

Changes in Dangerous and Competitive Worldviews During the Coronavirus Epidemic: Evidence From a Large-Scale U.S. Panel Study

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Supplementary Materials: Code, Data, Materials [see [Index of Supplementary Materials](#)]



Abstract

In a large ($N = 1,600$) nationally representative and longitudinal survey of the American population, conducted during the COVID-19 pandemic we investigated whether dangerous or competitive worldviews shifted. Results show that across the span of one year (i.e., the first year of the COVID-19 pandemic), dangerous but not competitive worldviews, as measured via the dual-process of prejudice framework, significantly increased. This increase was significantly larger for conservatives, whites and older Americans. Further, those who endorsed both worldviews highly at T1 (April 2020) reported significantly smaller increases on average at T2 (August 2021), suggesting that the world was perceived as more dangerous and more competitive one year later particularly for those who saw it as safer and more cooperative at the onset of the COVID-19 pandemic. These findings highlight that worldviews are malleable, and that specific demographic characteristics and individual differences influence changes in worldviews across time.

Keywords

dangerous worldview, competitive worldview, ideology, demographic differences

Non-Technical Summary

Background

Research has studied how worldviews influence our perceptions of the world and others. During the onset of COVID-19 uncertainty and societal upheaval afforded us the opportunity to examine changes in worldviews.

Why was this study done?

To address this research gap, we sought to study changes in dangerous and competitive worldviews over the span of one year.



What did the researchers do and find?

During the first year of the COVID-19 pandemic, researchers surveyed a large, nationally representative group of Americans twice to see if people's views of the world changed. They found that people increasingly saw the world as a dangerous place, but their views of the world as competitive did not change much. This shift toward seeing the world as more dangerous was especially strong among conservatives, white Americans, and older adults. Interestingly, people who already thought the world was very dangerous or competitive at the start of the pandemic showed less change over time, while those who initially saw the world as safer and more cooperative shifted the most.

What do these findings mean?

Overall, the study shows that people's worldviews are flexible and shaped by both life events and personal or demographic differences.

Worldviews are defined as “a set of assumptions about physical and social reality that may have powerful effects on cognition and behavior” (Koltko-Rivera, 2004, p. 3). These sets of beliefs are considered to be relatively stable over time. Two particularly important worldviews are people's perceptions of the social world as dangerous rather than safe (i.e., Belief in a Dangerous World; BDW) and as competitive rather than cooperative (i.e., Belief in a Competitive World; BCW). BDW represents a view of the world as a threatening place, where society is characterized by instability, and the values and lifestyles of ‘good’ people are under threat from ‘bad’ people (Duckitt et al., 2002). BCW represents a view of society as a ‘competitive jungle’, a place where people act only in their self-interest to gain power and resources, at any cost without regard to the needs or well-being of others (Duckitt et al., 2002). Research has identified these core worldviews as drivers of people's ideological and prejudicial beliefs (Dual-Process Model of Ideology and Prejudice; Duckitt, 2001; Duckitt et al., 2002; Perry et al., 2013; Sibley et al., 2007; Sibley & Duckitt, 2013). Although the importance of BDW and BCW is well established, considerably less work has examined the degree to which these worldviews are malleable, and whether changes in worldviews are more likely to occur for some and not others.

It is possible that during events that are characterized by a high degree of uncertainty (e.g., Morriss, 2020), and threat (e.g., Huber et al., 2022), worldviews that are dependent on perceptions of competitive (BCW) and social (BDW) threat could be changed. The current study sought to investigate whether these worldviews are malleable during a period of uncertainty. Namely, we examined whether during the first year of the COVID-19 pandemic, BDW and BCW significantly changed. We explored this question in a large, highly-powered, longitudinal, and nationally representative sample of Americans. This also allowed us to examine for whom changes in worldviews might be more pronounced. Engaging in this investigation would not only grant us a better understanding of the nature of worldviews themselves but also a better comprehension of the impact that periods of social uncertainty have in human psychology.

The Psychological Impact of Worldviews

The dual process model of ideology and prejudice (Duckitt, 2001) proposed that BDW and BCW are key psychological drivers of two distinct yet correlated forms of prejudice. BDW, which is rooted in elevated safety-related threat perception, should increase (right-wing) authoritarianism (Duckitt et al., 2002), whereas BCW, which is rooted in competition over resources and competition with others, would reinforce views of the world as hierarchical, expressed as social dominance orientation (Duckitt et al., 2002). In fact, a meta-analysis of 46 studies (Perry et al., 2013) testing the Dual Process Model of Ideology and Prejudice suggested BDW relates to increased right-wing authoritarianism, whereas BCW relates to increased social dominance orientation.

Since the original conceptualization of this model, extensive research has linked BDW and BCW with these and other psychological outcomes. BDW has been linked with an increased sensitivity to threats, which often leads to behaviors that aim to increase perceived safety. Examples include owning a firearm (Stroebe et al., 2017), perceiving one's country ingroup as superior to others in an effort to cope with this elevated threat perception (Syropoulos, 2021), as well as an increased endorsement of binding moral foundations (i.e., considering purity, loyalty to the ingroup and deference to the ingroup more in one's moral decision making; Leone et al., 2019). Further, although not directly linked

to prejudice it is possible that BDW, via its robust link with right-wing authoritarianism, could reinforce intergroup hostility and prejudiced attitudes indirectly. Research has found that right-wing authoritarianism predicts increased support for war (Crowson, 2009), as well as sexist (Austin & Jackson, 2019) and racist (Duriez & Soenens, 2009) attitudes.

BCW also has the potential to influence behaviors and attitudes. It relates to a greater likelihood to engage in corrupt behavior (Vilanova et al., 2022), an increased tendency to fake one's qualifications in selective processes (Roulin & Krings, 2016), and a decreased endorsement of individualizing moral foundations (i.e., less consideration of fairness and harm to others when making moral judgements; Leone et al., 2019). Similar to BDW, it is probable that BCW could indirectly reinforce intergroup hostility and prejudice, through its robust link with increased endorsement of social dominance orientation. Extant research connects social dominance orientation with most of the same outcomes as authoritarianism (Bergh et al., 2016), such as discrimination towards outgroups, particularly those perceived as socially inferior to the dominant group (Hindriks et al., 2014), oppressive attitudes towards minority groups (Sidanius & Pratto, 1999; Sidanius et al., 2017), xenophobia (Uenal et al., 2021), and racist attitudes (Ho et al., 2015).

Do Worldviews Change Across Time?

Despite the aforementioned evidence stemming from the model proposed by Duckitt and colleagues (2002) illustrating the consequences of endorsing these two worldviews, less work has focused on what shapes people's worldviews and whether (and why) they fluctuate over time. This gap in research could be due in part to the influence of early theorization about worldviews. Such work viewed these beliefs as constructs which were generally considered stable interpretations/beliefs about our social world and people in it (e.g., Ross, 1993). However, we argue understanding why worldviews change is important, as they can shape perceptions of outgroups and increase prejudice (Sibley et al., 2007; Sibley & Duckitt, 2013) thus having a strong influence on intergroup relations. We expected to see an increase in both BDW and BCW during the first year of COVID-19. We were expecting an increase because of the uncertainty and threat that was generated by COVID-19. Aside from the unprecedented changes in society, ranging from elevated health concerns and mortality rates to significant economic consequences with unemployment rates increasing drastically to nearly 15% during April 2020 (also see Pew Research Center, 2021 for an account of the impacts of COVID-19 on people's lives), several major events took place during the first year of COVID-19 that could have made salient economic or safety related threats, thus increasing BCW and BDW respectively.

First, the pandemic became politicized (e.g., Flores et al., 2022), leading to increased tension and animosity between parties (Connaughton, 2021; Jungkunz, 2021). Overlapping in time with the coronavirus pandemic, the murder of George Floyd sparked protests across the nation as the Black Lives Matter movement grew throughout the summer of 2020, peaking in June but continuing throughout the year. These protests were often met with violence from police and counter-protesters. In November, the presidential election led to accusations of election fraud, and in January 2021 the U.S. Capitol was attacked by rioters who tried to overturn the election. These were all events which could have made salient views of the world that were rooted in threat (BDW) or competition (BCW) and longitudinally studying worldviews during this time period provided an important test of their malleability or stability. It also allowed us to examine what kinds of people (if any) showed substantial shifts in worldviews over time. A timeline of these major events is provided in Figure 1.

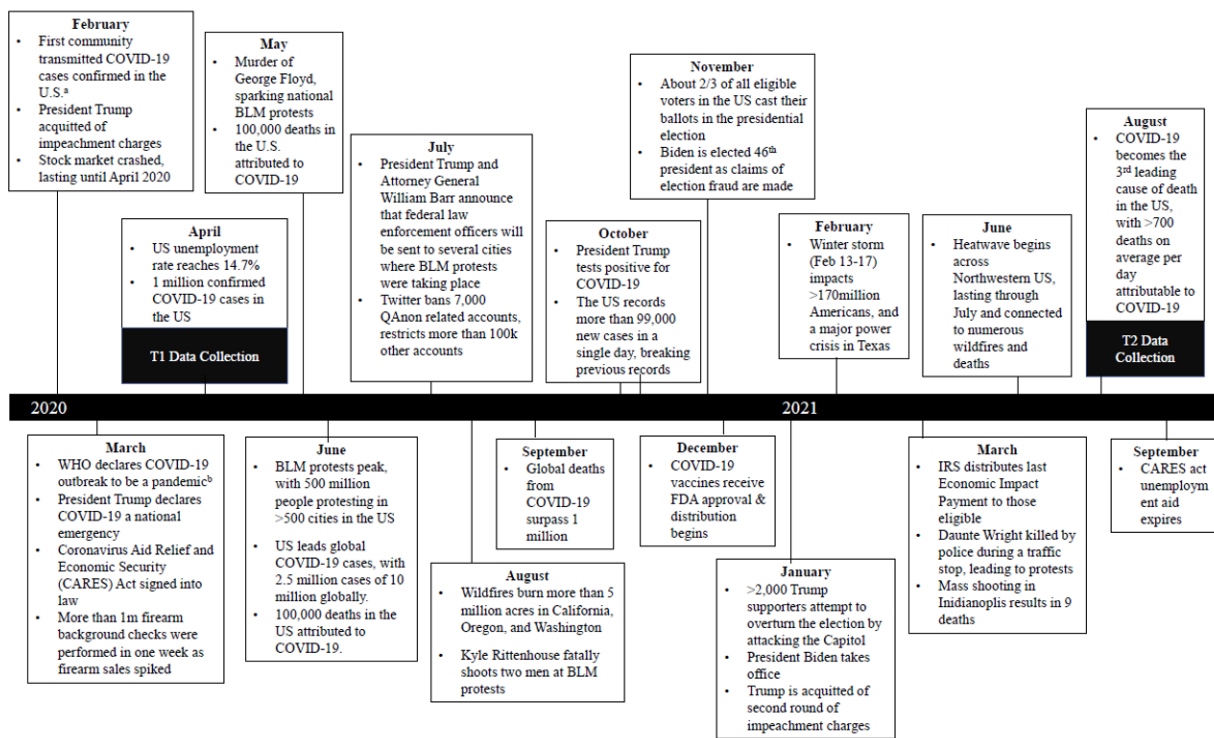
Importantly, this study and expectation of change in worldviews differs from existing research, which highlights the relative stability of worldviews. For example, one investigation which examined the stability of these worldviews was a longitudinal study by Sibley and colleagues (2007) where the researchers found that these worldviews are extremely stable across the span of five months, observing test-retest correlations of up to .93 (Sibley et al., 2007, p. 366). In another longitudinal investigation by Sibley and Duckitt (2013) these worldviews again emerge as relatively stable, as across the span of one year, correlations between the worldviews are strong ($r_s > .60$), and any mean differences are below 0.20. Further evidence for the relative stability of worldviews can be obtained from research on primal world beliefs.¹ In a separate but related line of research, Clifton and colleagues examined several "primals" (i.e., foundational beliefs

1) Primals are defined as "beliefs specific to the overall character of the world rather than particular topics within it—that is, only beliefs about everything" (Clifton et al., 2019).

underlying social cognition) including the safe (vs. dangerous) primal, and the cooperative (vs competitive) primal which are particularly related to dangerous and competitive worldviews. Both of these primals displayed temporal stability in spans of 2 weeks and up to 19 months (Clifton et al., 2019). Evidence from the first months of the pandemic also suggests that these primals remained relatively stable (Ludwig et al., 2023).

Figure 1

Timeline of Major Societal Events Occurring During the Year the Study Was Conducted



Nevertheless none of the aforementioned evidence has considered changes during a time of uncertainty specifically for worldviews (which are similar to but conceptually different from primals). Further, and to the best of our knowledge, no investigation has utilized a nationally representative sample capable of generalizing findings to the U.S. population and across a larger timespan, which would allow for the generalization of patterns of changes in worldviews to a larger swath of the U.S. population and across a larger timespan. Thus, the difference between these studies and our own is that we are explicitly focusing on two worldviews, during a one-year period when many people living in the U.S. were experiencing uncertainty and unprecedented events which could influence their respective worldviews. The degree to which this stability is observed in dangerous and competitive worldviews for a longer period of time, during a time when we would expect to see changes in BDW and BCW, and in a sample from which more generalizable conclusions can be reached (i.e., a non-probability, large and highly-powered sample), has remained mostly unexplored.²

Drawing on evidence from integrated threat theory (Stephan & Stephan, 2000), research from the dual process model of ideology and prejudice (Duckitt, 2001; Duckitt & Sibley, 2017) and foundational research on authoritarianism

2) Studies by Sibley and colleagues (2007), although informative for our hypothesis, used samples that were not generalizable (i.e., it was not a nationally representative sample, but rather a community sample), and relatively small ($N = 247$). Similar arguments could be raised for the findings from Clifton et al.'s work on primals, in which samples were relatively small (N s ranging from 122 to 398) and from convenience samples. In the current investigation we address these gaps by examining change in worldviews in a large and nationally representative U.S. sample, across the span of one year. Even within the early stages of COVID-19 a study looking at the stability of primals had a crowdsourced sample rather than a representative one (Ludwig et al., 2023).

(e.g., [Cohrs, 2013](#); [Feldman & Stenner, 1997](#)) we posit that threats experienced during the first year of the pandemic could cause shifts in people's worldviews. Integrated threat theory posits that realistic and symbolic threats influence intergroup perceptions. During the first year of the COVID-19 pandemic, uncertainty was rampant, with threats noted to both our physical health, as deaths and infections increased, and our economic standing as businesses shut down and the economy came to a halt. Research from authoritarianism (e.g., [Cohrs, 2013](#); [Feldman & Stenner, 1997](#)) and the dual process model of ideology and prejudice (e.g., [Duckitt, 2001](#); [Duckitt & Sibley, 2017](#)) in turn posits that worldviews rooted in threat (i.e., BDW and BCW) are predictive of prejudice and authoritarianism, and that during times of uncertainty, people turn to strong leaders to alleviate such feelings. Thus, relying on such extant writings, we too theorize that the inherent uncertainty produced by COVID-19, coupled with the (realistic) threats that individuals experienced, could shift worldviews predictive of prejudice.

Who Might Experience Greater or Lesser Changes in Worldviews?

To the best of our knowledge, empirical work on which factors could lead to changes in worldviews has been sparse. However, we can theorize about who might experience changes in their worldviews based on existing work on threat perception. The COVID-19 pandemic posed an unprecedented public health threat. It was also an economic threat ([Center on Budget and Policy Priorities, 2022](#)) and an existential threat ([Pyszczynski et al., 2021](#)). Thus, if we were to conceptualize the endorsement of BDW and BCW as elevated threat perception, then we can theorize about who might potentially see the world as more dangerous or competitive. Such research highlights that individuals with a more conservative political ideology are sensitive to threats to their physical safety (e.g., [Crawford, 2017](#)). Since sensitivity to violence or threats to safety appears to be associated with more cultural right-wing belief ([Brandt et al., 2021](#)) it is possible that in the United States, those who hold more conservative or right-wing beliefs (usually Republicans) would experience greater increases in their worldviews.

However, the multifaceted nature of societal threat during the coronavirus epidemic means that other variables beyond ideology may be important to investigate. People's age and race are also important in the U.S. context because of different threats from coronavirus and also differing perspectives on political protest and instability (in both the Black Lives Matters protest, and the attack on the U.S. capital). Other research has found that older age was associated with greater concern about the personal health risks associated with the coronavirus with significant differences between those aged 18-29 and all older age groups, with the highest likelihood of reporting personal concern ([Niño et al., 2021](#)). Similarly, [Naeim and colleagues \(2021\)](#) found that those aged 65 or older were significantly more likely to indicate they were very concerned about COVID-19 as compared with those aged 18-40).

Race is another crucial factor worth considering. During this period, inequalities present in American society rose to the forefront. Extant research finds that white Americans are defensive and often feel threatened in response to changing in the racial status quo ([Krosch et al., 2022](#)). It is thus possible that the salience of these inequalities acted as a threat and reinforced threatening worldviews in white Americans. Furthermore, nationally representative surveys spanning decades of data collected by the Pew Research Center ([Pew Research Center, 2015](#)) as well as more recent surveys ([Pew Research Center, 2020](#)) suggest that the Republican party tends to comprise more white and older party members than the Democratic party. Thus, we focused particularly on examining the extent to which ideology, age, and race predict changes in perceptions of the world as dangerous and competitive during the first year of the Coronavirus pandemic. We sought to test the influence of these factors both independently (i.e., in a bivariate fashion) but also after accounting for their intercorrelation, as at least in the U.S. these factors overlap with one another (i.e., members of the Republican party/political conservatives tend to be older and identify as white).

We also considered the possibility that exposure to and consumption of partisan media, especially right-leaning media, could also lead to increases in dangerous and competitive worldviews. During the COVID-19 pandemic, consumption of conservative media was negatively associated with engagement in protective behaviors (e.g., [Borah et al., 2022](#)) and positively associated with belief in conspiracies about COVID-19 ([Stecula & Pickup, 2021](#)). Existing research also suggests that the rhetoric present in right-wing media can reinforce defensive attitudes, heightening intergroup aggression ([Wirz et al., 2018](#)), increasing the appeal of right-wing populist leaders (e.g., [Bos et al., 2011](#)), and increase right-wing authoritarianism and social dominance orientation ([De Coninck et al., 2024](#)). Considering the potential for

consumption of right-wing media to exacerbate prejudicial beliefs, especially beliefs that are directly influenced by dangerous and competitive worldviews, we also examined whether participants who watched Fox News, one of the most popular right-wing media sources, also exhibited greater increases in how dangerous or competitive the world seemed in their eyes.

An additional parameter worth considering is people's starting views of the world during a period of threat and potential worldview change. If people already see the world as a place that is very dangerous and/or competitive, it is possible that these beliefs would increase even more or alternatively stay consistent with their high levels of perceived dangerousness and competition. Conversely, it is possible that the world might become more dangerous and/or more competitive for those who do not already see it as such (i.e., those who initially endorse BDW and BCW to a lesser degree). Given the lack of pre-existing evidence, we explored the relationship between initial levels of BDW and BCW with change in these constructs in the current investigation.

The Current Study

The current investigation used a longitudinal design in a representative sample of 1600 U.S. citizens to investigate the stability of dangerous and competitive worldviews across a period of sixteen months. We opted to utilize a longitudinal design, as we consider it better suited to study and theorize about change over time, a phenomenon that cross-sectional designs cannot inherently and practically contribute towards. Further, the longitudinal design allowed us to study both within and between person changes in our focal outcomes. Because of the strong and diverse forms of threat occurring during the COVID-19 pandemic, we hypothesized that both BDW and BCW would increase across this 16-month period. We also investigated for whom such potential changes would be more prominent.

We first explored whether across the first year of the COVID-19 pandemic, dangerous and competitive worldviews shifted. We hypothesized that because of the inherent uncertainty of this period, both dangerous and competitive worldviews would increase (H1). Further, we hypothesized that such changes would be more prominent for those more sensitive to threat, namely for older (H2a), white (H2b) and conservative (H2c) Americans. In a more exploratory fashion, we also examined whether existing levels of dangerous or competitive worldview endorsement would relate to higher or lower changes in each respective worldview. Notably, we had no a-priori expectation for the direction of this association, as both directions (i.e., a positive or a negative association) are plausible. We tested these hypotheses in a large, longitudinal, and nationally representative sample of Americans. Analyses for the current investigation were not pre-registered.

Some of the measures used in the current study have been utilized in other publications (Nteta et al., 2023; Reid et al., 2023), however, none of the conducted analyses are repeated. The full survey measures used in all four waves are available on Open Science Framework, along with the code relevant to this study (OSF: <https://osf.io/nd486>). The relevant measures used in this study are described below and described in detail in the Supplemental Online Materials (SOM) (see Syropoulos et al., 2025S).

Method

Procedures

Data were collected via a series of online surveys. These data were part of a larger investigation studying reactions to the coronavirus epidemic which sought to measure what predicts people's behavior in the outbreak, their emotional and coping responses, and changes in their social attitudes. The current investigation used data from the first (April 2020) and fourth (August, 2021) timepoints of data collection. Participants completed online surveys at each point administered by YouGov, a market research and data analytics company. Each survey took approximately 25 minutes to complete, and participants were provided with 1500 YouGov 'polling points' which can be exchanged for small gifts or cash, with these points approximately being worth \$1.50 USD. In these surveys, participants were asked a variety of questions, including measures relevant to the coronavirus, their social identities, personality traits, risk perceptions,

social network composition, beliefs about election changes, competitive and dangerous worldviews, depression and anxiety, and demographic information.

Participants

A representative sample of adult participants was recruited from YouGov's existing participant pool using stratified sampling based on demographic characteristics collected in the full 2016 American Community Survey. These responses were screened by YouGov before for quality for example by reviewing responses of those who responded too quickly, failed attention checks, open-ended responses, or identifying and removing responses with many missing responses. YouGov then provided us with a complete dataset with a total of 1,600 participants completed both T1 and T2. The sample consisted of 55% women and 45% men, ranging in age from 19-92; detailed demographic information is provided in Table 1.

Table 1

Sample Characteristics and Demographic Information (Total N = 1,600)

Demographic Variable	N	%
Gender		
Male	717	44.8%
Female	883	55.2%
Race		
White	1071	66.9%
Black	191	11.9%
Hispanic	207	12.9%
Asian	56	3.5%
Native American	18	1.1%
Mixed or another race	57	3.6%
Education		
No high school	51	3.2%
High school graduate	516	32.3%
Some college/2-year degree	177	11.1%
4-year degree	322	20.1%
Post-grad degree	182	11.4%
Family Income		
Less than 10,000	77	4.8%
10,000 – 29,999	286	17.8%
30,000 – 49,999	321	20.1%
50,000 – 69,999	226	14.1%
70,000 – 99,999	227	14.2%
100,000 – 149,999	190	11.9%
150,000+	84	5.3%
Prefer not to say	189	11.8%
Political Party Affiliation		
Democrat	615	38.4%
Republican	423	26.4%
Independent	447	27.9%
Other	63	3.9%
Not sure	52	3.3%

Demographic Variable	<i>N</i>	%
Political Ideology		
Strong Democrat	419	26.2%
Not very strong Democrat	176	11.0%
Lean Democrat	140	8.8%
Independent	224	14.0%
Lean Republican	134	8.4%
Not very strong Republican	145	9.1%
Strong Republican	323	20.2%
	<i>M (SD)</i>	Range
Age	51.6 (16.2)	19-92

Note. These values represent unweighted sample counts and frequencies.

Measures

Dangerous and Competitive Worldviews

Dangerous and competitive worldviews were measured using a shortened version of Duckitt and colleagues' (2002) 10-item scales only at T1 and T2. Eight items from the scale were used (4 per construct) and consisted of statements such as "It's a dog-eat dog world where you have to be ruthless at times" (competitive worldview) and "There are many dangerous people in our society who will attack someone out of pure meanness" (dangerous worldview). Participants rated their agreement to each statement from *strongly disagree* (1) to *strongly agree* (5). After recoding reversed items, an average of the four items which measure competitive worldview was created ($\alpha_{T1} = .41$; $\alpha_{T2} = .46$) as was an average of the four items measuring dangerous worldviews ($\alpha_{T1} = .59$, $\alpha_{T2} = .64$).

Further inspection of the intercorrelations between items, as well as the correlation of each item with the total construct suggested that removing one item from the BCW scale improved reliability by .02 and .05 at T1 and T2 respectively. Considering this, and that this item failed to load significantly on the BCW construct prompted us to remove this item. We speculate the diminished reliability is a consequence of the use of a shortened version of each worldview scale, which was the product of space and cost concerns that are raised when non-probability samples are collected. Despite this limitation, both constructs displayed longitudinal measurement invariance (see Table S1 in Syropoulos et al., 2025S), and were correlated positively with each other ($r = 0.38$ at T1 and $r = 0.36$ at T2, $ps < .001$) at a magnitude mirroring the association noted in meta-analyses of these constructs (see Perry et al., 2013).

Demographic Information

Participants offered their responses to several questions concerning their gender, race, education level, family income, as well as their political ideology and affiliation. Demographic information from these measures is provided in Table 1. The question focusing on media consumption simply asked participants to select the different news media they watch, of which, Fox News was a response option.

Results

Analyses were conducted on SAS 9.4. We included sample weights provided by YouGov based on participant gender, age, race, and education through the use of the *weight* command. Although no formal a-priori power analyses were conducted, our aim was to be able to examine associations and group comparisons with small effect sizes. A sensitivity analysis for a linear multiple regression random model calculated with G*Power 3.1.9.7 (Faul et al., 2007) for our sample across waves ($N = 1,600$), power set to .80, and alpha set to .05 illustrated that we are able to detect effect sizes as small as $R^2 = .006$ for 1 predictor (time), $R^2 = .008$ for four predictors (demographics), and $R^2 = .009$ for 5 predictors

(demographics and T1 worldview). For paired sample *t*-tests comparing T1 and T2 scores, we would be able to detect effect sizes as small as $d = 0.07$ with power of .80 and alpha of .05.

Although our design would potentially benefit from a multilevel linear regression analysis, due to the occurrence of measurement only at two timepoints a year apart, a multilevel analysis is not feasible. Shaw and Flake discuss this issue in their Introduction to Multilevel Modelling textbook (<https://www.learn-mlms.com/index.html>, Chapter 10), stating that “Three is the minimal number of points required to estimate a slope for time in a longitudinal analysis, because with only two time points you are just looking at the difference between two time points, not a trend over time”; see also [McCoach and Kaniskan \(2010\)](#) for a more in-depth discussion. Thus we opted to estimate difference scores subtracting T1 scores from T2 scores. For changes across time we conducted paired sample *t*-tests. To determine whether different demographic characteristics predict larger or smaller in magnitude changes, we regressed the difference scores for both worldviews on our focal predictors.

Do Dangerous Worldviews Change Across Timepoints?

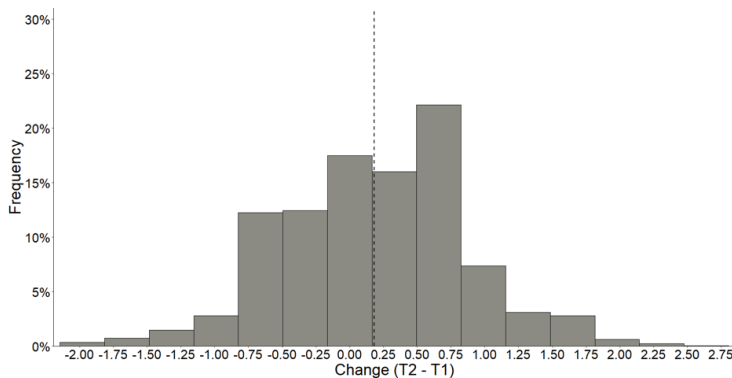
A paired sample *t*-test was conducted to determine whether there were significant changes in BDW over the span of sixteen months (from T1 to T2). Overall, there was a significant increase of a small effect size in dangerous worldviews, $t(1599) = 8.70$, $p < .001$, $d = .20$. Participants' BDW increased on average by 0.15 units from T1 ($M = 3.29$, $SD = 0.70$) to T2 ($M = 3.44$, $SD = 0.75$). Based on these comparisons, we calculated difference scores by subtracting the T1 scores from the T2 counterparts.

For How Many People Did Dangerous Worldviews Change?

Changes in beliefs in BDW ranged from a decrease of 2 points to an increase of 2.75 points (see [Figure 2](#)). 280 participants (18.34%) exhibited no change in BDW, more than half of participants ($n = 838$, 50.18%) reported increased dangerous worldview scores. The remaining 482 participants (31.49%) reported decreases in their BDW scores.

Figure 2

Distribution of Change Scores for Dangerous Worldviews From T1 to T2



Note. Dashed line indicates average change, $M = 0.15$.

Do Competitive Worldviews Change Across One Year?

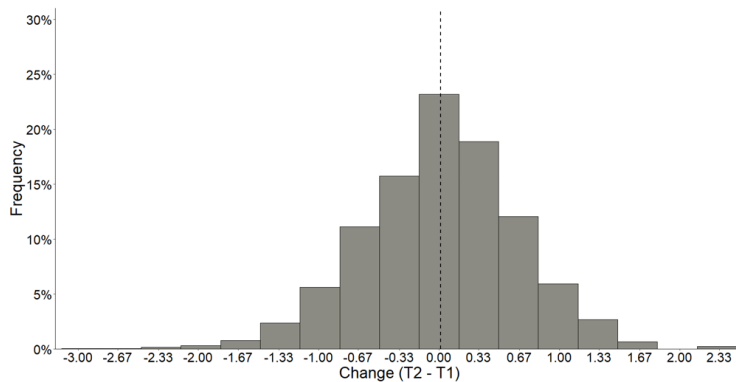
No significant difference, $t(1599) = -0.68$, $p = .496$, was observed for competitive worldviews. In fact, the average value was almost equal between scores in BCW at T1 ($M = 2.73$, $SD = 0.73$) and T2 ($M = 2.72$, $SD = 0.73$) was observed. Similar difference scores (to BDW) were also calculated for BCW.

For How Many People Did Competitive Worldviews Change?

Changes in competitive worldviews ranged from a decrease of 3 to an increase of 2.33 ($M = -0.01$, $SD = 0.67$). Using unweighted frequencies, we find that there was no change in competitive worldviews for 371 participants, or 23.2% of the sample (see Figure 3). For 581 a decrease was noted in their competitive worldview score (36.3%), and for 648 participants an increase was noted (40.5%).³

Figure 3

Distribution of Change Scores for Competitive Worldviews From T1 to T2



Note. Dashed line indicates average change, $M = -0.01$.

Which Groups Reported Larger Changes in Worldviews?

Since we had no a-priori expectation about how income, education and gender would influence the two worldviews, we only treated these variables as additional covariates in our analyses. Results for these models were highly consistent in the direction and magnitude of the effects noted in Table 3. Thus, we report results for these models in Table S4 (Syropoulos et al., 2025S).

Zero-Order Correlations

Although we were able to clearly distinguish which demographic factors are correlated with changes in dangerous or competitive worldviews through zero-order correlations (see Table 2) it is important to account for the overlap of these factors. Age, race, and political ideology all related to one-another, in a manner that suggests that older, white and conservative individuals experienced greater increases in dangerous worldviews. Thus, to determine whether these associations would consistently explain changes in worldviews across time after adjusting for each other we estimated a hierarchical linear regression model for each worldview. In the first pair of models, the two worldview change scores were regressed on race (1 = *person of color*, 0 = *white*), conservative political ideology, and age. In a second and set of models, we included the T1 counterpart of each worldview respectively.

3) For a closer look at the specific percentages for both worldviews see Table S2 in Syropoulos et al., 2025S.

Table 2

Correlations for All Measures in the Study

Measure	1	2	3	4	5	6	7
1. BDW Change	–						
2. BCW Change	.10***	–					
3. Conservative Ideology	.22***	.01	–				
4. Being BIPOC	-.12***	-.05	-.14***	–			
5. Age	.15***	.07	.19***	-.18***	–		
6. BDW at W1	-.40***	-.04	.20***	.06	.04	–	
7. BCW at W1	-.04	-.47***	.11***	.13***	-.16***	.38***	–
8. Watching Fox News	.14***	-.03	.37***	-.12***	.11***	.04	-.003

****p* < .001.

Predictors of Changes in Dangerous Worldview

Overall, (conservative) political ideology and age remained significant predictors of changes in BDW, with and without accounting for dangerous worldviews at T1. Race was a significant predictor in the first model, but its association was rendered non-significant after accounting for BDW at T1. In general, participants who were more conservative, older and white reported greater increases in BDW overtime. These demographic indicators explained a small portion of the variance in changes in BDW (6%) whereas the inclusion of the starting scores of BDW explained an additional 20%. Results suggested that those who perceived the world as more dangerous at T1 experienced smaller increases in BDW across the span of one year.

Predictors of Changes in Competitive Worldview

No demographic indicator related to changes in BCW, and together, race, age and political ideology explained only 1% of the variance in the outcome. The inclusion of starting levels of BCW led to 21% of the variance in changes in competitive worldviews to be explained.

Table 3

Linear Regression Models for the Predictors of Changes in Dangerous (BDW) and Competitive (BCW) Worldviews Across One Year

BDW Change regressed on	Model 1 (<i>R</i> ² = .06, Adj. <i>R</i> ² = .07)						Model 2 (<i>R</i> ² = .26, Adj. <i>R</i> ² = .26)					
	<i>b</i>	<i>SE</i>	β	<i>p</i>	95% CI		<i>b</i>	<i>SE</i>	β	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>					<i>LL</i>	<i>UL</i>
Being a BIPOC	-0.10	.03	-.07	.005	-.17	-.03	-0.04	.03	-.03	.247	-.10	.02
Conservative Ideology	0.09	.01	.17	< .001	.06	.12	0.14	.01	.27	< .001	.12	.16
Age	0.01	.001	.09	< .001	.001	.005	0.001	.001	.10	< .001	.002	.006
Watching Fox News	0.13	.05	.07	.012	.03	.23	0.10	.04	.05	.025	.01	.19
BDW at T1							-0.42	.02	-.45	< .001	-.47	-.38

BCW Change regressed on	Model 1 (<i>R</i> ² = .01, Adj. <i>R</i> ² = .002)						Model 2 (<i>R</i> ² = .22, Adj. <i>R</i> ² = .22)					
	<i>b</i>	<i>SE</i>	β	<i>p</i>	95% CI		<i>b</i>	<i>SE</i>	β	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>					<i>LL</i>	<i>UL</i>
Being BIPOC	-0.05	.04	-.04	.134	-.12	.02	0.03	.03	.02	.376	-.03	.09
Conservative Ideology	0.01	.01	-.01	.604	-.02	.04	0.05	.01	.09	< .001	.02	.08
Age	0.002	.001	.04	.105	-.001	.003	-0.001	.001	-.03	.003	-.003	-.001
Watching Fox News	-0.08	.05	-.04	.134	-.18	.02	-0.11	.05	-.06	.021	-.20	-.02
BCW at T1							-0.44	.02	-.48	< .001	-.48	-.40

Once again, those who perceived the world as more competitive at T1 experienced smaller increases in BCW across the span of one year. Finally, age emerged as a significant predictor of changes in worldviews, but this effect was very small and was not observed when the bivariate association was examined, leading us to consider it unreliable.

Discussion

We examined changes in dangerous and competitive worldviews during a period of intense societal threat in a representative panel study including 1600 U.S. citizens. At a nationwide level, we found an overall increase in average levels of dangerous (but not competitive) worldviews. We also sought to pinpoint for whom these changes were potentially more prominent. Our analyses suggest that for dangerous worldviews this increase appears to be larger for white, conservative, and older Americans, as well as for people who tend to consume more conservative-leaning media. It is perhaps not surprising that the world appears to be more dangerous for those who are more likely to justify the existing order of things (for a review see [Jost & van der Toorn, 2012](#)). In line with this theorization, it is possible that during this time of high threat and societal change, individuals who are more prone to be concerned about their security (i.e., white, older, and conservative Americans, e.g., [Jost et al., 2003](#)) grew more concerned about the state of the world. Our findings provide a new perspective on existing work which has highlighted the relative stability of dangerous worldviews, by showing that across the span of over one year, during a time of high turmoil, perceptions of the world as a dangerous place can increase. While previous research has generally found these worldviews to be stable across similar timespans (e.g., [Sibley & Duckitt, 2013](#)), our research suggests that the stability observed could depend on the social context and historical period when worldviews are measured. Our research cannot identify what specific kinds of phenomenon (such as a pandemic, widespread protests, or political instability) shift these dangerous worldviews, and future work might try to include more qualitative work to attempt to delve into what experiences might cause these shifts. With regards to changes in competitive worldviews no overall significant increase was observed. It is possible that the COVID-19 pandemic might have impacted people's sensitivity to safety-related threats (i.e., BDW) but not necessarily competition-based threats (i.e., BCW). However, this claim is only speculative in the absence of any direct measures of realistic or symbolic threat.

For both worldviews, these increases were more prominent for those who, at the beginning of the pandemic, saw the world as either less dangerous or competitive. One explanation for these findings is that for people who were already high on dangerous and competitive worldviews, the world seemed to them as highly dangerous and competitive before the pandemic, and thus nothing changed in their perceptions throughout this period. Instead, for those for whom the world was relatively safe and cooperative, the pandemic changed such perceptions. The initial worldview people hold represents an additional condition to consider in studying worldview change: while periods of instability might cause people who generally see the world as safe and cooperative to change their views, those who already believe the world to be dangerous and competitive may interpret instability as simply confirming what they already know to be true. Future longitudinal research might seek to identify whether there are conditions under which those with high levels of BCW and BDW reconsider and reduce endorsement of these beliefs given the relationships between these worldviews and intergroup prejudice. On the other hand, understanding whether these shifts among those with initially low levels of BCW and BDW are temporary, and could return to 'pre-event' levels in the longer term is a question requiring further work. For example, people who may initially have had a more cooperative view of the world may also be more likely to attend to instances of altruism, such as neighbors sharing resources, schools providing free meals, or medical staff continuing to work in dangerous conditions. It is unclear how permanent these shifts are, and whether dangerous and competitive worldviews only tend to increase rather than fluctuate.

From an applied perspective, the current findings increase our insight into how periods characterized by societal crises can potentially influence people's perceptions of the world. Our findings suggest, that for white, older and conservative Americans, and for those who do not find the world to be dangerous or competitive, social phenomena like the COVID-19 pandemic can reinforce the view that the world is a dangerous or a competitive place. Considering the plethora of evidence linking these worldviews with endorsement of prejudice ideologies (e.g., [Perry et al., 2013](#)), such

an increase could potentially perpetuate intergroup conflict, prejudice, political animosity, and extremism by reinforcing views of the world rooted in threat.

From a theoretical perspective, the current findings challenge previous beliefs about the stability of worldviews as constructs that are not malleable. Empirically we found small yet significant increases in dangerous worldviews. Descriptively, roughly 40% of participants experienced increases and 30% of participants reported decreases in BDW, suggesting that regardless of the direction, participants reported a change in their worldview scores over a long period of time. Although it is not possible to make a direct claim about what caused changes in people's dangerous and competitive worldviews, the period during which data collection occurred was fraught with uncertainty and threats.

Limitations and Future Directions

Future studies can contribute to the evidence emerging from current investigation in several meaningful ways. First and foremost, future studies could benefit from having measures that have higher reliability. Our two primary outcomes had at best mediocre reliability, however, the fact that a plethora of existing work has used the dangerous and competitive worldview scales (both scales have been used in at least 46 studies as of 2013, with shorter versions also being used; see [Perry et al., 2013](#)) lends some support for the use of these measures.⁴ Future research should also examine racial/ethnic differences more definitively. In our case, despite recruiting a nationally representative sample, due to attrition across the 16-month period of data collection, we were unable to meaningfully compare all racial groups on our two outcomes with large enough samples for all demographic categories (for this exploratory analysis see [Syropoulos et al., 2025S](#)). Another important factor worth exploring is geography. The influence of environmental and societal factors on the endorsement of worldviews has not received considerable attention. Crime rates, income inequality, demographic composition, as well as immigration rates could all be candidates for factors that may give rise to more dangerous or competitive worldviews.

Additional avenues worth exploring include the potential impact of exposure to certain sources of news on perceptions of the world. For example, research has found that media exposure influences people's attitudes on salient issues during the epidemic, such as COVID-19 vaccination (e.g., [Zimand-Sheiner et al., 2021](#)). In addition, extant research has established dangerous and competitive worldviews as antecedents of social right-wing authoritarianism and social dominance orientation ([Perry et al., 2013](#)). Dangerous worldviews in particular also predict firearm ownership ([Stroebe et al., 2017](#)) and intergroup prejudice ([Cook et al., 2018](#)). Competitive worldviews also relate to increased intentions to engage in corrupt behaviors ([Vilanova et al., 2022](#)). However little to no evidence exists highlighting how changes in world views relate to change in actual behavior.

Although our large longitudinal dataset provides us with the necessary power to detect small sizes, there should be some caution in interpretation of these findings. The hypotheses we examined here were not pre-registered and were exploratory. The nature of COVID-19 and other events are of course unpredictable, so replicating our findings would be very difficult. Constraints of generality (see [Simons et al., 2017](#) for a discussion) of our results should be acknowledged. We believe our findings – that U.S. residents increased their endorsement of a view of the world as a dangerous place between 2020 and 2021 – can only be used to describe the adult U.S. population during the same period and historical context. We speculate that other times of uncertainty or instability in the U.S. could be opportunities to study worldview change and potentially yield comparable results. Adding to these constraints of generality is the need to understand how diverse cultural and national contexts could produce different worldview changes in response to uncertainty. For instance, it is possible that in more culturally-tight contexts order might be retained, a finding supported by evidence linking cultural tightness with less COVID-attributed deaths ([Gelfand et al., 2021](#)), limiting the rise of dangerous worldviews. Conversely, it's possible that increased economic burdens created in certain contexts could exacerbate competitive worldviews.

4) Crucially, in their meta-analysis of work on BDW and BCW and their association with RWA and SDO, [Perry and colleagues \(2013, p. 118\)](#) highlight that despite differences in the number of items used to capture BDW and BCW, what is expected is a difference in effect size but not the directionality of hypothesized associations ("...Considering the generally high reliability of these dimensions, we expect similar effect sizes regardless of the number of scale items however. Any differences should be in the magnitude rather than direction of effects).

However, it is hard to predict whether similar unique circumstances afforded to this study during the first year of the COVID pandemic could emerge again. However, other work might bolster our findings which makes use of secondary sources of data, for example by analyzing social media posts from before, during, and after the pandemic. Other researchers have used such methods to understand sentiment in tweets over time (Valdez et al., 2020), and similar datasets or methods could potentially be used to identify whether the content of social media posts might reflect greater fear, authoritarianism, or other correlates of BDW and BCW.

Although we believe that the overall shift in dangerous worldviews could be associated with many kinds of uncertainty experienced throughout the study period (2020-2021; e.g., interest in firearm ownership increased during this period; Syropoulos et al., 2022), we cannot make claims as to which kinds of events contributed to these shifts, nor understand whether there was some specific event which was highly salient among respondents that influenced changes in their worldviews. However, our investigation can and does meaningfully contribute to theoretical arguments about the nature of worldviews, as we provide evidence that periods of uncertainty can indeed reinforce views of the world as dangerous. This premise, the malleability of worldviews, ultimately lends hope to the idea that worldviews can change. Considering their established predictive relationship of prejudicial attitudes, we contend that targeted interventions shaping how we construe the world, or even prolonged exposure to environments that nurture safety and cooperation, could prove beneficial in sustaining more prosocial construction of the world and ultimately even help reduce prejudice.

Conclusion

The Coronavirus pandemic was a time of great uncertainty, uprooting previous conventions of normality in people's lives. During the first year of the pandemic, we tracked people's perceptions of the world. We found that for nearly 50% of our sample the world appeared to be more dangerous or competitive than before. The changes for dangerous worldviews were especially prominent for those sensitive to threat (i.e., people who were older, white and politically conservative). Further, for both worldviews, these increases were more prominent for those who did not see the world as highly dangerous or competitive at T1. Since these worldviews are established antecedents of prejudice and intergroup hostility, it is important to understand how they shift over time and due to changes in the societal context. The current investigation adds to such efforts, by illustrating that during times of high uncertainty and disorder, these views of the world do in fact change, suggesting that worldviews are potentially more malleable than previously thought.

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Competing Interests: The authors have declared that no competing interests exist.

Data Availability: All research data supporting the findings of this study is publicly available at the OSF (Mah & Syropoulos, 2025S).

Supplementary Materials

The Supplementary Materials contain the following items:

- The full survey measures used in all four waves along with the code relevant to this study (Mah & Syropoulos, 2025S)
- Additional analyses and a detailed description of the relevant measures used in this study (Syropoulos et al., 2025S)

Index of Supplementary Materials

Mah, A. Y. J., & Syropoulos, S. (2025S). *Change in dangerous and competitive worldviews during the coronavirus epidemic: Evidence from a large-scale U.S. panel study* [Research data and code]. OSF. <https://osf.io/nd486>

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