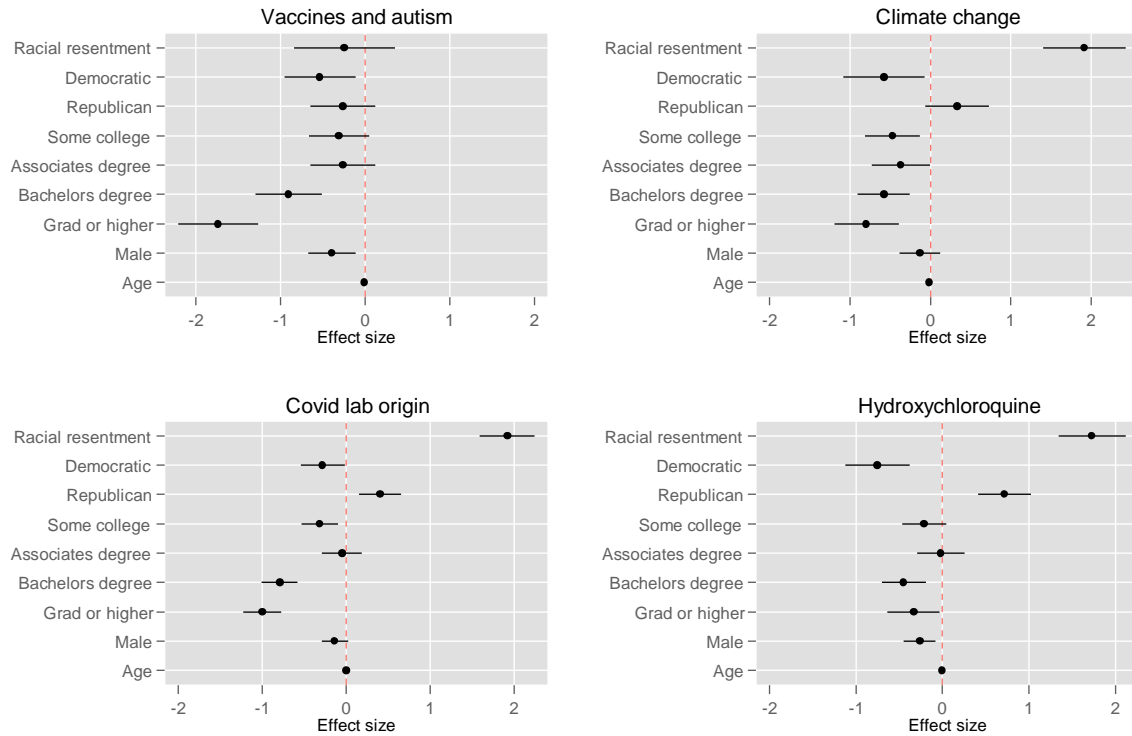
However, for the other three models, we find that racial resentment is significantly associated with increased likelihood of misinformation endorsement and overconfidence (coefs=1.916 for climate change, 1.918 for the Covid lab origin conspiracy, and 1.730 for hydroxychloroquine, p<0.001 for all). These support our hypothesis about racial spillover: for scientific issues such as climate change or Covid-19 that have become racialized, we see racial prejudice being significantly associated with increased likelihood of meta-ignorance on these topics.

We find that for three of the four issue areas – climate change and both Covid-19 related questions – partisanship is positively and significantly associated with the expression of meta-ignorance. We confirm this by calculating post-estimation predicted probabilities from separate logistic regression models restricted to only Republicans and Democrats (respectively), holding all other covariates at their sample means. Figure 2 presents these results. Solid lines correspond to predicted probabilities for each partisan subset at varying levels of racial resentment, and dashed lines indicate 95% confidence intervals.

Figure 2: Partisan differences in meta-ignorance on climate change and Covid-19
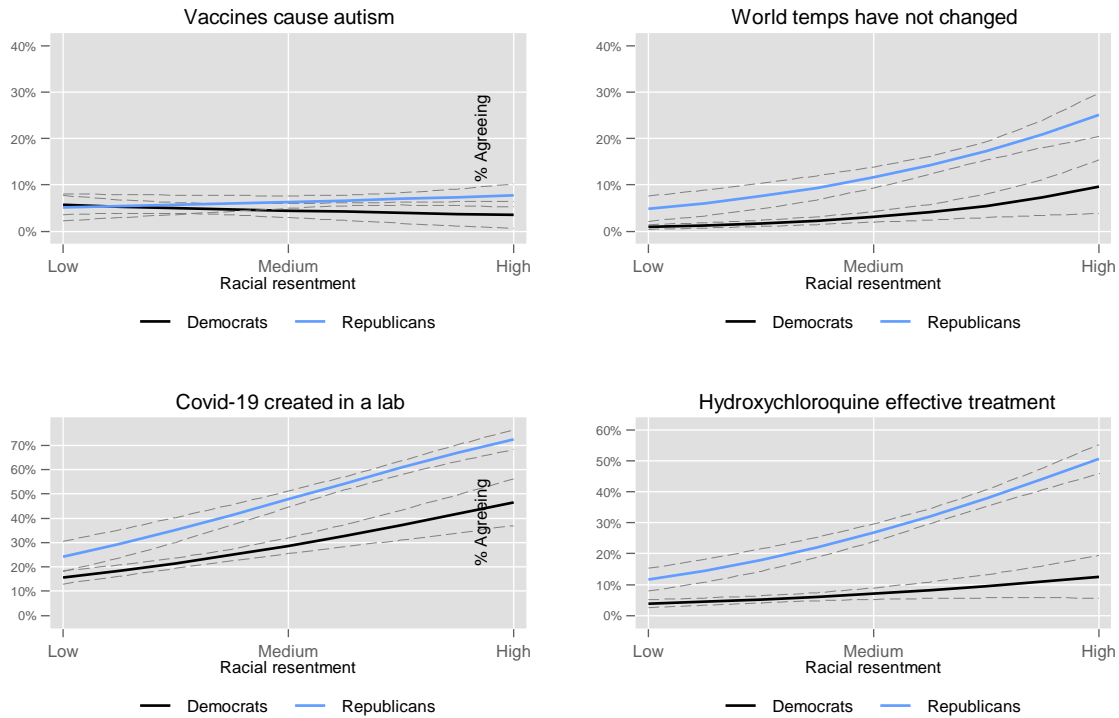

We observe no significant differences between Republicans and Democrats in their likelihood of reported meta-ignorance on vaccines and autism with these confidence intervals overlapping. However, we see that Republicans are generally far more likely than Democrats to endorse misinformation on climate change or Covid-19 and do so with increased confidence in their view. These results are consistent with other scholarship identifying sizeable partisan divides on the topics of climate change and Covid-19 (e.g. Egan and Mullin 2017, Green et al. 2020, Gadarian et al. 2021). These predicted probabilities overlap at the lowest level of racial resentment, but we see significant and growing differences between Republicans and Democrats on these issues at higher levels of racial resentment. We also see that predicted probabilities for both Republicans and Democrats reporting meta-ignorance increase significantly with growing levels of racial resentment for the climate change and Covid-lab origin items. We report additional robustness checks in Appendix D that include controls for ideology, trust in experts, (see footnotes 2 and 3) and group-specific measures of ethnocentrism based on Valentino, Brader, and Jardina (2013). Even with these additional measures, we find that racial resentment

remains consistently associated with meta-ignorance on these three racialized issues, and is not associated with meta-ignorance on the issue of childhood vaccine safety.

We then examine only the subset of respondents who endorsed misinformation on each of these topics. This provides an additional test of our main hypothesis by examining the relationship between racial prejudice and overconfidence among only those individuals who endorse misinformation. Evaluating the five-point measure of confidence as our dependent variable, we then estimate the effects of racial resentment by estimating ordinal logistic models on those respondents whose response endorsed misinformation about either autism, climate change, or Covid-19. Figure 3 presents coefficients from these models, with the corresponding table of results in Appendix C.

Figure 3: Predictors of high confidence among respondents who endorsed misinformation
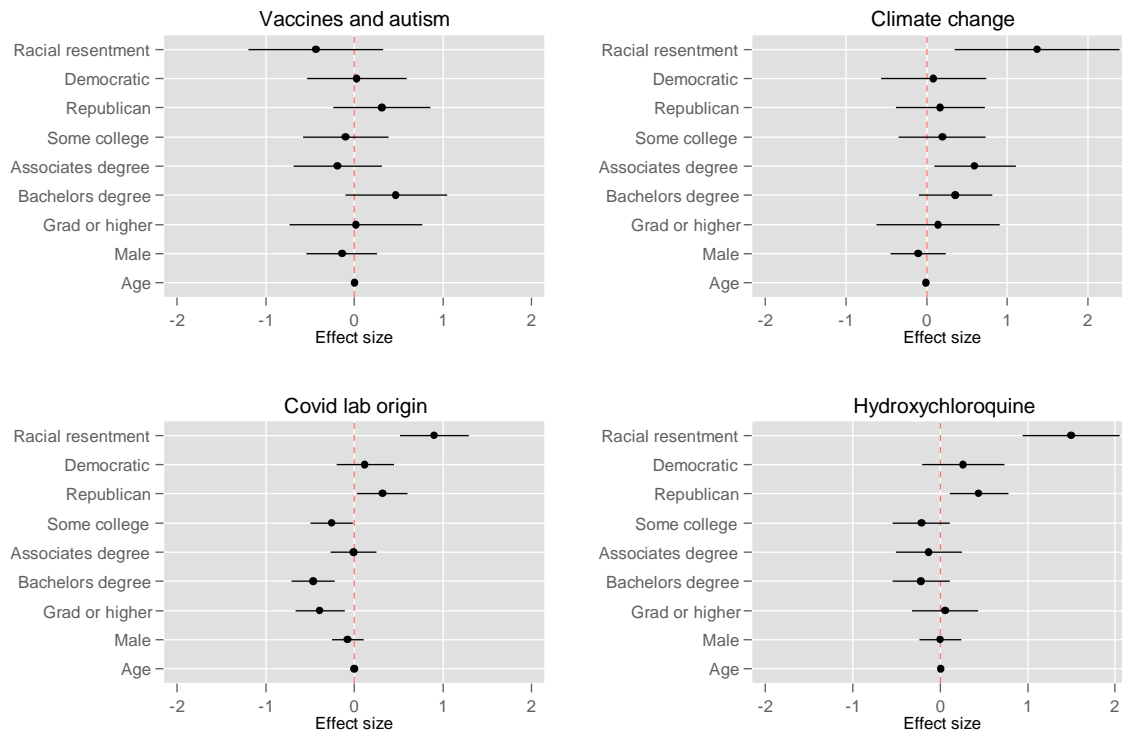
Even when restricting our analysis to this subset, we observe that increased levels of racial resentment are associated with greater confidence in misinformation on the racialized issues of climate change (coef=1.369, p<0.001) and Covid-19 (coef=0.903 for lab origin,

coef=1.498 for hydroxychloroquine, p<0.001 for both), but not for the childhood vaccine safety item, consistent with both our hypotheses. We also observe far smaller sizes or null effects for our measures of partisanship and education. This is particularly striking for the climate change question item: while partisanship and educational attainment are well-documented predictors of misinformation endorsement (e.g. Egan and Mullin 2017) and were correlated with meta-ignorance in our aggregate sample (Figure 1), these factors are not significantly associated with overconfidence among those individuals who disagree that global temperatures are increasing. These results indicate that overconfidence in misinformation on racialized issues is more strongly associated with individuals' racial prejudices rather than partisan identity or multiple demographic factors. This supports our expectations that racial prejudice is associated with overconfidence and meta-ignorance for multiple racialized issue domains, and that this relationship is not evident in issue domains that are not racialized, such as childhood vaccination safety.

6. Conclusion

Misinformation and misperceptions about scientific issues pose significant challenges to both evidence-based policy and important pro-social health and environmental behaviors. Our study examined public opinion on four different issues with high levels of scientific consensus, where many Americans nevertheless hold (confidently) misinformed beliefs: i.e., that childhood vaccines cause autism; that global temperatures have not been increasing; that Covid-19 was intentionally developed in a lab in China; and that Covid-19 can be safely and effectively treated using hydroxychloroquine.

On all four of these issues, we find that varying proportions of the American population not only endorse misinformation, but do so with a moderate or high level of confidence in their views.. For three of these issues where we anticipate high levels of racialization – i.e., climate change, the origin of Covid-19, and the treatment of Covid-19 – we show that racial prejudice (operationalized as racial resentment) is associated with both misinformation acceptance and high levels of confidence in misinformed beliefs. We find this relationship is consistent for different issues that are often perceived through a racial lens by voters, but not for issues that are not racialized: we observe no such relationship between racial prejudice and views about childhood vaccine safety. Our findings are robust to multiple model specifications, across the

partisan aisle, and hold when accounting for several important demographic and political confounds.

These findings advance previous research in two important ways. First, they advance our understanding of the psychological origins of meta-ignorance by suggesting a powerful role for intergroup attitudes in shaping epistemic overconfidence. Specifically, our work carves out a role for both knowledge *and* ignorance to play a role in shaping misinformation endorsement. Knowledge allows people rationalize holding misinformed views, in service of defending their previously-held beliefs and identities. Ignorance (and meta-ignorance, specifically) serves at least in part as an application of individuals' resentment toward social groups that are not their own. Collectively, both knowledge and ignorance influence misinformation acceptance through related, yet conceptually distinct, psychological mechanisms.

Our work also underscores the challenges associated with correcting misinformation among individuals who may hold such views strongly or with high confidence. Given both the widespread and persistent nature of racial prejudices (Smith, Kreitzer, and Suo, 2020; deSante and Smith 2020) and the increasing salience of racial identities and prejudices across recent electoral cycles (Abramowitz and McCoy 2019; Enders and Scott 2018), these findings add insight into why misinformation about racialized scientific and policy issues may be so persistent in spite of growing consensus among scientific experts. Altering one's misinformed views, for some people, might imply changing their racial attitudes and identities; views which tend to be both deeply-held and consequently very difficult to change (e.g., Lodge and Taber 2013). The implications of these results are grim: they indicate that researchers and policymakers interested in addressing misinformation about these issues need not only to address commonly held misperceptions and meta-ignorance among many individuals, but also the intersection of these beliefs with more deeply-rooted racial prejudices for certain issues.

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