RESEARCH ARTICLE

WILEY

The foundations of Bolsonaro's support: Exploring the psychological underpinnings of political polarization in Brazil

Alexandre Barros Franco[1] ⓘ | Nicholas Pound[2] ⓘ

[1]Division of Psychology, Department of Life Sciences, College of Health, Medicine & Life Sciences, Brunel University London, London, UK

[2]Centre for Culture & Evolution and Division of Psychology, Department of Life Sciences, College of Health, Medicine & Life Sciences, Brunel University London, London, UK

Correspondence

Nicholas Pound, Centre for Culture & Evolution and Division of Psychology, Department of Life Sciences, College of Health, Medicine & Life Sciences, Brunel University London, London, UK.
Email: nicholas.pound@brunel.ac.uk

Abstract

The election of the far-right populist Jair Bolsonaro in the 2018 Brazilian Presidential election was a major turning point in the history of the country and arguably part of a worldwide trend toward a form of 'authoritarian populism'. The present study was conducted to explore psychological factors that may contribute to the appeal of a polarizing figure such as Bolsonaro, in particular, to determine whether measures of various 'Moral Foundations' or 'Social Dominance Orientation' (SDO) could best predict voting behaviour in the 2018 election. Given the cultural and economic context in Brazil, measures of religiosity and personal relative deprivation were included as additional potential explanatory variables. An online survey of 325 people from Brazil found that Bolsonaro voters scored higher on the 'binding' (Loyalty, Authority, Purity/Sanctity) and lower on the 'individualizing' (Care, Fairness) Moral Foundations than voters for the candidate of the left, Fernando Haddad. Moreover, Bolsonaro voters scored higher than Haddad voters on SDO and religiosity. When the various social, moral and religious measures were considered simultaneously in a binary logistic regression, it was endorsement of right-wing authoritarian ideologies (SDO and the Authority Moral Foundation), rather than lack of endorsement of individualizing Moral Foundations that best distinguished Bolsonaro voters.

1 | INTRODUCTION

The election of the far-right populist Jair Bolsonaro in the 2018 Brazilian Presidential election was a major turning point in the history of the country – one which has been described as 'the most consequential … since the end of the military dictatorship in 1985 and the beginning of Brazil's "New Republic"' (Weizenmann, 2019, p. 12). Since the election, political scientists have debated the extent to which the outcome reflects a general trend towards increasing polarization in political discourse within the country (e.g., Gontijo & Ramos, 2019; Zimerman & Pinheiro, 2020). However, the psychological underpinnings of the recent upheaval in Brazil have yet to be explored in detail. Any process of political polarization (e.g., between people who identify as left-wing and right-wing) has, at its core, individuals who have found differing ideological viewpoints appealing. Consequently, understanding the psychological processes that lead individuals to coalesce around radically different viewpoints can help shed light on how particular ideologies and movements can gain traction within a population.

The election of Bolsonaro, and the continued polarization in Brazil, can be seen as part of a worldwide trend towards a form of 'authoritarian populism', also observed in other victories such as those of Erdogan in Turkey, Duda in Poland, Orban in Hungary and Trump in the United States (Schwarcz, 2019, pp. 226–227). According to Bringel (2016), recent polarization in Brazil was initially stimulated by a series of political mobilizations that began in June 2013 and led to the establishment, facilitated by use of digital media and cyberactivism (Cavalcanti, Bringel, Jardelino da Costa, Moura de Oliveira, & Zuccolotto, 2019), of various national pressure groups such as the Movimento Brasil Livre (Free Brazil Movement) and Vem Pra Rua (Come to the Street Movement).

The initial 2013 protests and subsequent mobilizations were driven by diffuse dissatisfactions and led to what Bringel and Pleyers (2019) have described as a 'social opening' in Brazil, where different actors (e.g., political groups, parties, politicians) emerged to stake their claims and gain support on both left and right. During the Presidential election campaign of the following year (2014), political polarization grew, partly exacerbated by regional divisions (Ferreira Do Vale, 2015). The incumbent Dilma Rousseff, of the traditional left-wing Partido dos Trabalhadores (PT), was elected by the narrowest margin on record for a Brazilian presidential election and was later impeached in 2016 in a highly contested process, which supporters saw as legal and proper, but opponents saw as essentially a parliamentary coup (Sosa, 2019). During this political crisis, conservative discourses were intensified (e.g., focussed on tradition, social order, family principles, religious values, etc.) and as Bolsonaro's campaign for election in 2018 gained momentum, regional and racial hostility and antagonism began to emerge (da Silva & Larkins, 2019).

Running as a candidate for the far-right Partido Social Liberal (PSL), Bolsonaro won the presidency with 55.1% of the votes cast in the second round. His defeated rival, Fernando Haddad of the left-wing Partido dos Trabalhadores (PT), won 44.9%. Bolsonaro's victory was aided by the recent allegations of corruption against Rousseff and the PT but also by a more general erosion of public trust in traditional parties and the tendency to blame them for economic and social crises (Solano, 2019) and dissatisfaction with the political situation coming from both sides of the political spectrum the left and the right (Gloria Filho & Modesto, 2019).

While political scientists and commentators have debated what factors may have contributed to polarization in Brazil, and the appeal of Bolsonaro specifically, various psychological perspectives can also have an important role in shedding light on the popularity of such a divisive figure. One approach, to understanding why people gravitate to particular ideological viewpoints, recently applied to the Brazilian context by Gloria Filho and Modesto (2019) is

based around the concept of Moral Foundations (Graham et al., 2011). According to Moral Foundations Theory, the various political and ideological groupings that emerge in different cultural contexts all draw on a more fundamental set of cross-culturally foundational beliefs about morality, and this theoretical framework has been used to understand liberal versus conservative affiliations and beliefs in the United States (e.g., Graham, Haidt, & Nosek, 2009; Rempala, Okdie, & Garvey, 2016). Developed following a review of cross-cultural research on what is considered 'virtuous', and of evolutionary approaches to morality, Moral Foundations theory (Graham et al., 2009; Haidt & Joseph, 2008) proposes that variation in people's differing moral and (consequently) political judgements are underpinned by a set of five 'moral foundations': beliefs in the importance of (a) Care (vs. Harm); (b) Fairness (vs. Cheating); (c) Loyalty (vs. Betrayal); (d) Authority (vs. Subversion) and (e) Purity/Sanctity (vs. Degradation).

The first two, Care and Fairness, are considered to be '*individualizing*' foundations, given their focus on protecting the welfare, rights and freedoms of individual people (Napier & Luguri, 2013). In contrast, the remaining three, Loyalty, Authority and Purity, are seen as '*binding*' foundations as they promote group cohesion, traditions and social institutions (Napier & Luguri, 2013), 'binding individuals into roles and duties in order to constrain their imperfect natures' (Graham et al., 2009, p. 1030). Across a range of countries, individuals who self-identify as 'liberal' show greater endorsement of the Care and Fairness foundations, while 'conservatives' tend to endorse all 5 foundations more equally (Graham et al., 2009). Moreover, endorsement of the different moral foundations has been shown to predict voting behaviour. In the 2012 United States Presidential election, individuals who voted for Mitt Romney, the conservative candidate, scored higher on the binding foundations and those who voted for Barack Obama, the liberal candidate, scored higher in the individualizing foundations (Franks & Scherr, 2015). Similarly, Harper and Hogue (2019) found that psychological factors including endorsement of the 'care' moral foundation predicted voting 'remain' in the UK's 2016 BREXIT referendum.

In Brazil, Gloria Filho and Modesto (2019) found that, as in the United States, individuals on the 'left' placed greater emphasis on the 'individualizing' foundations. However, evidence that individuals on the 'right' placed greater emphasis on the 'binding' foundations was equivocal. So it may be the moral foundations framework does not capture left-versus-right distinctions in the current Brazilian political climate as well as in other countries. An alternative perspective on the differences between liberals and conservatives in their endorsement of 'individualizing' and 'binding' moral foundations has been advanced by Kugler, Jost, and Noorbaloochi (2014). They suggest that what best distinguishes moral judgements made by liberals and conservatives is the latter group's higher levels of authoritarianism and 'social dominance orientation' (i.e., preferences for group-based hierarchies and inequality) and that these underlying factors explain greater conservative endorsement of the importance of ingroup loyalty, respect for authority and maintenance of purity.

Social Dominance Theory (Pratto, Sidanius, Stallworth, & Malle, 1994) was initially developed in order to understand the formation and maintenance of group-based social hierarchies (Pratto, Sidanius, & Levin, 2006) and how the psychological characteristics of individuals may interact with political systems and ideologies to generate and/or legitimize patterns of prejudice and discrimination. Social dominance orientation (SDO) itself was advanced as a dimension which captures the extent to which individuals desire or are predisposed to accept, group-based dominance and inequality (Pratto et al., 2006). Measured by the SDO scale (Pratto et al., 1994), SDO has been shown to predict political attitudes and beliefs associated with the preservation of hierarchies and social inequality. For example, SDO scores have been found to be associated with racism, sexism, nationalism and patriotism (Pratto et al., 2006). Specifically, high SDO scores have been found to be associated with opposition to social programmes, environmental programmes, gay rights, women's rights and policies to promote racial equality, while also being associated with support for military action (Pratto et al., 1994). Moreover, in recent years, SDO scores have been shown to predict attitudes towards issues that are polarizing contemporary societies, for example, support for Donald Trump in the US and pro-Brexit attitudes in the UK (Choma & Hanoch, 2017; Van Assche, Dhont, & Pettigrew, 2019). In Brazilian samples, SDO has been shown to predict conservative views (e.g., Jylhä, Cantal, Akrami, & Milfont, 2016) and prejudice against derogated groups, that is, those seen as subordinate but not threatening such as people who are unemployed or disabled (Cantal, Milfont, Wilson, & Gouveia, 2015). However, these

studies were completed before more dramatic political polarization associated with the 2016 Rousseff impeachment, and later 2018 Presidential election took place.

The present study was conducted primarily to examine which of these two perspectives (Moral Foundations or SDO) might better explain recent political polarization in Brazil. However, given the high levels of both religious commitment (Hackett, Kramer, Marshall, Shi, & Fahmy, 2018) and socioeconomic inequality (Victora, 2016) in Brazil, and Bolsonaro's campaign rhetoric related to these issues, we also considered the relative importance of individual religiosity and feeling deprived relative to others as predictors of voting behaviour. Numerous studies have explored the relationship between religious beliefs and political behaviour, with a positive association between religiosity and conservatism observed in the United States (e.g., Miller & Wattenberg, 1984; Olson & Green, 2006). Moreover, it has been suggested that religion is 'intertwined' with the binding moral foundations and consequently plays an important role in creating moral communities with shared values that emphasize these (Graham & Haidt, 2010). Accordingly, we assessed religiosity using the Duke University Religion Index (Koenig, Parkerson Jr., & Meador, 1997), a scale which assesses three dimensions of religiosity; engagement with organized communal religious activities (e.g., church attendance), engagement with private religious activities (e.g., prayer), and intrinsic or subjective religious beliefs (Koenig & Büssing, 2010).

Populist leaders may capitalize on, and exploit, a narrative of relative disadvantage to win support from certain groups. For example, a sense of feeling deprived relative to other 'less deserving' groups may have been an important factor in motivating support for Trump in the United States (Pettigrew, 2017), while Galvão (2018) has suggested that Bolsonaro capitalized on economic and social inequalities in Brazil to advance his electoral campaign. People tend to make judgements about their well-being based on how well-off they are compared to other people or groups – that is, whether they feel *relatively* deprived (e.g., Crosby, 1976; Smith, Pettigrew, Pippin, & Bialosiewicz, 2012). Consequently, increases in socioeconomic inequality have the potential to influence social behaviour, by creating a subjective sense of relative deprivation in some individuals and groups (Smith & Huo, 2014). A sense of belonging to a relatively deprived group was shown to predict voting for an extreme right-wing candidate in the 2012 French presidential election (Urbanska & Guimond, 2018) and also predicted support for Trump prior to the 2016 U.S. Presidential election (Marchlewska, Cichocka, Panayiotou, Castellanos, & Batayneh, 2018).

In theory, high levels of socioeconomic inequality in a society should lead to greater support for economic redistribution – as there would be a larger proportion of the population able to benefit from this (Brown-Iannuzzi, Lundberg, & McKee, 2017). There is evidence that feelings of relative deprivation can increase support for redistributive policies and the ideological principles that underpin them (Brown-Iannuzzi, Lundberg, Kay, & Payne, 2015). However, evidence on whether this phenomenon leads to changes in electoral outcomes is inconsistent (Brown-Iannuzzi et al., 2015), and a sense of personal relative deprivation (PRD) can be associated with less willingness to act for the benefit of others (Callan et al., 2017). For example, laboratory manipulations that induce a sense of personal deprivation relative to others can reduce prosocial behaviours (Zhang, Liu, & Tian, 2016). Accordingly, here we assessed PRD using the PRD scale (Callan, Shead, & Olson, 2011).

To summarize, the present study aimed to investigate psychological factors that might underpin the recent political polarization in Brazil. Specifically, we sought primarily to examine whether scores on measures of key Moral Foundations or SDO were the best predictors of having voted for the candidate of the right, Jair Bolsonaro in the highly divisive 2018 presidential election. Moreover, given the Brazilian socioeconomic and cultural context, and aspects of Bolsonaro's campaign rhetoric, we also included measures of religiosity and feelings of PRD as potential predictors. The specific hypotheses tested were that (H1) Bolsonaro voters would score higher than Haddad voters on each of the 'binding' Moral Foundations and (H2) lower than Haddad voters on each of the 'individualizing' Moral Foundations. Furthermore, it was predicted that Bolsonaro voters would score higher than Haddad voters on (H3) SDO and (H4) the Religiosity (DUREL) scales. In addition, the association between voting behaviour and PRD was to be explored. Although given past inconsistent findings in this area, no directional prediction was made.

2 | METHODS

2.1 | Participants

Participants were recruited using targeted online advertisements placed on Facebook groups popular with Brazilians discussing political issues. These stated that we were seeking participants for an online study investigating 'moral beliefs, social opinions, religious attitudes and aspects of economic wellbeing in Brazil'. In total, 325 people started the online survey (but see Section 2.4 below for exclusions). Mean age was 35.8 (±12.7) years, and 113 participants were male, 210 were female and 2 participants did not report a gender.

2.2 | Materials

2.2.1 | Demographic questions

Participants were asked their age, gender and household income ('Adding your income to the income of the people who live with you, how much is, approximately, your monthly family income?'). In accordance with the Brazilian Institute of Geography and Statistics (IBGE, 2012) social class classification system, household income response options were based on multiples of the minimum monthly wage at the time the research was conducted, that is, Class E (up to 2; < R\$1,908.00), D (2 to 4; R\$1,908.01 to R\$3,816.00), C (4 to 10; R\$3,816.01 to R\$9,540.00), B (10 to 20; R\$9,540.01 to R\$19,080.00) and A (>20; >R\$19,080.00) times the minimum wage.

2.2.2 | Voting history

Participants were asked which candidate they voted for in the Second Round of the 2018 Presidential Election with the response options being 'Candidate and current President Jair Bolsonaro', 'Candidate Fernando Haddad' and 'Abstention/None of the above'.

2.2.3 | Moral Foundations Questionnaire

Moral foundations were assessed using a Brazilian Portuguese translation (Silvino et al., 2016) of the 30-item Moral Foundations Questionnaire (Graham et al., 2011). In part 1 of the MFQ, participants were presented with 15 statements and asked to indicate the extent to which they consider each relevant to their thinking when they decide whether something is right or wrong. Responses were on 6-point scales from 0 = 'Not at all relevant' to 5 = 'Extremely relevant'. In part 2 of the scale participants were asked the extent to which they agree with a further 15 statements. Responses were on a 6-point scale from 0 = 'Strongly disagree' to 5 = 'Strongly agree'. Each section included an attention check item that is not scored giving 32 items in total. Scores on groups of 6 items were summed to calculate scores on 5 foundational dimensions; 1) Care (vs. Harm); 2) Fairness (vs. Cheating); 3) Loyalty (vs. Betrayal); 4) Authority (vs. Subversion) and 5) Purity/Sanctity (vs. Degradation).

2.2.4 | Social dominance orientation

Individual preferences for hierarchy within a social system were assessed using a Brazilian Portuguese translation (Fernandes, Da Costa, Camino, & Mendoza, 2007) of the 16-item Social Dominance Orientation (SDO-6) scale

(Pratto et al., 1994), which consists of statements either expressing support for hierarchies or for egalitarianism. Responses were on 7-point scales from 1 = 'Strongly disagree' to 7 = 'Strongly agree'. Responses to the statements expressing support for egalitarianism were reverse-coded, and overall SDO scale scores calculated as the mean of a participant's responses to the 16 items.

2.2.5 | Religiosity

Religiosity was assessed using a Brazilian Portuguese translation (Moreira-Almeida, Peres, Aloe, Neto, & Koenig, 2008) of the Duke University Religion (DUREL) Index (Koenig & Büssing, 2010), a 5-item scale that measures 3 dimensions of religiosity. 'Organizational Religious Activity' (ORA) is assessed through a single question about frequency of attendance at religious services with responses on a 6-point scale from 1 = 'Never' to 6 = 'More than once a week'. 'Non-Organizational Religious Activity' (NORA) is assessed through a single question about frequency of private religious activities with responses on 6-point scales from 1 = 'Rarely or Never' to 6 = 'More than once a day'. 'Intrinsic Religiosity' (IR) is assessed as the sum of responses to 3 questions about participants' religious beliefs and experiences, with responses on 5-point scales from 1 = 'Not true' to 5 = 'Totally true for me'. Koenig and Büssing (2010) recommend that the 3 subscales should not be summed to create an overall religiosity score, nor should the 3 subscales be included as predictors in a single statistical model due to multicollinearity.

2.2.6 | Personal relative deprivation

The extent to which individuals feel deprived relative to others was assessed using the PRD scale (Callan et al., 2011). This self-report measure consists of 5 items that assess how 'deprived', 'privileged', 'resentful' and 'dissatisfied' an individual feels about what they have compared to 'people like me'. As no published translation existed, a Brazilian Portuguese translation was produced by the first author (Table S1). Responses were on 6-point scales, from 1 = 'Strongly disagree' to 6 = 'Strongly agree'. Responses to items 2 and 4 were reverse coded and overall PRD scale scores calculated as the mean of a participant's responses to the 5 items.

2.2.7 | Scale reliabilities

In the present study, internal consistency was very good for the SDO (α = .87) and DUREL Intrinsic Religiosity scales (α = .92), good for the PRD scale (α = .65) and the Authority (α = .76) and Purity (α = .78) domains of the MFQ. As is commonly found (Zhang, Hook, & Johnson, 2016), internal consistency was not as high for some other MFQ domains, Care (α = .58), Fairness (α = .56) and Loyalty (α = .53). The DUREL Organizational and Non-Organizational Religious Activity measures are each single Likert items, so internal consistency measures are not applicable.

2.3 | Procedure

The study was approved by the Brunel University London College of Health & Life Sciences Research Ethics Committee and data collection took place between June 26 and August 8, 2019. After reviewing an information sheet and completing a consent form, participants were asked to complete the demographic and voting history questions. Following this, participants completed the PRD, SDO, MFQ and DUREL with the order counterbalanced through randomization. After completing the questionnaire, participants were debriefed with information regarding the aims of the research.

2.4 | Data analysis

Although 325 participants started the study and reported a voting history, missing responses meant full scale scores could only be computed for 292 participants for the PRD, 290 for the DUREL and 282 for the SDO scales. For the MFQ, 273 completed all items, but of these 53 failed at least one attention check, so MFQ scores were calculated for 220 participants, leaving 209 participants with complete data for all scales. To maintain statistical power, for bivariate correlations and pairwise comparisons between voter groups, pairwise deletion was used with participants only excluded from analyses for which they have missing data. For participants with complete scale data ($n = 209$), a binary logistic regression was conducted to examine which predictors best distinguished between Bolsonaro and Haddad voters. To check the robustness of our results the regression analysis was repeated excluding only the five participants who failed both MFQ attention check items (leaving $n = 254$ with complete scale data) and this analysis is reported in Table S7. Analyses were performed using IBM SPSS 26.0.

3 | RESULTS

3.1 | Demographic differences between voting groups

Reported voting in the 2018 Brazilian Presidential election was 93 (28.6%) for Bolsonaro, 164 (50.5%) for Haddad and 68 (20.9%) Abstention/None of the above. Our sample contained a greater proportion of Haddad voters than was seen in the second round of the 2018 election itself, where the actual distribution across registered voters was Bolsonaro (39.2%), Haddad (31.9%) and Abstention/None of the above (29.8%). Analysis of variance showed that there were differences in mean age between the three voting groups $F(2,322) = 16.23$, $p < .001$, $\eta^2 = .092$. Post-hoc analyses (Tukey's HSD) indicated that mean age was higher for Bolsonaro voters than both Haddad and Abstention/None of the above (both $p < .001$) voters. But age did not differ significantly between these latter two groups ($p = .45$).

The gender breakdown for the 323 participants who reported a gender and voting history is shown in Table S2. The voting distribution was not equivalent across genders ($\chi^2 = 7.02$, $df = 2$, $p = .030$), due to more frequent female abstentions. For participants who voted for a candidate, there was no significant gender difference ($\chi^2 = 0.10$, $df = 1$, $p = .75$) with 37.4% of males and 35.4% of females reporting voting for Bolsonaro. Voting patterns across household income categories are shown in Table S3, and the income distributions did not differ significantly between voting groups ($\chi^2 = 14.2$, $df = 8$, $p = .076$).

3.2 | Relationships between social, moral and religious measures

Descriptive statistics for all scales are shown in Table S4. Pearson correlation coefficients were calculated to examine associations between age, PRD, SDO, MFQ and DUREL measures (Table S5). For the ordinal DUREL Organizational and Non-Organizational Religious Activity measures, Spearman's Rank Correlation Coefficients were calculated to investigate associations with other variables. In addition to inter-correlations among MFQ measures, SDO was positively associated with the 'binding' moral foundations (all $r > .223$, $n = 215$, $p < .001$) and negatively associated with the 'individualizing' foundations (all $r < -.412$, $n = 215$, $p < .001$). The 'binding foundations' were also all positively associated with Intrinsic Religiosity (all $r > .364$, $n = 216$, $p < .001$) and involvement in religious activities (all Spearman's $r > .212$, $n = 216$, $p < .01$). However, PRD was not associated with any of the other social, moral and religious measures aside from MFQ Care ($r = -.173$, $n = 211$, $p = .012$).
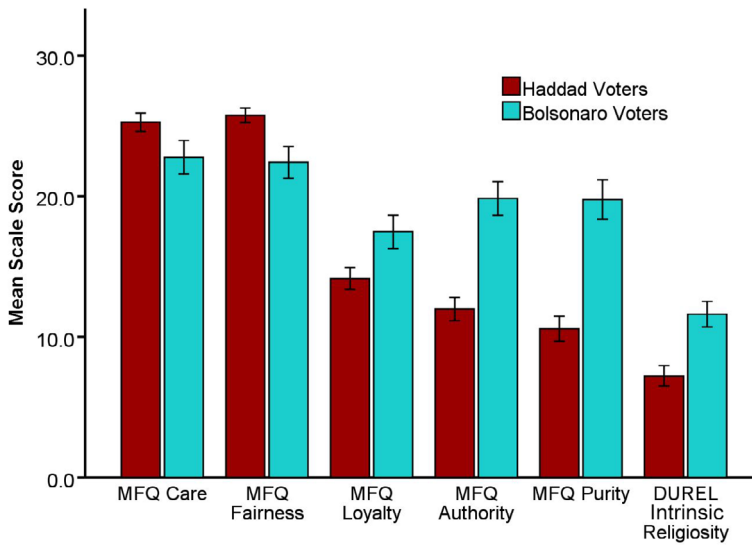
FIGURE 1 Voter group mean (±95% CI) Moral Foundations Questionnaire (MFQ) and Duke University Religion Index (DUREL) measures
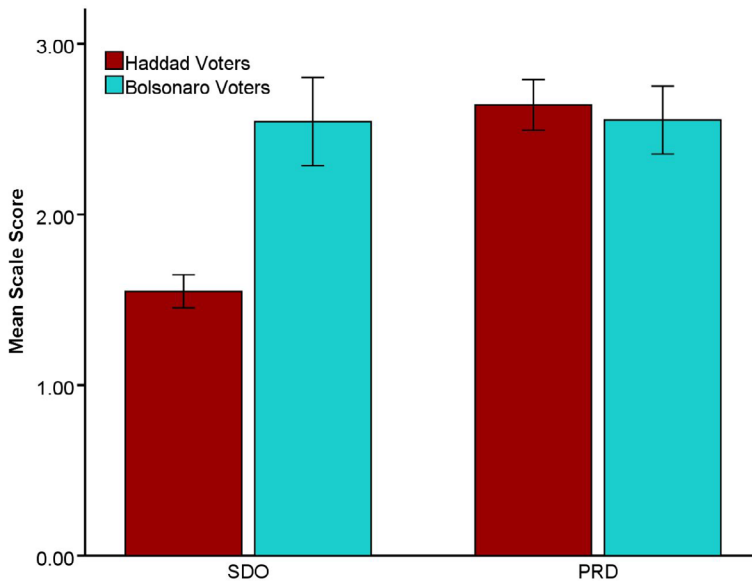

FIGURE 2 Voter group mean (±95% CI) Social Dominance Orientation (SDO) and Personal Relative Deprivation (PRD) scale scores

3.3 | Differences between voting groups on social, moral and religious measures

As shown in Figures 1 and 2, Bolsonaro and Haddad voters differed in the predicted ways. Pairwise independent t-tests comparing scores for Bolsonaro and Haddad voters (Table S6) showed that as predicted (H1), Bolsonaro voters scored higher than Haddad voters in each of the binding Moral Foundations (Loyalty, Authority, Purity/Sanctity), all t

TABLE 1 Results of binary logistic regression with voting group (0 = Haddad; 1 = Bolsonaro) as the dependent variable and gender (0 = Female; 1 = Male), age, PRD, SDO, MFQ dimensions and DUREL Intrinsic Religiosity as predictors (n = 166)

	B	SE	Wald	p	OR	95% CI
Gender	−0.252	0.589	0.183	.669	0.78	0.25–2.46
Age	0.014	0.023	0.354	.552	1.01	0.97–1.06
PRD	−0.151	0.319	0.224	.636	0.86	0.46–1.61
SDO	1.130	0.513	4.846	.028	3.09	1.13–8.46
MFQ care	−0.186	0.094	3.880	.049	0.83	0.69–1.00
MFQ fairness	0.062	0.104	0.359	.549	1.06	0.87–1.31
MFQ loyalty	−0.055	0.080	0.463	.496	0.95	0.81–1.11
MFQ authority	0.246	0.095	6.733	.009	1.28	1.06–1.54
MFQ purity	0.135	0.075	3.228	.072	1.14	0.99–1.33
DUREL intrinsic religiosity	0.062	0.089	0.490	.484	1.06	0.89–1.27

(174) > 4.94, p < .001 and (H2) Haddad voters scored higher than Bolsonaro voters on each of the individualizing Moral Foundations (Care and Fairness), all t(174) > 4.00, p < .001. Moreover, also as predicted, Bolsonaro voters scored higher than Haddad voters on SDO (H3) t(220) = 8.47, p < .001 and Intrinsic Religiosity (H4), t(227) = 8.06, p < .001. Mann–Whitney U tests indicated that Organizational Religious Activity scores were higher (U = 3,596.5, p < .001, Z = −5.18) for Bolsonaro voters (Median = 3.5) than for Haddad voters (Median = 2.0). Similarly, Non-Organizational Religious Activity scores were also higher (U = 3,543.0, p < .001, Z = − 5.40) for Bolsonaro (Median = 4.5) voters than for Haddad (1.0) voters.

3.3.1 | Distinguishing between voting groups

Binary logistic regression analysis was conducted to establish which social, moral and religious measures best predicted voting for Bolsonaro rather than Haddad (for the 166 participants with complete data, no failed attention check items and who reported voting for one of these candidates). Gender and age were included as predictors along with PRD, SDO, MFQ and DUREL Intrinsic Religiosity scale scores. Although predictor variables were correlated, standard assumptions regarding multicolinearity were not violated (all VIF < 3.5). The model (Table 1) was significant Nagelkerke R^2 = 0.68, χ^2 = 111.69, df = 10, p < .001 and able to successfully classify 86.7% of participants as either Bolsonaro or Haddad voters (Hosmer–Lemeshow χ^2 = 17.91, df = 8, p < .001). Neither gender nor age predicted voting history but higher scores on the SDO and MFQ Authority measures were both associated with a greater probability of having voted for Bolsonaro. In contrast, higher MFQ Care scores were associated with a greater probability of having voted for Haddad, although this effect only just reached significance. None of the other measures of social, moral or religious attitudes was significant predictors of voting history. As shown in Table S7, repeating the analysis excluding only participants who failed both MFQ attention check items yielded similar results.

4 | DISCUSSION

As predicted, participants who reported having voted for Bolsonaro in the 2018 Brazilian Presidential election scored higher than Haddad voters on each of the binding Moral Foundations (Loyalty, Authority and Purity/Sanctity). In

contrast, Haddad voters scored higher than Bolsonaro voters on each of the individualizing Moral Foundations (Care and Fairness). Moreover, also as predicted, Bolsonaro voters scored higher than Haddad voters on SDO, Intrinsic Religiosity, Organizational and Non-Organized Religious Activity. However, the voter groups did not differ in their sense of PRD.

When the various social, moral and religious measures were considered simultaneously in a binary logistic regression, along with demographic variables, it was SDO and scores on the Authority and Care Moral Foundations that best distinguished between Bolsonaro and Haddad voters. However, the predictive power was greatest for SDO and endorsement of the Authority Moral Foundation with Bolsonaro voters scoring higher on both these dimensions linked to authoritarianism. Endorsement of the 'Authority' Moral Foundation implies belief in the virtues of leadership and followership and the importance of obedience and deference to authority as a matter of duty (Haidt & Joseph, 2008). Similarly, SDO assesses the extent to which individuals desire or are predisposed to accept, group-based dominance and inequality (Pratto et al., 2006). Consequently, while Bolsonaro and Haddad voters differed in the various ways predicted, it was endorsement of dimensions associated with right-wing authoritarianism (RWA), rather than lack of endorsement of individualizing Moral Foundations that best distinguished Bolsonaro voters.

One limitation of the present study is that we did not measure RWA directly, for example, using the RWA scale (Altemeyer, 1988). However, this was partly because the RWA scale focuses on a number of explicitly stated policies, and accordingly some have suggested that it measures 'expressed' authoritarianism rather than authoritarian predispositions (Stenner, 2005). Our focus was on examining more fundamental dimensions that may underpin RWA (e.g., the Moral Foundations and SDO), and it is known that the Authority sub-scale of the MFQ correlates particularly well with RWA scores (e.g., Graham et al., 2011). Moreover, these strong correlations and conceptual overlap between RWA and the binding foundations have led some to question the value of the 5 moral foundations as distinct psychological constructs when trying to account for political and ideological differences between individuals.

As noted earlier, across a range of countries 'liberals' tend to show greater endorsement of the 'individualizing' moral foundations, while 'conservatives' tend to endorse the 'individualizing' and 'binding' foundations more equally (Federico, Weber, Ergun, & Hunt, 2013; Graham et al., 2009). However, it has been suggested that Moral Foundations Theory may simply 'repackage' some well-established core constructs (e.g., Sinn & Hayes, 2017) and that political beliefs and values may be captured more effectively by two, perhaps more fundamental dimensions. One dimension reflecting general preferences for equality versus inequality in the social world, and the other reflecting general openness to change and novelty versus preferences for order, conformity and tradition (Federico et al., 2013). Indeed, Milojev et al. (2014) have argued that SDO and RWA effectively capture, and correspond to, these two dimensions that are fundamental to intergroup relations. However, Yilmaz and Saribay (2019) have reported evidence from Turkey and the United States, suggesting that the Moral Foundations do not simply 'repackage' a smaller number of more core constructs, and that scores on different moral foundations could explain additional variance in political orientation.

The higher SDO scores seen for Bolsonaro voters are not surprising given his campaign rhetoric. For example, in a 2017 speech, Bolsonaro pronounced that if he became president, 'not one centimetre of land will be demarcated for indigenous reserves or quilombolas (descendants of runaway slaves)' and later affirmed that these lands could be opened to economic exploitation, such as agribusiness and mining (Mendes & Pontes, 2018). In addition, Bolsonaro previously denigrated a range of other 'out-groups' including women, Afro-Brazilians, LGBT groups and in an interview referred to Syrian refugees as 'scum of the earth' (Duque & Smith, 2019). Such statements should appeal to individuals who possess a desire central to SDO – that is, 'that one's in-group dominate and be superior to out-groups' (Pratto et al., 1994, p. 742). Similar appeals have arguably formed part of recent populist political campaigns in other countries. For example, high SDO scores predict support for Donald Trump in the United States and support for pro-Brexit attitudes and the UK Independence Party in the United Kingdom (Van Assche et al., 2019). In both contexts, anti-immigrant rhetoric has been used to mobilize support for policies that emphasize the right of an 'in-group' to dominate and be superior to denigrated outgroups.

Other aspects of Bolsonaro's campaign rhetoric positioned him as a candidate who would appeal to people who strongly endorse the Authority Moral Foundation. For example, throughout his political career, Bolsonaro has presented himself as a supporter of the military dictatorship that ruled Brazil from 1964 to 1985, frequently emphasizing respect for authority and social order as important values of that period (Nascimento, Alecrim, Oliveira, Oliveira, & Costa, 2018). In line with this, his government supports militarization of public schools, ostensibly to improve student's education through discipline (Reis, Alves, Santos, Silva, & Ferreira, 2019).

Although it was scores on dimensions that underpin RWA that best distinguished Bolsonaro from Haddad voters, Bolsonaro voters did also score higher on the measures of religiosity. This is consistent with da Costa's (2020) claim that Bolsonaro's victory depended on the support of religious groups and with a pre-election survey carried out by the Datafolha Instituto de Pesquisas (2018), which found that 66% of the Evangelical Christians in the country intended to 'definitely' vote for Bolsonaro and 26% for Haddad (although Catholics were more evenly split in their intentions; 42% intended to 'definitely' vote for Bolsonaro and 41% for Haddad).

Bolsonaro and Haddad voters did not differ in their sense of PRD. This is inconsistent with previous findings that a sense of relative deprivation tends to be associated with voting for extreme right-wing (Urbanska & Guimond, 2018) or right-wing populist electoral candidates (Marchlewska et al., 2018). However, both those studies assessed 'group relative deprivation', that is, the extent to which an individual believes that the group to which they belong is deprived relative to other groups (Smith et al., 2012) rather than 'personal relative deprivation'. It may be that the former is a more important driver of voting behaviour. The PRD scale asks people to compare their situation to 'other people like me', comparisons which may be of limited relevance when a candidate such as Bolsonaro is running a campaign persuading his target voters that they have been disadvantaged relative to out-groups (e.g., refugees or indigenous people). The extent to which an individual believes that their group is deprived relative to other groups has more obvious potential to influence views on issues such as immigration that were central to Bolsonaro's campaign. Consequently, this study could have been strengthened through the inclusion of a measure of 'group relative deprivation', similar to the one used by (Urbanska & Guimond, 2018).

This study's findings must be considered in light of the self-selected nature of the sample – that is, people responding to online requests for participants, who reported higher than average levels of education, family income and mostly located in the South-Central regions. Consequently, the generalizability of the findings to less affluent populations and those who are less engaged with online communities may be limited. However, it should be noted that use of digital media and 'cyberactivism' were major features of the political upheaval prior to the 2018 Presidential Election in Brazil (Cavalcanti et al., 2019) so online recruitment offers the potential to reach participants with strong feelings on either side of the polarized debates.

Our sample contained a smaller proportion of self-reported Bolsonaro voters (28.6%) than would be expected if it had been randomly drawn from the population of registered voters for the 2018 presidential election (39.2%). This may reflect our sample being not entirely representative of the population or alternatively inaccurate/biased recollections on the part of participants. However, it should be noted that data collection took place in 2019 only 8 months after Bolsonaro's election victory and only 6 months after he took office.

This research has highlighted the extent to which individual differences in SDO, and the importance attached to certain fundamental Moral Foundations, may have contributed to recent political polarization in Brazil. When various social, moral and religious measures were considered simultaneously, it was SDO and scores on the Authority and Care Moral Foundations that distinguished between Bolsonaro and Haddad voters. This finding suggests commonalities between recent political developments in Brazil and events in other parts of the world where SDO scores and authoritarian beliefs have also been shown to predict support for polarizing candidates, such as Trump, and divisive policies such as Brexit (Choma & Hanoch, 2017; Van Assche et al., 2019).

ETHICS STATEMENT

The study was approved by the Brunel University London, College of Health & Life Sciences Research Ethics Committee.

ORCID

Alexandre Barros Franco 🔟 https://orcid.org/0000-0001-8098-0077
Nicholas Pound 🔟 https://orcid.org/0000-0003-2170-9943

REFERENCES

Altemeyer, B. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco, CA: Jossey-Bass.

Bringel. B. (2016, February 18). 2013-2016: Polarization and protests in Brazil. Open Democracy/ISA RC-47: Open Movements. Retrieved from https://opendemocracy.net/democraciaabierta/breno-bringel/2013-2016-polarization-and-protests-in-brazil

Bringel, B., & Pleyers, G. (2019). June 2013, five years later: Polarization, reconfiguration of activism, and challenges for the Brazilian left. In V. Puzone & L. Miguel (Eds.), *The Brazilian left in the 21st century: Conflict and conciliation in peripheral capitalism* (pp. 237–257). Cham, Switzerland: Palgrave Macmillan.

Brown-Iannuzzi, J. L., Lundberg, K. B., Kay, A. C., & Payne, B. K. (2015). Subjective status shapes political preferences. *Psychological Science*, *26*(1), 15–26.

Brown-Iannuzzi, J. L., Lundberg, K. B., & McKee, S. (2017). Political action in the age of high-economic inequality: A multi-level approach. *Social Issues and Policy Review*, *11*(1), 232–273.

Callan, M. J., Kim, H., Gheorghiu, A. I., & Matthews, W. J. (2017). The interrelations between social class, personal relative deprivation, and prosociality. *Social Psychological and Personality Science*, *8*(6), 660–669.

Callan, M. J., Shead, N. W., & Olson, J. M. (2011). Personal relative deprivation, delay discounting, and gambling. *Journal of Personality and Social Psychology*, *101*(5), 955–973.

Cantal, C., Milfont, T. L., Wilson, M. S., & Gouveia, V. V. (2015). Differential effects of right-wing authoritarianism and social dominance orientation on dimensions of generalized prejudice in Brazil. *European Journal of Personality*, *29*(1), 17–27.

Cavalcanti, D. B., Bringel, E. P. B., Jardelino da Costa, F. R., Moura de Oliveira, T., & Zuccolotto, V. R. (2019). Digital activism and indignation nets in Brazil: The pressure groups. *Journal of Politics in Latin America*, *11*(1), 109–130.

Choma, B. L., & Hanoch, Y. (2017). Cognitive ability and authoritarianism: Understanding support for trump and Clinton. *Personality and Individual Differences*, *106*, 287–291.

Crosby, F. (1976). A model of egoistical relative deprivation. *Psychological Review*, *83*(2), 85–113.

da Costa, G. G. (2020, February 3). *Religion, politics and the election of Jair Bolsonaro in Brazil: Some preliminary remarks*. L'Observatoire des Religions et de la Laïcité. Retrieved from http://www.o-re-la.org/index.php/analyses/item/3093-religion-politics-and-the-election-of-jair-bolsonaro-in-brazil-some-preliminary-remarks

da Silva, A. J. B., & Larkins, E. R. (2019). The Bolsonaro election, antiblackness, and changing race relations in Brazil. *The Journal of Latin American and Caribbean Anthropology*, *24*(4), 893–913.

Datafolha Instituto de Pesquisas (2018, October 26). Brasil: Intenção de voto para presidente da República – 2° turno -25/10. Retrieved from https://datafolha.folha.uol.com.br/eleicoes/2018/10/1983704-pela-presidencia-bolsonaro-tem-56-dos-validos-contra-44-de-haddad.shtml

Duque, D., & Smith, A. (2019). The establishment upside down: A year of change in Brazil. *Revista De Ciencia Política (Santiago)*, *39*(2), 165–189.

Federico, C. M., Weber, C. R., Ergun, D., & Hunt, C. (2013). Mapping the connections between politics and morality: The multiple sociopolitical orientations involved in moral intuition. *Political Psychology*, *34*(4), 589–610.

Fernandes, S., Da Costa, J., Camino, L., & Mendoza, R. (2007). Valores psicossociais e orientação à dominância social: Um estudo acerca do preconceito. *Psicologia: Reflexão e Crítica*, *20*(3), 490–498.

Ferreira Do Vale, H. (2015). Territorial polarization in Brazil's 2014 Presidential elections. *Regional & Federal Studies*, *25*(3), 297–311.

Franks, A. S., & Scherr, K. C. (2015). Using moral foundations to predict voting behavior: Regression models from the 2012 U.S. Presidential election. *Analyses of Social Issues and Public Policy*, *15*(1), 213–232.

Galvão, L. A. (2018, October 22). *Inequality: A feature and driver of Bolsonaro's rise in Brazil*. Inequality.org. Retrieved from https://inequality.org/research/inequality-feature-driver-bolsonaro-brazil/

Gloria Filho, M., & Modesto, J. G. (2019). Morality, activism and radicalism in the Brazilian left and the Brazilian right. *Trends in Psychology*, *27*(3), 763–777.

Gontijo, C., & Ramos, L. (2019). Caesarism, populism, and the 2018 election in Brazil. *Capital & Class*, *44*(4), 617–632.

Graham, J., & Haidt, J. (2010). Beyond beliefs: Religions bind individuals into moral communities. *Personality and Social Psychology Review*, *14*(1), 140–150.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, *96*(5), 1029–1046.

Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology*, *101*(2), 366–385.

Hackett, C., Kramer, S., Marshall, J., Shi, A. F., & Fahmy, D. (2018). *The age gap in religion around the world*. Washington, DC: Pew Research Center.

Haidt, J., & Joseph, C. (2008). The moral mind: How five sets of innate intuitions guide the development of many culture-specific virtues, and perhaps even modules. In P. Carruthers, S. Laurence, & S. Stich (Eds.), *Evolution and cognition. The innate mind Vol. 3. Foundations and the future* (pp. 367–391). New York, NY: Oxford University Press.

Harper, C. A., & Hogue, T. E. (2019). The role of intuitive moral foundations in Britain's vote on EU membership. *Journal of Community and Applied Social Psychology*, *29*, 90–103.

Instituto Brasileiro de Geografia e Estatística. (2012). *Censo Demográfico 2010 - Características gerais da população, religião e pessoas com deficiência*. Rio de Janeiro, Brazil: Instituto Brasileiro de Geografia e Estatística.

Jylhä, K. M., Cantal, C., Akrami, N., & Milfont, T. L. (2016). Denial of anthropogenic climate change: Social dominance orientation helps explain the conservative male effect in Brazil and Sweden. *Personality and Individual Differences*, *98*, 184–187.

Koenig, H., Parkerson, G. R., Jr., & Meador, K. G. (1997). Religion index for psychiatric research. *American Journal of Psychiatry*, *154*(6), 885–886.

Koenig, H. G., & Büssing, A. (2010). The Duke University Religion Index (DUREL): A five-item measure for use in epidemological studies. *Religions*, *1*(1), 78–85.

Kugler, M., Jost, J. T., & Noorbaloochi, S. (2014). Another look at moral foundations theory: Do authoritarianism and social dominance orientation explain liberal-conservative differences in "moral" intuitions? *Social Justice Research*, *27*(4), 413–431.

Marchlewska, M., Cichocka, A., Panayiotou, O., Castellanos, K., & Batayneh, J. (2018). Populism as identity politics: Perceived in-group disadvantage, collective narcissism, and support for populism. *Social Psychological and Personality Science*, *9*(2), 151–162.

Mendes, K., & Pontes, N. (2018, October 26). *Indigenous land, culture at stake in Brazil election - experts*. Reuters. Retrieved from https://www.reuters.com/article/us-brazil-election-landrights-deforestat-idUSKCN1N0241

Miller, A. H., & Wattenberg, M. P. (1984). Politics from the pulpit: Religiosity and the 1980 elections. *Public Opinion Quarterly*, *48*(1), 301–317.

Milojev, P., Osborne, D., Greaves, L. M., Bulbulia, J., Wilson, M. S., Davies, C. L., … Sibley, C. G. (2014). Right-wing authoritarianism and social dominance orientation predict different moral signatures. *Social Justice Research*, *27*(2), 149–174.

Moreira-Almeida, A., Peres, M. F., Aloe, F., Neto, F. L., & Koenig, H. G. (2008). Versão em português da Escala de Religiosidade da Duke: DUREL. *Archives of Clinical Psychiatry (São Paulo)*, *35*(1), 31–32.

Napier, J. L., & Luguri, J. B. (2013). Moral mind-sets: Abstract thinking increases a preference for "individualizing" over "binding" moral foundations. *Social Psychological and Personality Science*, *4*(6), 754–759.

Nascimento, L., Alecrim, M., Oliveira, J., Oliveira, M., & Costa, S. (2018). "Não falo o que o povo quer, sou o que o povo quer": 30 anos (1987-2017) de pautas políticas de Jair Bolsonaro nos jornais brasileiros. *Plural*, *25*(1), 135–171.

Olson, L. R., & Green, J. C. (2006). The religion gap. *PS: Political Science and Politics*, *39*(3), 455–459.

Pettigrew, T. F. (2017). Social psychological perspectives on Trump supporters. *Journal of Social and Political Psychology*, *5*(1), 107–116.

Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology*, *17*(1), 271–320.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741–763.

Reis, L., Alves, M., Santos, E., Silva, F., & Ferreira, N. (2019). Militarização de Escolas Públicas e o Governo Bolsonaro. *Tecnia*, *4*(2), 227–235.

Rempala, D. M., Okdie, B. M., & Garvey, K. J. (2016). Articulating ideology: How liberals and conservatives justify political affiliations using morality-based explanations. *Motivation and Emotion*, *40*(5), 703–719.

Schwarcz, L. M. (2019). *Sobre o Autoritarismo Brasileiro*. São Paulo, Brazil: Companhia das Letras.

Silvino, A. M. D., Pilati, R., Keller, V. N., Silva, E. P., Freitas, A. F. D. P., Silva, J. N., & Lima, M. F. (2016). Adaptation of the Moral Foundations Questionnaire to Brazilian Portuguese. *Psico-USF*, *21*(3), 487–495.

Sinn, J. S., & Hayes, M. W. (2017). Replacing the moral foundations: An evolutionary-coalitional theory of liberal-conservative differences. *Political Psychology*, *38*, 1043–1064.

Smith, H. J., & Huo, Y. J. (2014). Relative deprivation: How subjective experiences of inequality influence social behavior and health. *Policy Insights from the Behavioral and Brain Sciences*, *1*(1), 231–238.

Smith, H. J., Pettigrew, T. F., Pippin, G. M., & Bialosiewicz, S. (2012). Relative deprivation: A theoretical and meta-analytic review. *Personality and Social Psychology Review*, *16*(3), 203–232.

Solano, E. (2019). A bolsonarização do Brasil. In S. Abranches, R. Almeida, A. Alonso, C. R. Barros, M. Bolle, P. Domingues, ... G. Venturi. (Eds.), *Democracia em risco? 22 ensaios sobre o Brasil hoje* (pp. 307–322). São Paulo, Brazil: Companhia das Letras.

Sosa, J. J. (2019). Subversive, mother, Killjoy: Sexism against Dilma Youssef and the social imaginary of Brazil's rightward turn. *Signs*, *44*(3), 717–741.

Stenner, K. (2005). *The authoritarian dynamic*. Cambridge, England: Cambridge University Press.

Urbanska, K., & Guimond, S. (2018). Swaying to the extreme: Group relative deprivation predicts voting for an extreme right Party in the French Presidential election. *International Review of Social Psychology*, *31*(1), 26.

Van Assche, J., Dhont, K., & Pettigrew, T. F. (2019). The social-psychological bases of far-right support in Europe and the United States. *Journal of Community and Applied Social Psychology*, *29*(5), 385–401.

Victora, C. (2016). Socioeconomic inequalities in health: Reflections on the academic production from Brazil. *International Journal for Equity in Health*, *15*(1), 164.

Weizenmann, P. P. (2019). "Tropical Trump"? Bolsonaro's threat to Brazilian democracy. *Harvard International Review*, *40*(1), 12–14.

Yilmaz, O., & Saribay, S. A. (2019). Moral foundations explain unique variance in political ideology beyond resistance to change and opposition to equality. *Group Processes & Intergroup Relations*, *22*(8), 1124–1138.

Zhang, H., Hook, J. N., & Johnson, K. A. (2016). Moral Foundations Questionnaire. In V. Zeigler-Hill & T. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. Cham, Switzerland: Springer.

Zhang, H., Liu, M., & Tian, Y. (2016). Individual-based relative deprivation (IRD) decreases prosocial behaviors. *Motivation and Emotion*, *40*(5), 655–666.

Zimerman, A., & Pinheiro, F. (2020). Appearances can be deceptive: Political polarization, agrarian policy, and coalitional presidentialism in Brazil. *Politics and Policy*, *48*(2), 339–371.

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.