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The role of intuitive moral foundations in Britain's Brexit vote

Craig A. Harper*

Nottingham Trent University (UK)

Todd E. Hogue

University of Lincoln (UK)

Author Contact Details (*corresponding author)

Craig Harper

Department of Psychology, Nottingham Trent University, 50 Shakespeare Street,
Nottingham, NG1 4FQ, UK. Tel.: +44 (0)115 848 4718

Email: craigaharper19@gmail.com

Todd Hogue

College of Social Sciences, University of Lincoln, Brayford Pool, Lincoln, LN6 7TS, UK.

Tel.: +44(0)1522 837391

Email: thogue@lincoln.ac.uk

Abstract

In June 2016, British voters took part in a referendum on the UK's membership of the EU. By a margin of 52%:48%, they voted to leave. Until now, polling data has consistently demonstrated that fixed demographic factors were the best predictors of voting intentions in either direction, but we investigated the role of moral intuitions. Before adding psychological variables, older age, being male, and lower educational attainment predicted the Brexit vote. After adding psychological variables, though, these were non-significant predictors of the vote. Instead, Brexit voting was predicted by political conservatism, ontological insecurities, and an adherence to the liberty foundation of morality. In contrast, only an adherence to the care foundation of morality was significantly predictive of a vote to remain in the EU. These findings were also reflected in linguistic analyses of campaign materials and news items. Our data question some common-sense commentaries of the EU referendum campaign.

Keywords: Brexit, polling, moral foundations theory, LIWC, voting

The role of intuitive moral foundations in Britain's Brexit vote

On 23rd June 2016, The United Kingdom (UK) held a national referendum on its membership of the European Union (EU). By a margin of 52% to 48% (Electoral Commission, 2016), the resulting vote led to the triggering of Article 50 of the Lisbon Treaty in March 2017, indicating the UK's formal intention to withdraw from its political bond with the rest of Europe. In this paper, we present two studies examining the referendum result with reference to the role of moral intuitions in voting choices.

Moral intuition and political preferences

From Plato's early claims that reason (or mastery over what he termed 'the passions') is the highest form of intellect, through to David Hume's argument that reason is a 'slave to the passions', philosophers have long debated the relative roles of rationality and intuition in moral and political decision-making. Early evidence for the importance of intuition came from the work of Damasio (1994), who found that patients with neurological lesions to areas of the brain responsible for emotional processing became unable to make effective moral decisions. Research of this type led Haidt (2001) to formulate the social-intuitionist model of moral reasoning. Using this framework, Haidt made the argument that intuitive processes lead to explicit rationalisations of moral decisions. That is, automatic emotional cognition makes moral decisions, and our verbal reasoning is used in order to justify these to onlookers.

Moral foundations theory (MFT; Haidt & Joseph, 2004) offers one theoretical approach to understanding which moral intuitions people make use of to make decisions within the political domain. MFT was formulated by considering data from cultural and evolutionary psychology, and views human morality as a multi-dimensional construct (Haidt, 2012). There are three key principles underpinning MFT: (1) implicit moral judgements precede rational

decision-making; (2) morality is a multi-dimensional construct; and (3) the relative importance attributed to respective moral dimensions is variable across the population.

In relation to the first principle (intuitive processes precede rational judgements), Haidt (2001, 2012) built on work by Tversky & Kahneman (1974) to make the case that intuitive cognition typically makes decisions for us, with our conscious elaborations of these taking the form of post-hoc justifications of these intuitive outcomes (see also Kahneman, 2012). The second principle (morality is a multi-dimensional construct stems from Haidt and Joseph's (2004) work on intuitive ethics. They first identified four such ethics, which they argued make up the majority of our moral intuitions: (1) preventing suffering, (2) respecting hierarchies, (3) acting reciprocally, and (4) behaving purely. In the ensuing years, six *moral foundations* have been identified (Haidt & Graham, 2007; Iyer, Koleva, Graham, Ditto, & Haidt, 2012), with these being postulated as making up the "a first draft of the moral mind" (Haidt, 2008).

The care foundation refers to our human instinct to protect others from harm. This foundation is expressed through an instinct to protect vulnerable individuals from harm. While this impulse initially developed to protect offspring, changing social environments have led to the care foundation being expanded to include those perceived to be at the bottom of the social ladder, such as women, and racial, ethnic, and sexual minorities (Haidt, 2012).

The fairness foundation refers to intuitions about what is 'right' and 'wrong', and according to Haidt (2008) is closely associated with the concept of karma. That is, those who sanctify the fairness foundation are keen to embrace proportionality. Nobody should have more than they deserve. If they do, then they are seen as not 'playing by the rules', and may require intervention - either in the form of central distribution of goods and wealth to those who have less, or through punishment.

The loyalty foundation has its origin in our evolutionary tradition of tribal living, and suggests that some individuals feel a sense of moral purpose in having close and enduring connections with others. Within political discourse, Haidt (2008) argued that loyalty “binds and blinds”. That is, it serves to unite individuals through expressions of shared cultural values, but also fosters animosity and fear of those perceived as belonging to specific outgroups.

The authority foundation is linked to our desire for hierarchies as a vehicle for maintaining social order. From an evolutionary standpoint, this foundation manifests as respect for one’s parents or tribal elders or in some cultural contexts may extend to a strict observation of specific gender roles (Lakoff, 2014).

The purity foundation corresponds to our evolutionary drive to avoid potential pathogens, and is therefore closely related to disgust. In contemporary society, however, this foundation may be reflected in moral beliefs about “social pathogens” (Harper & Harris, 2017) that may upset societal order. In this respect, the purity foundation may be evoked in contemporary social attitudes toward issues (e.g., homosexuality).

The liberty foundation is based on the notion that people should be free from external control. While the liberty foundation is somewhat less empirically developed than the other five foundations, Iyer et al. (2012) divided this concept into two subcategories: ‘social liberty’ (freedom from interference in everyday living), and ‘economic liberty’ (freedom to keep and spend one’s own money without interference).

The third principle of MFT is that the endorsement of each moral foundation varies both between and within social and political groupings, with self-reported political identification being a key variable against which such differences have been observed (e.g., Graham, Haidt, & Nosek, 2010; Iyer et al., 2012). On the initial five moral foundations, Haidt (2012) suggested that liberals demonstrate a ‘two-channel’ approach to morality, and value

issues around ‘care’ and ‘fairness’ above all others. In contrast, conservatives endorse all five of Haidt and Graham’s (2007) initial five moral foundations to an equal extent, with a particular emphasis on loyalty, authority, and purity. That is, liberals stress the importance of acting fairly towards socially-disadvantaged groups, while conservatives also see moral virtue in upholding social and cultural values. In contrast, libertarians tend to place comparatively lower emphasis on the initial five moral foundations, and more emphasis on notions of social and economic liberty (Iyer et al., 2012). Consistent with social stereotypes, liberals score high in relation to social liberty, while conservatives score high on indices of economic liberty. This means that libertarians can side with either liberals or conservatives, depending on the issue under consideration.

Overview of studies

With the above review in mind, we sought to examine the moral intuitions of the ‘Remain’ and ‘Leave’ campaigns in the British referendum on EU membership. Much of the popular debate around Brexit and the EU referendum has focused on the differences between ‘Remain’ and ‘Leave’ voters in relation to selective and specific domains, such as age (older individuals were more likely to vote to Leave the EU), and education (more educated individuals were more likely to vote to Remain in the EU). While these variables appear to be of interest, we are not aware of any studies that have systematically examined the predictive value of these variables while controlling for relevant ideological or psychological constructs. In line with this, we believe that some of the key political debates being held in relation to Britain’s membership of the EU (e.g., the recent migrant crisis, the threat that freedom of movement potentially poses in terms of national security and cultural values, and British parliamentary sovereignty) also map well on to particular aspects of MFT.

In Study 1, we examined the theoretical and practical utility in considering moral foundations in relation to the intended direction of votes in a sample of British voters prior to the EU Referendum. In line with prior polling data (Electoral Commission, 2016), we predicted that older age and lower educational attainment would predict a preference for voting 'Leave' in the referendum. Further, owing to established findings that those who identify as being politically liberal tend to be more open (to new experiences, groups, or cultures; e.g., Carney, Jost, Gosling, & Potter, 2008), we predicted that a more liberal self-identified ideological orientation would be associated with a propensity to vote to Remain in the EU. In relation to psychological factors, we predicted that the endorsement of certain moral foundations would predict referendum voting intentions. Specifically, we predicted that endorsement of the care foundation would be predictive of a 'Remain' voting intention, while endorsement of the loyalty, authority, and liberty foundations would be predictive of an intention to vote 'Leave' in the referendum.

In Study 2, we sought to examine the presence of each of the moral foundations within official campaign news. In this analysis, we modified the Moral Foundations Dictionary (Graham & Haidt, n.d.) for the text analysis software Linguistic Inquiry and Word Count (LIWC2007; Pennebaker, Chung, Ireland, Gonzalez, & Booth, 2007) by adding new word stems for the liberty foundation, which is not analysed using the original dictionary. Our hypotheses for this analysis mirror those for Study 1. That is, we expected to find a significantly higher proportion of 'care'-related words in Remain campaign materials, and 'loyalty', 'authority', 'liberty'-related words in Leave campaign materials.

Study 1

Methods

Participants. Using the G*Power algorithm, a minimum sample size of 166 was required to detect a medium effect size with 95% power for our planned analyses. We purposively sought to over-sample in order to account for incomplete datasets, and to be able to generalise our findings more broadly than just in relation to a minimally-powered study. In total, 668 people responded to online study advertisements by going to the first page of the survey. Of these, 8 datasets were removed as respondents indicated that they did not meet the eligibility criteria (e.g., they were below 18 years of age), 153 were removed due to incomplete data (which we considered an indication of study withdrawal). This left a final sample of 507 (351 males, 153 females, 3 participants did not disclose gender) aged 18-80 years ($M_{\text{age}} = 33.37$ years, $SD = 13.87$), representing a 76.82% completion rate for eligible respondents who started the survey. Surveys were completed in the three months leading up to the EU referendum vote.

Participants were recruited using targeted online advertisements. We purposively set out to recruit as politically diverse a sample as possible. We undertook this endeavour in several ways. First, we targeted general community groups on the social networking site, Facebook. These advertisements were designed to attract a large cross-section of local communities. These posts were embedded into community groups spanning several regions of the UK, and encompassed urban and more rural areas. Next, we used personal Twitter feeds to distribute the study link to a more professionally-based audience. These advertisements gave a single sentence description of the study (see below), and included a request for viewers to share the link among their own social network. Finally, we posted the study link on the biggest Reddit forums for each of the five main political parties in the UK

(the Conservatives, Labour, the Liberal Democrats, the Green Party, and UKIP), as well as specific forums for discussing British politics and the EU referendum itself.

All participants were naïve to the specific theoretical basis of the study at the beginning of data collection, and took part in an online survey looking at “psychological factors influencing voting intentions for the upcoming EU referendum”. Data were collected during a four-week period in May 2016.

Measures.

Demographic questionnaire. A short demographic questionnaire was formulated for the purposes of the study. Information requested included participants’ age, gender, highest qualification, and political views (measured using a single item 11-point scale, ranging from -5 to +5; negative scores indicated a self-reported liberal orientation, while positive scores indicated a self-reported conservative orientation).

Referendum voting intentions. We asked participants to indicate their voting intention for the British referendum on EU membership, which was due to take place shortly after the closing of the study survey. Participants indicated how they were planning to vote in the referendum using a forced-choice approach (‘Remain’, ‘Leave’, or ‘Will not vote’). We supplemented this with an additional question about participants’ commitment to this voting intention. This used an 11-point Likert scale, anchored from 0 (‘Not at all committed to this choice’) to 10 (‘Very committed to this choice’). We computed an ‘EU Voting Intention’ variable by first coding the forced-choice question (‘Remain’ = -1; ‘Leave’ = 1), and then multiplying this by the commitment question score. This created a scaled variable, ranging from -10 (strongly committed to vote ‘Remain’) to +10 (strongly committed to vote ‘Leave’).

Moral Foundations Questionnaire. We used the 32-item moral foundations questionnaire (MFQ; Graham et al., 2010) to examine participants' respective endorsement of the importance of each of the five original moral foundations (care, fairness, authority, loyalty, and purity). The MFQ is comprised of two sections: 'relevance' (e.g., "Whether or not someone suffered emotionally" – care foundation), with items responded to using a six-point Likert scale, anchored from 0 (not at all relevant) to 5 (extremely relevant), and 'propositions' (e.g., "People should not do things that are disgusting, even if no one is harmed" – purity foundation), with items responded to using a six-point Likert scale, anchored from 0 (strongly disagree) to 5 (strongly agree). There are two catch questions ("Whether or not someone was good at math" – section one; "It is better to do good than to do bad" – section two), designed to (a) examine whether participants are paying attention to the scale when responding, and (b) to encourage participants to use the extremes of the Likert scales. This leaves 30 usable MFQ items (six per foundation, divided equally between the two scale sections) for scoring.

We used the SPSS for Windows syntax provided on MoralFoundations.org to score the MFQ. This syntax calculates an average score for each of the foundations, with a higher score indicating a greater level of endorsement for that moral domain. Average scores on each moral foundation within each of the voting intention groups, as well as reliability coefficients for each moral foundation, are provided in Table 1.

Table 1. Reliability coefficients and average foundation scores between voter groupings (Study 1)

	α	<u>Average score</u>		t	<u>Significance testing</u>	
		‘Remain’	‘Leave’		p	95% CI (difference)
Care	0.63	4.53 (0.69)	4.05 (0.87)	6.93	< .001	[0.35, 0.62]
Fairness	0.63	4.78 (0.61)	4.34 (0.77)	7.02	< .001	[0.31, 0.56]
Authority	0.75	3.12 (0.86)	3.77 (0.99)	7.72	< .001	[-0.81, -0.48]
Loyalty	0.73	2.91 (0.78)	3.49 (0.90)	7.63	< .001	[-0.73, -0.43]
Purity	0.81	2.41 (0.93)	2.94 (1.12)	5.76	< .001	[-0.71, -0.35]
Liberty	0.73	3.83 (0.81)	4.52 (0.89)	9.06	< .001	[-0.85, -0.55]

Note. Average scores represent mean values, with standard deviations presented in parentheses.

We used Iyer et al.’s (2012) nine items for measuring endorsement of the liberty foundation, and distributed these randomly among the other MFQ items. Owing to some of the more questionable alpha reliability coefficients for the established foundations in the present sample (particularly care and fairness), we first subjected these nine items to principal components analysis (Table 2). In this analysis, we extracted factors with eigenvalues greater than 1.00, and used no rotation (Field, 2005). After examining item loading coefficients, and considering advice on MoralFoundations.org, we decided to only consider factor one for our analysis of the liberty foundation. This is due to the small number of items in factors two and three making it difficult to obtain reliable estimates for these factors (O’Rourke & Hatcher, 2013). As indicated in Table 1, our six-item liberty foundation measure demonstrated good levels of internal consistency, and a significant difference between ‘Remain’ and ‘Leave’ voters was observed.

Table 2. Item loadings for Iyer et al.'s (2012) liberty foundation items (Study 1)

Item	Factor		
	1	2	3
Society works best when it lets individuals take responsibility for their own lives without telling them what to do	.772	.035	-.190
I think everyone should be free to do as they choose, so long as they don't infringe upon the equal freedoms of others	.684	.412	-.017
The Government interferes far too much in our everyday lives	.638	-.310	-.115
People who are successful in business have a right to enjoy their wealth as they see fit	.598	-.496	-.063
The Government should do more to advance the common good, even if that means limiting the freedom and choices of individuals	.558	.005	-.509
People should be free to decide which group norms and traditions they themselves want to follow	-.535	.193	-.086
Whether or not private property was respected	.380	.652	-.098
Whether or not everybody was free to do as they wanted	.436	-.371	.617
Property owners should be allowed to develop their land or build their homes in any way they choose, so long as they don't endanger their neighbours	.460	.433	.598

Note. Loadings in bold indicate the factor to which that item belongs. Negative factor loading indicates that the item should be reverse-scored in subsequent analyses.

Ontological Insecurities Scale. We used the 14-item two-factor Ontological Insecurities Scale (OIS; <ANONYMOUS>, under review) in order to examine participants' insecurities in relation to 'social change' (e.g., "The pace of social change is too quick"; $\alpha = .94$) and 'systemic inequality' (e.g., "We live in a fair society"; $\alpha = .70$). Each item is responded to on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). An average score is then computed for each factor. The OIS factors have been shown to be independent of each other, but related to established measures of ring-wing

authoritarianism and social dominance orientation (positively for social change insecurities, and negatively for systemic inequality insecurities). However, the items comprising the OIS are less overtly political than these more established scales. As such, we selected this measure as it had the potential to tap into constructs such as anti-immigrant sentiment and changing social structures in a way that was less explicit and obvious than these more openly political measures.

Procedure. Participants were invited to take part in the study using internet-driven invitations, which were posted on various social media channels (see above). Advertisements about the study took the form of brief item giving information about the topic of the study, alongside a link to an anonymous online survey.

The study survey was designed and hosted using software licensed from *Qualtrics*. Those potential respondents who were interested in taking part clicked on the link to the survey embedded in the study advertisement, and were directed to an overview of the project. They were asked to indicate giving their informed consent to take part in the study by clicking a button to progress to the data collection stage. On the initial survey page, participants completed the demographic questionnaire. On a subsequent page, participants were asked about their intentions to vote in the British referendum on EU membership, before finally completing the MFQ and OIS in a randomized order.

At the end of the survey, participants were fully debriefed as to the nature of the study, and thanked for their time. This procedure received ethical approval from a departmental review committee prior to data collection, and adhered to British Psychological Society ethical guidelines throughout.

Results

Data cleaning. Participants were removed if they failed both of the MFQ ‘catch’ questions, or indicated that they were not planning to vote in the EU referendum. This process led to the exclusion of data from 96 participants, leaving 411 valid datasets (81.06% of the completed responses) for analysis.

Moral foundations as predictors of Brexit voting. We used a three-stage hierarchical linear regression approach to predict EU referendum voting intentions. Given that previous reports had indicated that gender, age, and education level (i.e., having a degree vs. not having a degree) were the best predictors of voting intentions in the polls reporting prior to the vote (Electoral Commission, 2016), we entered these variables first. At stage two, we added our continuous political ideology variable, along with both factors of the OIS. Finally at stage three we added each of the moral foundations to the model. For clarity of presentation, Table 3 demonstrates regression coefficients for each variable in the model at each of these stages. We present a narrative of these results below.

At stage one, we found a statistically significant model explaining 5.1% of the variance in EU voting intentions ($F(3, 404) = 7.27, p < .001, R^2 = .051$). Older participants, men, and lower educational attainment were all significantly more likely to vote ‘Leave’ than were younger participants, women, and those with a higher education level.

The model at stage two was also statistically significant, explaining 42.7% of the variance in voting intentions ($F(6, 404) = 50.24, p < .001, R^2 = .427$). After adding political ideology and OIS factors to the model, no demographic variables independently predicted voting intentions. However, self-reported conservatism, and insecurities about social change were significantly associated with an intention to vote ‘Leave’.

At stage three, the model was also statistically significant, and explained 46% of the variance in referendum voting intentions ($F(12, 398) = 28.28, p < .001, R^2 = .460$). Here, self-reported political conservatism and increased insecurities about social change were still significantly predictive of an intention to vote 'Leave'. The addition of the moral foundations to the model produced a significant predictive effect of insecurities about systemic inequalities (in the direction of a 'Leave' vote). In relation to the moral foundations themselves, higher endorsement of the care foundation predicted an intent to vote 'Remain', while higher endorsement of the liberty foundation significantly predicted an intention to vote 'Leave'. None of the other foundations predicted voting intentions.

Study 2

Acknowledging the lack of representativeness in the opportunistic sample of Study 1, we sought to conceptually replicate the differential associations of moral foundations with each referendum campaign by linguistically analysing the content of official campaign news and speeches by the main spokespeople for either side of the debate.

Data sources

We consulted with the news pages of the Electoral Commission's officially-designated campaigns' websites: 'Britain Stronger In Europe', and 'Vote Leave'. Inclusion criteria were that stories were published after the official campaign designation was made, full-text versions of articles and speeches were available for analysis, and the focus of the materials presented were positive (i.e., the articles or speeches were not simply critiques or attacks on the other campaign). These criteria yielded a total of 140 stories for analysis. Of these, 86 were published by the Remain campaign, and 54 by Vote Leave.

Table 3. Three-stage hierarchical linear regression predicting EU referendum voting intentions (Study 1)

Predictor	<u>Stage 1</u>			<u>Stage 2</u>			<u>Stage 3</u>		
	B	SE B	β	B	SE B	β	B	SE B	β
Gender	1.83	0.93	0.10*	0.36	0.73	0.02	-0.43	0.80	-0.02
Age	0.11	0.03	0.18***	0.02	0.02	0.03	0.02	0.02	0.04
Education	-1.32	0.41	-0.16**	-0.33	0.32	-0.04	-0.16	0.33	-0.02
Ideology				0.89	0.17	0.30***	0.80	0.18	0.27***
OIS-1				2.88	0.39	0.41***	2.50	0.43	0.35***
OIS-2				0.35	0.40	0.04	0.96	0.42	0.10*
MFQ Care							-1.15	0.67	-0.11*
MFQ Fairness							-0.05	0.60	-0.01
MFQ Authority							-0.33	0.57	-0.04
MFQ Loyalty							0.64	0.53	0.06
MFQ Purity							-0.12	0.47	-0.01
MFQ Liberty							1.54	0.40	0.17***
R^2		.051			.427			.460	
F for R^2		7.27***			88.53***			4.04**	

Note. OIS-1 = social change insecurities; OIS-2 = systemic inequality insecurities. High scores on the outcome measure indicates a stronger intention to vote 'Leave'.

* $p < .05$ ** $p < .01$ *** $p < .001$

Procedure

LIWC (Pennebaker et al., 2007) was used to analyse the linguistic properties of the sources collected for Study 2. This linguistic analysis software allows digital written texts to be analysed in relation to their linguistic characteristics. We replaced the LIWC2007 dictionary with Graham and Haidt's (n.d.) moral foundations dictionary. This dictionary is comprised of a list of words and word stems that relate to each of the initial five moral foundations (care, fairness, loyalty, authority, and purity).

As the liberty foundation is not covered by the moral foundations dictionary, we first created a new code for the liberty foundation, and assigned this to 25 existing words or word stems within the dictionary. This is consistent with Graham and Haidt's original approach, with a number of words being assigned to more than one foundation. We then added 16 new words and word stems to the dictionary that were absent but uniquely related to the idea of liberty. The new and existing liberty-related LIWC words and word stems are presented in Table 4.

Results

We conducted a one-way (Campaign: Remain vs. Leave) multivariate analysis of variance (MANOVA) to examine the different uses of the care, fairness, loyalty, authority, purity, and liberty moral foundations in news and speeches published by each campaign. Through this analysis, a significant MANOVA effect was obtained (Wilks' $\lambda = .75$; $F(6, 133) = 129.82$, $p < .001$, partial $\eta^2 = .25$). Material published by Vote Leave was comprised of significantly more words related to both authority ($F(1, 138) = 40.38$, $p < .001$, partial $\eta^2 = .23$) and liberty ($F(1, 138) = 12.32$, $p = .001$, partial $\eta^2 = .08$), as compared to material published by the Remain campaign. There were no significant differences between the campaigns' use of any of the other moral foundations (Table 5).

Table 4. Words and word stems associated with the liberty foundation in the modified LIWC dictionary (Study 2)

Existing words and word stems	Additional words and word stems
exploit	free
exploits	freedom
exploited	liberty
exploiting	autonom*
rights	choice
obey*	choose
obedien*	liberate
duti*	liberation
order*	sovereign*
supremacy	independent
control	independence
submi*	dictat*
serve	totalitar*
abide	coerc*
defere*	authoritarian*
defer	tyran*
defian*	
rebel*	
dissent*	
subver*	
disobe*	
defy*	
defector	
nonconformist	
protest	

Table 5. Prevalence of moral foundations in campaign materials (Study 2)

Foundation	Remain	Leave	Inferential statistics
Care	0.75 (0.66)	0.61 (0.48)	$F(1, 138) = 1.87, p = .178, \eta^2_p = 0.01$
Fairness	0.22 (0.56)	0.24 (0.22)	$F(1, 138) = 0.07, p = .793, \eta^2_p < 0.01$
Loyalty	0.78 (0.65)	0.77 (0.48)	$F(1, 138) = 0.02, p = .896, \eta^2_p < .01$
Authority	0.38 (0.35)	0.79 (0.40)	$F(1, 138) = 40.38, p < .001, \eta^2_p = 0.23$
Purity	0.06 (0.16)	0.04 (0.08)	$F(1, 138) = 0.21, p = .649, \eta^2_p < 0.01$
Liberty	0.47 (0.50)	0.78 (0.50)	$F(1, 138) = 12.32, p = .001, \eta^2_p = 0.08$

Note. Mean values represent the percentage of campaign materials comprised of words related to each of the moral foundations (*SD* in parentheses).

General Discussion

Overview of key results

In this paper, we have reported two studies examining the presence of moral foundations in the British referendum on EU membership in June 2016. In Study 1, we found that demographic characteristics associated with the Leave vote in polling data (e.g., older age and lower educational attainment) became non-significant once psychological factors were entered into our logistic regression model. That is, political conservatism, insecurities about social change, and an adherence to the liberty foundation of morality significantly predicted intentions to vote ‘Leave’. When looking at the presence of moral foundations in campaign news and speeches (Study 2), these initial effects were mirrored. That is, there were significantly higher levels of loyalty- and liberty-related language in material shared by Vote Leave than by the Remain campaign. While adherence to the authority moral foundation was not independently a significant predictor of referendum voting intentions in Study 1, this may be a reflection of ingroup preference that is reflected in the OIS social change factor that did predict a ‘Leave’ vote. That is, OIS social change is highly correlated with right-wing authoritarianism, which is subsequently predictive of nationalistic sentiment (Harnish, Bridges, & Gump, 2017).

Mapping the moral foundations within the Brexit campaign

Our data suggest that incorrect polling predictions before the referendum may be due to polling typically ignoring non-conscious psychological motivations that may contribute to political decision-making. We argue that, in addition to the demographic factors identified by polling companies, EU voting intentions may be examined using a social identity theory framework. That is, due to media coverage of the two ‘sides’ of the referendum, each side could be said to have started to vilify the other. Self-identifying liberals place moral value on protecting those at the very bottom of society via the care foundation (Graham et al., 2010; Haidt, 2012). In contrast, there is a conservative emphasis on economic liberty and self-determination (Iyer et al., 2012). Given the intensity of public debate around immigration (particularly in relation to the Syrian migrant crisis and its links to border control within the EU) in the lead up to the referendum, differences in these moral impulses are likely to have exacerbated any perceived differences between ‘Remain’ and ‘Leave’ voters. This is exemplified through the lack of statistically significant difference (and high mean values) in voting choice commitment between the two groups of voters. That is, with debate about immigration and continental migration dominating media coverage and public discussions, broad differences in the moral intuitions of helping refugees (a ‘liberal’/‘Remain’ impulse) and maintaining a strong and ontologically secure sense of national identity (a ‘conservative’/‘Leave’ impulse). Further, the ‘Leave’ campaign’s proclamation of being about to control one’s own finances (best exemplified by the apparent mistruth about an additional £350million per week for British healthcare spending, rather than this sum being sent to the EU) may have tapped into a liberty-based drive for self-control.

What is perhaps most interesting from our data, though, is that the loyalty foundation (which is linked to a preference for one’s own ingroup and a perceived moral importance of

protecting this identity) did not significantly predict an intention to vote ‘Leave’ in the referendum. Instead, ‘Leave’ voters in our sample were primarily driven (morally speaking) by an endorsement of the liberty foundation. The importance of this relates to the popular campaigning strategies used by both campaigns at the grassroots level in the run up to the referendum itself. While campaigners for a ‘Remain’ vote recruited a large number of academics and expert economists to make the case that Britain was “stronger, safer, and better-off” inside the EU, those attempting to mobilise people to vote ‘Leave’ had a simple intuitive message: “take back control”. Moral psychologists have written for several years that people have a tendency to make highly-charged political decisions using intuitive processes, and then to rationalise these through verbal elaboration and justifications. This process is perhaps best operationalised through Haidt’s (2001) social-intuitionist model of moral judgement. According to this framework, the most effective way to change somebody’s mind, or to convince them of a particular proposition, is to speak to their intuitions rather than their rationality. From the content and tone of the two referendum campaigns, it is clear that those aligned with the ‘Leave’ campaign held a better understanding about (a) the nature of moral psychology, and (b) the moral intuitions of undecided voters, than those involved with the ‘Remain’ campaign.

It is also worth noting that demographic factors only predicted voting intentions when examined without controlling for psychological constructs, such as ideological orientation, ontological insecurities, and moral foundations. By adding ideological- and morality-based constructs to the model, we were able to significantly improve the amount of variance in voting intentions that could be explained by the model. This observation is worth raising within the context of the inaccuracy of a range of recent political polls ahead of major votes. It may be advisable for polling companies to begin including psychologically-informed constructs in their models when forecasting future elections, as it appears that, after

controlling for such constructs, demographic-based predictors may be unable to predict voting intentions.

Limitations and future directions

There are some methodological limitations with our study that should be taken into account when interpreting the key findings. Firstly, we used a self-selecting opportunity sample by advertising the study on open social media platforms. While this is not necessarily a substantial issue in itself, and is consistent with many published articles in this area, this approach does have the potential to introduce bias into both the sample and the data. For example, it has been documented that respondents to online surveys are typically younger and more politically liberal than the general population (Huff & Tingley, 2015). This was exemplified in the present study through an over-representation of ‘Remain’ voters in the present sample (61.9%) as compared with the actual result of the referendum (48.11%; Electoral Commission, 2016). To mitigate this limitation, we placed study advertisements in a range of different environment to gain exposure to a wide range of participants from different political positions, and sought to recruit a large sample to increase statistical power. Although our sample was not truly representative, our ratio of Leave to Remain voters mirrors other published works examining the Brexit vote (Van der Vyver, Leite, Abrams, & Palmer, 2018), while other studies using self-selecting samples to examine the vote have failed to state the vote split within their sample altogether (Meleady, Seger, & Vermue, 2017). Going further than this previous work, however, we were also able to conceptually replicate the effects obtained from self-report methods by examining the moral foundations in campaign materials (e.g., speeches and news items). That is, an adherence to the liberty foundation was significantly more associated with the Leave campaign than Remain, as were themes related to ingroup loyalty and the rejection of social change. However, future studies

may be advised to make use of managed panel recruitment initiatives for more balanced participant recruitment.

Secondly, our political orientation measure, which was one of the best predictors of EU referendum voting intentions among those in our sample, was comprised of a single item scale, anchored from ‘very liberal’ to ‘very conservative’. However, recent political trends, and contemporary research into the nature of political ideologies, have led to an acknowledgement that political orientation should be measured using multiple items (e.g., Everett, 2013), or specifically in relation to different orientations (e.g., libertarianism vs. authoritarianism, or economic vs. social orientations; Malka, Soto, Inzlicht, & Lelkes, 2014). When examining whether political orientation is important in future studies, it may be interesting to distinguish between the relative importance of social and economic conservatism in voting intentions.

Third, we found that Iyer et al.’s (2012) conceptualisation of the liberty foundation, which was comprised of two factor model (economic liberty and lifestyle liberty) did not suit the data provided by our sample in Study 1. While this may appear to be a shortcoming of the present study’s key finding that the moral impulse relating to liberty was important in predicting the ‘Leave’ vote, it is important to note that our five-item measure has good face validity and internal consistency. However, our claims would be further supported with replicated findings using other measures of liberty, as the cross-cultural applicability of Iyer et al.’s (2012) measure may be questioned by our analysis.

Away from addressing methodological issues, future research may use the findings of this study to examine whether the moral foundations mentioned here can be incorporated into political communication strategies. For example, there has been a noticeable movement towards anti-EU parties across Europe in recent years (Ford & Goodwin, 2014). It could be that accusations of racism and isolationism do nothing but fuel a further division between

those in favour of maintaining their country's EU member status and those wanting to leave. The lack of significant predictive effect of the loyalty foundation in voting intentions (which would be the foundation intuitively linked to anti-immigrant sentiment; Graham et al., 2010) calls into question some of the popular criticisms levelled at those who support(ed) a 'Leave' vote. Instead, those wanting to remain in the EU (or campaign for a so-called 'soft Brexit') could use of the liberty foundation to their advantage, and activate these moral impulses when talking about the potential benefits of EU membership in future campaigns? These ideas could be tested in subsequent research using priming paradigms to examine variations in political judgements after reading campaign materials that have different moral messages embedded within them.

Concluding remarks

In sum, and aside from the opportunities for further research endeavours, we would encourage those on both sides of the political divide to begin to use data such as those reported in this study to develop an appreciation for the moral intuitions of their political opponents. Far from being "thick", "racist", "stupid", or "idiots" (the first four descriptors to appear as auto-fill options for a Google search beginning with the phrase "Brexit voters are..." at the time of writing), those individuals who voted to leave the EU may have seen this as their opportunity to 'take back control' (a sentiment related to the liberty moral foundation) of their destinies and build a new future for themselves. Similarly, those on the other side of the vote placed moral value on care for those at the bottom of the social ladder. This does not mean that they are "traitors" (the number one auto-fill option for a Google search beginning "Remain voters are..."), nor does it necessarily mean that they are seeking to change to cultural fabric of the country.

What we have highlighted in this paper is that moral intuitions play a key role in informing political decisions that are likely to have both immediate and long-term effects on a nation's social, cultural, and economic prospects. A positive response to this finding would be to place an increased theoretical and practical importance on understanding these intuitive differences in order to promote compromise and constructive debate, and to begin to address the polarisation and division that we are experiencing in politics across a range of modern democracies.

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