





Moral Foundations theory in the context of a political scandal: Two cross sectional studies in Croatia

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Aim: The aim of this study was to examine the moral foundations structure in the Croatian population, and to examine possible changes in moral foundation structure after a major political scandal in Croatia.

Methods: We conducted an online survey using Moral Foundations Questionnaire and Key Social Issues Scale, which was distributed in two waves, in 2009 and 2014. Participants were invided from the Faculties of Humanities and Social Sciences at the universities in Zagreb and Split and asked to distribute the survey to colleagues and friends.

Results: 3000 participants completed the survey in 2009, 1323 participants completed the survey in 2014. In both samples, most participants reported that they relied more on individual foundations of "Care/Harm" and "Fairness/Cheating", than on relational foundations of "Loyalty/Betrayal", "Authority/Subversion" or "Sanctity/ Degradation", which are typically more valued by traditionally oriented or conservative individuals. Comparison of the two measurement time points indicated that scores on traditional foundations significantly decreased, while liberal values increased. These changes were triangulated and confirmed by the results on the Key Social Issues Scale.

Conclusion: In order to encourage students and training doctors to more readily engage in research, exposure to research and research participation could have an incremental value to existing research education in medical schools.

Background

Although there is clear evidence that morals have a significant effect on attitudes formation and individual behaviour [1], the very definition and measurements of morals are still insufficiently reinforced by research evidence.



An approach to moral structure is the Moral Foundations Theory (MFT) [2, 3] by which moral decisions are made intuitively, affected by five related dimensions; "Care/Harm", "Fairness/Cheating", "Loyalty/Betrayal", "Authority/Subversion" and "Sanctity/Degradation" [3]. The foundations of moral reasoning differ in their relevance in decision making, depending on the biological factors or social characteristic of a group one belongs to, and there are indications that differences in moral foundations are related to personal characteristics like gender, personality traits, culture and religious orientation [3-5].

MFT has been often explored in the context of political attitudes, especially when observing the differences between liberals and conservatives [6]. The latest findings show that there is no difference in the "Care/Harm" foundation between different political orientations [7] and that both liberals and conservatives rely on "Care/Harm", "Fairness/ Cheating" and "Sanctity/Degradation" when making moral judgements about influential people [8]. Individuals exaggerate the sizes of differences in moral dimensions between their and other groups (e.g., the differences between liberal and conservative political orientations are often exaggerated) [9]. Liberals seem to be the least accurate when assessing the importance of the moral dimensions of other groups, as they underestimate the importance of individual moral dimensions ("Care/Harm" and "Fairness/Cheating") and overestimate the importance of relational moral dimensions ("Loyalty/Betrayal", "Authority/ Subversion" and "Sanctity/Degradation") for conservatives [9]. Also, if an individual is presented with examples of social issues which are framed to support his/her attitudes, then his/her political attitudes would be bolstered, which is a mechanism often used in political campaigns [10]. However, what happens if the moral foundation relevant to an individual is negatively valued? For example, what would happen if a certain event, value or person, which is important to one's moral reasoning is negatively valued in a group? This has not yet been explored, and for that reason we used a naturally occuring situation of a political scandal: a sudden unexplained resignation of the Croatian Prime Minister, followed by the revelation of a large scale corruption affair and subsequent trials in the following years involving the prime minister and his political party, which played a major role in Croatian politics since its independence [11]. The idea was to use this situation to test the assumption that media coverage of the events and its impact on Croatian politics could also affect the moral conceptions of individuals.

Methods

Setting and procedure

The invitation for the survey assessment was sent at two time points – 2009 and 2014 – to employees' e-mails at the Faculty of Humanities and Social Sciences at the University of Zagreb (http://www.ffzg.unizg.hr/) and the Faculty of Humanities and Social Sciences at the University of Split (http://www.ffst.unist.hr/), which were publicly available at the Faculties' websites at the time of the study. The sample was increased using the snowballing method by asking initial participants to forward the survey link to the friends and contacts who they considered would be interested in the study. The initial 2009 time point



occured before the political scandal and was aimed at assessing the psychometric characteristics of the Croatian version of the Moral Foundations Questionnaire. The data was not published, but after the occurence of critical events described in the Introduction, we used the opportunity to assess the potential effects of the situation in 2014, when the scandal continued to be publicly visible in court trials.

The Ethics Committee of the University of Split Faculty of Humanities and Social Science approved the study.

Participants

In order to take the survey, participants had to be over 18 years old. There was no time limitation for survey completion.

Variables

The survey had 67 questions in total, which included demographic variables, the Moral Foundations Questionnaire [2] and Key Social Issues Scale [12].

Demographic Variables

The participants were asked about their gender, age, highest education degree, and political orientation (1-Extremely left, 2-Moderately left, 3-Left centre, 4-Centre, 5-Right centre, 6-Moderately right, 7-Extremely right). The participants were asked to mark the level of their interest in political situations (1-Not interested at all, 2-Mostly not interested, 3-Somewhat interested, 4-Very interested). They were also asked to respond to two questions about their religious orientation; a) How would you best describe the religion which you grew up with? and b) How would you describe your present religious orientation? Finally, they were asked to mark the frequency of their attendance to religious services (Several times a week, Once a week, Almost every week, Two to three times a month, Approximately once a month, Several times a year, Once or twice a year, Less than once a year, Never).

Moral foundations questionnaire (MFQ)

The MFQ consists of 30 items, divided into two parts. In the first part, the task for the participant is to mark on a Likert-type scale (0-5) how much he or she considers the present claim when assessing whether something is good or bad (*Moral judgement subscale*). In the second part, the participant should assess how much certain values or customs are relevant to him or her on a 0-5 Likert-type scale (*Moral relevance subscale*). The scores are formed as a linear combination of the answers on five latent domains (foundations): "Care/ Harm", "Fairness/Cheating", "Loyalty/Betrayal", "Authority/Subversion", and "Sanctity/ Degradation". The MFQ was translated into Croatian and back-translated by one of the authors (DH) and an independent English language expert.

Socially important attitudes

For the measurement of social attitudes, we used the Key Social Issues Scale (KSIS) [12]. It consists of 25 items divided in five subscales that measure five different aspects of social



attitudes: Religiousity, Social Justice, Modern Technologies, Cosmopolitanism and Sexual Freedom. Items are assessed by participants on a 5-point Likert-type scale, indentifying the degree of participants' agreement with the item. Higher scores represent higher belief/support for a certain concept.

Sample size

We calculated that for an alpha level of error of 5% and with a 95% confidence level, we would need 384 participants to obtain precise information for the entire population of Croatia (https://surveysystem.com/sscalc.htm).

Statistical analysis

The construct validity of the MFQ was examined using confirmatory factor analysis. The reliability for all subscales on the MFQ and KSIS was assessed using Cronbach's alpha coefficients. Gender, education, political orientation, interest, religion present while growing up, current religious orientation and frequency of attendance to religious services were presented as frequencies and percentages. The MFQ subscales and KSIS subscales were presented as means with 95% confidence intervals (CI). The differences between categorical variables were tested using the chi-square test and the differences between continous variables were tested using the Student's t-test for independent samples. The sizes of the differences were presented both as mean differences with 95% CI and Cohen d's with 95% CI. All statistical analyses were made using R language, v.3.4.3 [13].

Results

Construct validity of the MFQ

The large sample gathered in this research enabled us to examine structural models that resulted from theoretical assumptions. For the final validity test, we conducted a factor analysis on all MFQ items. The model with 5 related factors showed a satisfying fit (χ^2 =2851.15; df=395, The Root Mean Square Error of Approximation (RMSEA)=0.045, 90% CI=0.044-0.047).

Reliability analysis

MFQ latent domains had satisfying reliability when the small number of items per subscale is taken into account: "Care/Harm" (Cronbach α =0.57), "Fairness/Cheating" (α =0.51), "Loyalty/Betrayal" (α =0.72), "Authority/Subversion" (α =0.71) and "Sanctity/Degradation" (α =0.78). The KSIS subscales also had good internal consistency: Religiosity (α =0.92), Social Justice (α =0.68), Modern Technologies (α =0.83), Cosmopolitanism (α =0.75) and Sexual Freedom (α =0.83).

The median age of the respondents in the overall sample was 30 (IQR=24-39). Most of the respondents were female (n=3074, 71.1%), and more than two-thirds (n=3174, 73.4%) had a university degree (**Table 1**).



Table 1. Demographic data (No, %) on survey respondents from 2009 and 2014 (N=4323)

Variable	2019	2014	P*
variable	N=3000	N=1323	P^
Gender:			
Female	2137 (71.2)	937 (70.8)	<0.001
Education level:			
Did not graduate from elementary school	4 (0.0)	1 (0.0)	
Elementary school graduate	22 (0.1)	11 (0.0)	
High school graduate	805 (26.8)	299 (22.8)†	<0.001
Bachelors degree	543 (18.1)	296 (22.4)†	<0.001
Masters degree	1469 (49.0)	499 (37.7)†	
Doctorate	157 (5.2)	210 (15.8)†	
Political orientation:			
Extremely left	190 (6.3)	113 (8.5)	
Moderately left	852 (28.4)	385 (29.1)	
Left center	436 (14.5)	162 (12.2)	
Center	461 (15.3)	184 (13.9)	0.083
Right centre	203 (6.8)	83 (6.3)	0.003
Moderately right	305 (10.1)	144 (10.9)	
Extremely right	44 (1.4)	23 (1.7)	
Other	509 (17.0)	222 (16.8)	
Interest in political situations:			
Not interested at all	279 (9.3)	120 (9.1)	
Mostly not interested	1244 (41.5)	511 (38.8)	0.164
Mostly interested	1213 (40.4)	545 (41.4)	0.104
Very interested	264 (8.8)	140 (10.6)	
Religion present during growing up:			
Christianity-catholicism	2185 (72.8)	977 (74.2)	
No religion	634 (21.1)	264 (20.1)	0.533
Other	101 (3.4)	36 (2.7)	0.000
Missing	80 (2.7)	39 (1.5)	
Current religious orientation:			
Christianity-catholicism	1558 (51.9)	606 (46.0)†	
No religion	979 (32.6)	503 (38.2) †	<0.001
Other	131 (4.4)	39 (3.0)	-0.001
Missing	332 (11.1)	159 (12.1)	
Religious services attendance frequency:			
Several times a week	126 (4.2)	88 (6.7)†	
Once a week	324 (10.8)	161 (12.2)	
Almost every week	108 (3.6)	51 (3.8)	
Two to three times a month	145 (4.8)	44 (3.3)	
Approximately once a month	137 (4.6)	55 (4.1)	<0.001
Several times a year	474 (15.8)	158 (12.0)†	
Once or twice a year	372 (12.4)	129 (9.8)†	
Less than once a year	386 (12.9)	124 (9.4)†	
Never	928 (30.9)	506 (38.5)†	



^{*}Chi square test. Significant differences are in bold. †Significantly different from the 2009 sample, P<0.05; chi-square post-hoc test.

The majority of respondents had political preferences on the left side of the spectrum (around 60% extremely left, moderately left and left centre political orientations), compared to the 22% of the right-oriented participants (**Table 1**). Most respondents had little or moderate interest in politics (**Table 1**). The majority of respondents (n=3162, 73.1%) grew up in Christian-Catholic religion (**Table 2**).

The sample from 2014 had a significantly smaller proportion of female participants compared to the group from 2009, a significantly smaller proportion of high school graduates, bachelors and masters degree awardees, but significantly more paticipants with a doctorate (Table 1). Also, the 2014 sample had more participants who reported that they were not religious and had fewer participants declaring the Christian-Catholic religious orientation (Table 1).

Table 2. Comparison of 2009 and 2014 samples on the Moral Foundation Questionnaire (MFQ) and Key Social Issues scale (KSIS)

(NOIO)	M (95% CI)		Mean differ- ence (95% CI)	P*	Cohen d
	2009 (n=3000)	2014 (n=1323)			
Moral foundations (MFQ):					
Care/Harm	29.2 (29.0 to 29.3)	29.5 (29.3 to 29.7)	0.30 (0.05 to 0.55)	<0.001	0.09 (0.02 to 0.15)
Fairness/Cheating	29.7 (29.6 to 29.8)	30.0 (29.8 to 30.2)	0.30 (0.09 to 0.51)	<0.001	0.11 (0.05 to 0.18)
Loyalty/Betrayal	21.8 (21.6 to 22.0)	21.2 (20.9 to 21.5)	-0.61 (-0.96 to -0.26)	<0.001	-0.11 (-0.18 to -0.05)
Authority/Subversion	19.8 (19.6 to 20.0)	19.1 (18.8 to 19.4)	-0.67 (-1.01 to -0.33)	<0.001	-0.12 (-0.19 to -0.06)
Sanctity/Degradation	23.1 (22.9 to 23.3)	21.9 (21.5 to 22.3)	-1.19 (-1.61 to -0.78)	<0.001	-0.19 (-0.25 to -0.12)
Social issues (KSIS):					
Religiosity	15.3 (15.1 to 15.5)	14.4 (14.1 to 14.8)	-0.88 (-1.23 to -0.53)	<0.001	-0.17 (-0.23 to -0.10)
Social justice	20.3 (20.2 to 20.4)	20.6 (20.4 to 20.7)	0.23 (0.06 to 0.40)	0.008	0.09 (0.02 to 0.15)
Modern Technologies	19.6 (19.5 to 19.7)	19.5 (19.3 to 19.6)	-0.16 (-0.04 to 0.35)	0.109	-0.05 (-0.12 to 0.01)
Cosmopolitanism	19.9 (19.8 to 20.0)	20.4 (20.3 to 20.6)	0.52 (0.34 to 0.70)	<0.001	0.19 (0.12 to 0.25)
Sexual Freedom	16.4 (16.3 to 16.5)	16.1 (15.9 to 16.4)	-0.26 (-0.51 to -0.02)	0.051	-0.07 (-0.13 to 0.00)

M - mean; CI - confidence interval

We separately analysed the differences between the samples collected in 2009 and 2014, both on all participants and between the 2009 sample and the participants from 2014 who reported that they did not participate in the 2009 wave of data collection. In 2009, the overall assessment of the MFQ revealed that "Care/Harm" and "Fairness/Cheating" were more valued compared to the "Loyalty/Betrayal", "Authority/Subversion" and "Sanctity/Degradation" subscales, and that the same pattern remained in the 2014 assessment (Table 2). On the KSIS test, Social justice, Modern Technologies and Cosmopolitanism were as-



^{*}T-test for independent samples. Significant differences are in bold.

Table 3. Comparison of the 2009 sample and respondents from the 2014 sample who reported first-time participation in the Moral Foundation Questionnaire (MFQ) and Key Social Issues scale (KSIS)

	M (95% CI)		Mean differ- ence (95% CI)	P*	Cohen d
	2009 (n=3000)	2014 (n=835)			
Moral foundations (MFQ)					
Care/Harm	29.2 (29.0 to 29.3)	29.6 (29.3 to 29.8)	0.45 (0.15 to 0.74)	0.007	0.10 (0.03 to 0.19)
Fairness/Cheating	29.7 (29.6 to 29.8)	30.0 (29.8 to 30.3)	0.35 80.09 to 0.61)	0.011	0.11 (0.03 to 0.18)
Loyalty/Betrayal	21.8 (21.6 to 22.0)	21.0 (20.7 21.5)	-0.72 (-1.14 to - 0.30)	<0.001	-0.13 (-0.21 to -0.05)
Authority/Subversion	19.8 (19.6 to 20.0)	19.0 (18.6 to 19.4)	-0.83 (-1.24 to -0.41)	<0.001	-0.16 (-0.23 to -0.08)
Sanctity/Degradation	23.1 (22.9 to 23.3)	21.9 (21.4 to 22.4)	-1.25 (-1.75 to -0.75)	<0.001	-0.19 (-0.27 to -0.12)
Social issues (KSIS)					
Religiosity	15.3 (15.1 to 15.5)	14.4 (13.9 to 14.8)	-0.93 (-1.35 to -0.51)	<0.001	-0.17 (-0.25 to -0.09)
Social Justice	20.3 (20.2 to 20.4)	20.6 (20.4 to 20.8)	0.31 (0.11 to 0.51)	0.005	0.12 (0.04 to 0.20)
Modern Technologies	19.6 (19.5 to 19.7)	19.4 (19.1 to 19.6)	-0.29 (-0.53 to -0.05)	0.027	-0.10 (-0.17 to -0.02)
Cosmopolitanism	19.9 (19.8 to 20.0)	20.5 (20.3 to 20.7)	0.56 (0.34 to 0.78)	<0.001	0.20 (0.12 to 0.27)
Sexual Freedom	16.4 (16.3 to 16.5)	16.1 (15.7 to 16.4)	0.33 (0.00 to 0.63)	0.055	0.09 (0.00 to 0.16)

M - mean; CI - confidence interval

sessed as more important compared to Religiosity and Sexual Freedom (**Table 2**). The 2014 group had higher scores on the "Care/Harm" and "Fairness/Cheating" subscales, while scores on "Loyalty/Betrayal", "Authority/Subversion", and "Sanctity/Degradation" were significantly lower. On the KSIS test, the results on the Religiousity subscale were lower in 2014 compared to 2009, whereas Social Justice scores and Cosmopolitanism were higher than in 2009 (**Table 2**). When comparing the 2009 group with participants in 2014 who reported that they did not participate in 2009, the results were similar on the MFQ subscales and on the KSIS, except the 2014 group, which had lower results on the Modern Technologies subscale (**Table 2**).

Discussion

Our study showed that a sample taken from the Croatian population had higher scores on the liberal foundations of "Care/Harm" and "Fairness/Cheating", and lower results on more traditional foundations of "Loyalty/Betrayal", "Authority/Subversion" and "Sanctity/Degradation". Comparing the results from 2009 and 2014, the years preceeding and following a major political corruption scandal involving the Croatian Prime Minister [11], we found significant differences, with higher scores on "Care/Harm" and "Fairness/Cheating" and lower for "Loyalty/Betrayal", "Authority/Subversion", and "Sanctity/Degradation" in



^{*}T-test for independent samples. Significant differences are in bold.

2014. The same finding was observed in the comparison of the 2009 sample with those participants from 2014 who reported that they did not take the 2009 survey, in order to ensure independent comparisons between measurements. The results from the KSIS, a different measure of social values, additionally support these results as the scores on Religiousity was lower and higher on Social Justice in 2014.

Our results should be interpreted in view of several limitations. In the 2014 group, there were participants from the 2009 survey, but we could not match their results because of annonimous data collection at both time points. Therefore, we replicated the analysis on those participants who reported that they had not participated in 2009. Although we could not randomize participants into two measurements in 2014, we tried to ensure the similarity in data collection and representativeness. Consequently, the survey went through the same channels, which allowed us to make conclusions about temporal changes. Also, the research was limited to younger and educated participants who could use and had access to the Internet and lived in urban areas. Over half of the participants described themselves as Christian-Catholics and about a third of the participants reported that they were not religious, whereas there are about 86% of declared Christians and only about 4% non-religious Croatian citizens, according to the 2011 Census [14]. As most of the participants had higher education, our results can be generalized with caution to the more educated part of the population. Finally, the survey was advertised as a study of morality, so it is possible that people who took part in the study had more interest in moral issues.

The rationale for this research must be viewed in the country context [15]. The first wave of research was performed just before the beginning of the economic crisis that impacted Croatia later than the rest of the world. After the survey, numerous corruption affairs were discovered at the highest political levels: besides several politicians who were arrested under the suspicion of taking bribes and devloping a parallel funding system for high politics, the (then ex) Prime Minister himself was jailed. Most individuals involved in the corruption affair belonged to the major political party that identifies itself with traditional values. Political opponents used this in the following campaigns and systematically described themselves as opposites to the figures from the corruption scandals [15]. As mentioned before, emphasizing the moral foundations that are already relevant for an individual can enhance the initial scores on those foundations [10]. It is then guite possible that the corruption affairs had the opposite effect, i.e. lessening the importance of the foundations that the "fallen" and publicly demonized party and politicians identified with. At the same time, the foundations endorsed by the opponents were amplified. The practical importance of this finding is that moral foundations have been previously described as good predictors of voting behaviour [16], and major scandals on one side of the political spectrum can possibly influence relying on moral foundations during voting. The recommendation for future research is to examine whether there are any changes in moral foundations in individuals before and after a negative evaluation of symbols relevant to them, as well as possible consequences to the mental health and well-being of the population.



Conclusion

In our assessment of the moral foundations in a highly educated sample of participants from Croatia before and after a major political corruption affair, we found that moral foundation scores changed significantly, given the increasing "liberal" foundations and decreasing "conservative" ones. Our results imply that moral foundations can potentially be affected by major social events, which may have consequences on voting behavioural patterns and media perception.

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