

# Explaining Political Polarization over Abortion: The Role of Moral Values among Conservatives

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Study 2 was pre-registered ([osf.io/dn2gq](https://osf.io/dn2gq)) and the data for both studies are publicly available ([osf.io/vxc4d](https://osf.io/vxc4d)).

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### Abstract

Why are anti-abortion attitudes more prevalent among conservatives? We show that people who prioritize courage, deference to authority, and caring for kin are more likely to oppose abortion and that these associations are mediated by conservatism. However, group loyalty, which is usually associated with conservatism, surprisingly predicts pro-abortion attitudes. In two studies ( $N = 525$ ), we disambiguate the effects of social dominance orientation and fusion from conservative ideology. These findings suggest that attitudes towards abortion are shaped by moral concerns which are then recruited by political ideologies. Understanding the relationships between morality and political ideology is crucial to managing the effects of divisive social issues on polarization.

*Keywords:* abortion attitudes, conservatism, identity fusion, social dominance orientation, morality as cooperation, polarization

The link between conservatism and opposition to abortion is well established, but the reasons for this are far from clear (e.g., Poteat & Mereish, 2012; MacInnis et al., 2014). Hallmark features of conservatism include endorsement of the status quo, deference to authority, and resistance to change (Jost et al., 2003). It is not obvious that the ideas associated with opposition to abortion, such as arguments about the 'right to life', are logically or even thematically a better fit with the defining values of conservatism. They could just as easily be

linked to more liberal values championing the rights of the innocent and powerless unborn.

One possibility is that opposition to abortion has become entangled with an established belief system, such as Roman Catholic doctrine, for arbitrary historical reasons. Therefore, conservative commitment to that belief system includes anti-abortion commitments as one of its entailments (along with other equally arbitrary and historically contingent ideas such as a belief in transubstantiation). If that were the case, then a

strong alignment with the established belief system condemning abortion may be sufficient to explain opposition to abortion. Another possible explanation is that individual moral concerns and preferences influence attitudes to abortion (pro or anti) independently of the effects of any particular ideological or religious belief system. Given that there is evidence for both scenarios, we consider here a third possibility: that conservatism mediates the relationship between moral concerns and attitudes to abortion.

Abortion is a medical procedure that fuels ethical, legal, and socio-political debate. Access to abortion varies widely from country to country – regulations may be punitive or protective, but also arbitrary, vague, and confusing (Johnson et al., 2018). According to the Center for Reproductive Rights, 50 countries have liberalized their abortion laws over the past 25 years (2018), but this trend may have its bumps, like in Poland, where due to the ruling of the Constitutional Tribunal (22 October 2020), abortion in case of a high probability of severe and irreversible fetal defect was announced unconstitutional (Zaręba et al.,

2021). Technically, this ruling outlawed abortion in case of fetal abnormalities and sparked the greatest country-wide protests since the fall of communism (BBC News, 2020). As a result, conservative Polish media launched a discussion on the permissiveness of abortion that was centered around moral arguments (Koralewska & Zielińska, 2021). The current project was conducted in Poland shortly after the protests. We wanted to explore the relative sway of a variety of factors previously thought to influence attitudes to abortion, especially morality.

According to the 'Morality-as-Cooperation' framework (MAC), that we used in this project, morality is a collection of biological and cultural mechanisms that help people to cope with problems of cooperation, such as kin selection, coordination, social dilemmas, and conflict resolution. The MAC theory predicts that behaviors perceived as solutions to cooperative problems will be regarded as morally good and those perceived as detrimental to cooperation will be perceived as immoral (Curry, Mullins et al., 2019). MAC postulates the existence of seven moral

domains, adequate to adaptive challenges associated with cooperation: Family, Loyalty, Reciprocity, Heroism, Deference, Fairness and Property (Curry, Mullins et al., 2019). Research shows that appealing to these values may change peoples' cooperative intentions and behaviors (Misiak et al., 2023). Here we consider the possibility that abortion is perceived by some as a violation of cooperative principles, motivating moral outrage.

Past research has sought to explain judgments of abortion based on the Moral Foundations Theory (Koleva et al., 2012; Jonason et al., 2022; Paruzel-Czachura et al., 2022), which does not seek to ground moral responses in concerns about cooperation. Those who condemn abortion were found to be more sensitive to violations of Purity—values that are assumed by MFT to be based on the emotion of disgust, especially regarding social contaminants, like spiritual corruption or inability to control impulses (Haidt, 2012). Morality-as-cooperation does not treat Purity as viable moral domain (see: Curry, Mullins et al., 2019). Also, based on games theoretic assumptions it provides four additional moral domains (Family, Reciprocity, Heroism and

Property) which may further our understanding of the relationship between morality and attitudes towards abortion.

Our studies are based on the assumption that fundamental moral values, as conceptualized by the MAC theory, can shape both political orientation and support for abortion. They easily trigger affective processes (Misiak et al., 2023), have their specific neurobiological underpinnings (Marczak et al., 2019) and are heritable (Zakharin & Bates, 2022). Such a strong biological predisposition suggests that moral values have greater potential to influence political orientation than vice versa. Abortion judgments also serve as identity markers (Kahan, 2015), arousing moral concerns about group alignment. Establishing which moral concerns are most closely involved in anti-abortion beliefs and behaviours is therefore relevant to understanding wider political problems such as polarization and intergroup conflict worldwide.

### **Study 1**

Our first study set out to establish whether moral values were associated with conservatism and whether this in turn

predicted anti-abortion attitudes. It aimed to provide a proof of concept and set the stage for subsequent confirmatory study – we did not test any specific hypotheses. Following the recommendation of Simmons, Nelson, and Simonsohn (2011), we report how we determined our sample size, all data exclusions, all manipulations, and all measures in both of our studies.

## Methods

### *Participants*

We distributed our questionnaire through social media, using the snowball sampling method. The citizens of Poland that took part in the study consisted of 92 women ( $M$  age = 27.9,  $SD$  = 10.3) and 100 men ( $M$  age = 38.7,  $SD$  = 13.2). We aimed to gather a sample of at least 164 people to conduct correlation analyses with 80% power, an alpha level of .05 and a potential correlation coefficient of 0.25. The study design was accepted by the Institutional Ethics Committee. Participation was voluntary and each participant provided informed consent. The study instruction included a trigger warning that the content of the study includes questions about sexuality, violence, and abortion—people who felt that this might

be disturbing were advised not to take part in the study.

### *Moral Values*

Moral values were tested by the Relevance scale of the Morality-as-Cooperation Questionnaire (Curry, Jones Chesters et al., 2019). The participants were presented with a list of items asking them to rate the relevance of certain conditions to their moral judgments of a given behavior, e.g., “whether or not someone was brave”, or “whether or not someone acted to protect their family”. Twenty-two items, presented in random order, were answered on a scale from 0 (*not relevant at all*) to 7 (*absolutely relevant*). The items measured the relevance of each of the seven categories of morality—three per category. One question was unrelated to morality and served as an attention check. The Polish version of the questionnaire, both Relevance and Judgment scales, are available in the Supplement (Table S1).

### *Conservatism*

We measured conservatism with a single item. The participants were asked how they perceive their political attitudes on social

issues (1 – *Definitely liberal*; 10 – *Definitely conservative*).

### ***Moral Judgments of Abortion***

To test people's moral sensitivity to abortion issues we asked the participants to respond to four different cases of abortion and rate whether they think they are morally acceptable (0 – *absolutely morally unacceptable*, to 7 – *absolutely morally acceptable*). Participants were asked whether their personal moral system permits to terminate pregnancy in four cases: (1) abortion on request, 2) abortion when a pregnancy poses a serious threat to a woman's life or health, 3) abortion in a case of pregnancy resulting from rape, and 4) abortion in a case of established severe and irreversible fetal abnormalities.

### ***Statistical Analysis***

We performed confirmatory factor analysis to verify whether the structure of Morality-as-Cooperation categories replicates

and reliability analysis for each MAC factor and abortion judgments. After that, we performed a structural equation model to verify whether moral judgments of abortion were predicted by conservatism and Morality-as-Cooperation moral values. Latent variables were constructed for each scale, except for conservatism which was measured with a single item. To verify model fit we calculated CFI, RMSEA and SRMR. In addition to direct effects, we tested indirect effects. Structural equation modelling was performed with Rstudio (Rstudio Team, 2021) and the *lavaan* package (Rosseel, 2012). Data and code are available online (<https://osf.io/vxc4d/>).

### **Results**

Descriptive statistics and reliability analyses for the constructs used in the study are presented in Table 1. The correlation matrix for these variables is presented in Table S2 in the Supplementary material.

**Table 1***Descriptive statistics and the results of reliability analyses for the constructs used in Study 1*

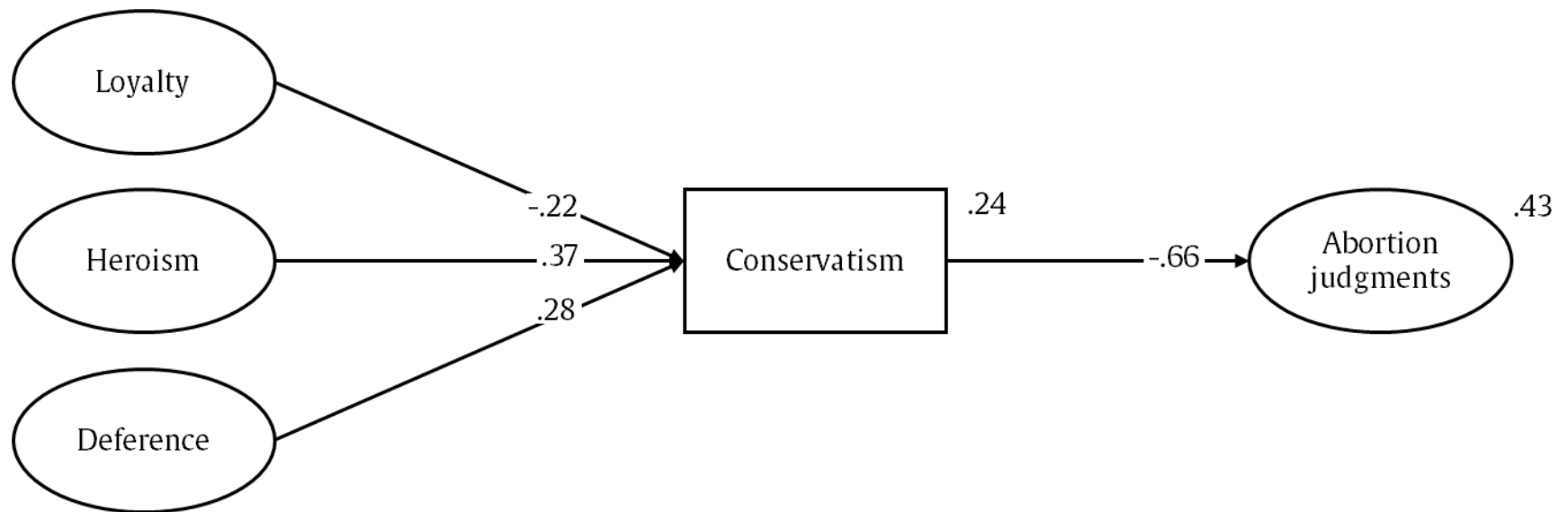
Construct	M (SD)	Skewness	Cronbach's $\alpha$
Conservatism	4.71 (2.61)	0.39	-
Abortion judgments	5.28 (1.66)	-0.93	.87
Family (MAC)	5.53 (1.28)	-1.11	.81
Group (MAC)	5.09 (1.27)	-0.69	.85
Reciprocity (MAC)	5.82 (1.00)	-1.16	.70
Heroism (MAC)	4.91 (1.51)	-0.67	.86
Deference (MAC)	4.16 (1.36)	-0.26	.76
Fairness (MAC)	4.80 (1.14)	-0.42	.65
Property (MAC)	5.94 (0.97)	-1.10	.77

Confirmatory factor analysis on MAC categories of morality confirmed the structure proposed by Curry and colleagues (2019): CFI = .93, RMSEA = .063, SRMR = .055. The structural equation model predicting attitudes towards abortion with the mediating role of conservatism fitted the data well (CFI = .94, RMSEA = .05, SRMR = .06). Insignificant paths were removed, and this had a positive effect on model fit (first MAC model: AIC = 16425, ECVI = 3.05, second MAC model: AIC = 9312, ECVI = 0.80). The second model, which better

reflected the data (CFI = .99, RMSEA = .03, SRMR = .04) is presented in Figure 1. We found that harsher moral judgments of abortion were predicted by more conservative political attitudes ( $\beta = -.66$ , 95% CI [-.45, -.26]) and we found no direct effects of MAC categories. However, conservatism fully mediated the relationships of Group (indirect effect:  $\beta = .14$ , 95% CI [-.03, .29]), Heroism (indirect effect:  $\beta = -.24$ , 95% CI [-.37, -.99]) and Deference (indirect effect:  $\beta = -.17$ , 95% CI [-.35, -.06]) categories with moral judgements of abortion.

Figure 1

Effects of Morality-as-Cooperation dimensions and conservatism on moral judgements of abortion



Notes. Standardized parameters. The percent of explained variance ( $R^2$ ) is presented in the top right corner.



## Discussion

In this study, we found that moral values explained conservative-liberal differences in moral attitudes towards abortion. Higher sensitivity to violations of moral values of Heroism and Deference predicted higher conservatism, which in turn predicted harsher moral judgments of abortion. It could be that some people saw abortion as an act of cowardice and those who were sensitive to violations of Heroism judged abortion as more immoral. Similarly, abortion could be seen as an act of disobedience to authorities (e.g., religious authorities, or in the case of Poland, also the government). Those who were sensitive to violations of Deference were, therefore, more likely to judge it as immoral. Interestingly, higher sensitivity towards violation of Loyalty led to lower conservatism and less harsh moral attitudes toward abortion. This particular result might be counterintuitive, as previous research on moral attitudes on abortion suggested that higher sensitivity to violations of Loyalty predicted harsher abortion attitudes (Koleva et al., 2012).

The main strength of the current study is in its novel conceptual framework that allowed to observe the mediating role of conservatism in the relationship between moral attitudes on abortion and the domain of Heroism: a category of cooperation that forms the basis of dominance hierarchies (Maynard Smith & Price, 1973). Conservatism, however, is only a label for a set of beliefs on the workings of the ways society functions (and how it *should* function). Whether someone identifies with this set of ideas, however, is not accidental – people with certain psychological characteristics are much more likely to adhere to these beliefs.

## Study 2

In Study 2 we aimed at replicating results from Study 1, but we decided to introduce more nuanced psychological measures that reflect different components of conservatism: social dominance orientation, identity fusion and disgust sensitivity. We additionally wanted to verify whether the perception of a fetus mediates the relationship between moral values and abortion.

Social Dominance Orientation (SDO) is an individual preference for social hierarchy

(Pratto et al., 2014). People who are oriented toward social dominance strive to preserve social hierarchies, display acceptance of legitimizing myths and generally approve of group-based dominance in society (Pratto, et al., 1994). Conservatism is a political attitude that favors social dominance (Sinn & Hayes, 2018) and people who are highly oriented towards social dominance were also shown to condemn abortion (Osborne et al., 2009).

Another useful concept for understanding morality and political group alignment is identity fusion (Muzzulini et al., 2021). To understand how group alignment influences abortion moral attitudes, we decided to measure peoples' identity fusion with Polish Catholics. Catholic Church represents the most dominant religious denomination in Poland, and its influence on policy sustained restrictive abortion laws (Calkin & Kaminska, 2020). Although religiosity has been associated with both conservatism (Malka et al., 2012) and moral condemnation of abortion (Barkan, 2014), the psychological mechanism that makes religious people condemn abortion is not clear. We hypothesized, that this relationship could be

explained by identity fusion—a deep and visceral feeling of oneness with a group (Swann et al., 2012). It has been shown that individuals that are more fused with their religious groups are more likely to act prosocially towards their group and be hostile towards the outgroup (Besta et al., 2014; Whitehouse, 2018). What is especially important in the context of our study, individuals may fuse with the group based on abstraction, like a common cause or important value (Swann et al., 2012). Opposition to abortion is a fundamental doctrine in Catholic Church and as such may be especially important for the Poles who are highly fused with Catholic Church.

Conservatism is associated with disgust sensitivity – individuals who are easily disgusted are more likely to represent conservative political views (Inbar et al., 2012). It has been suggested that this link could be explained by sexual strategies (individuals that are more disgust sensitive follow a more monogamous strategy to mitigate against pathogens transmitted during sexual contact and conservative political orientation secures their sexual interests; Tybur et al., 2015) and by traditional values (disgust sensitive individuals

might find traditional rules and rituals more appealing as they are restrictive and therefore minimize pathogen exposure; Tybur et al., 2016). Furthermore, there is evidence that people who are more sensitive to disgust are also condemning abortion more (Sanyal et al., 2021).

Differences between liberals and conservatives were also tried to be explained by differences in perception of the preborn (MacInnis et al., 2014; Bilewicz et al., 2017). The results were not conclusive, so we decided to further explore this link.

We tested two general hypotheses. Firstly, we hypothesized that people who are more conservative (have greater social dominance orientation, greater identity fusion with Polish Catholics, greater disgust sensitivity, and greater acknowledgement of the fetus's moral status) will judge abortion as less moral. Secondly, we wanted to confirm the conclusions of Study 1, that people who value Heroism and Deference more are more condemning, and those who value Loyalty are more permissive towards abortion.

## **Methods**

We preregistered the hypotheses, methods, and analyses for this study (hidden for blind review). Data and code used for the analyses are available online (<https://osf.io/vxc4d/>). The study complied with the Declaration of Helsinki on Biomedical Research Involving Human Subjects and was approved by the Institutional Ethics Committee. Similarly, to the previous study, the instruction included a trigger warning. After giving consent, participants attended the Qualtrics survey where the questionnaires were presented in random order. At the end of the survey respondents were asked to share a link in their social media.

## ***Participants***

The sample size was determined by our budgetary constraints, which allowed us to gather a sample of 300 respondents. We promoted the online study in social media until we reached the desired sample—because of the snowballing effect, we gathered responses from 333 people. We had to exclude data from six participants as they failed to correctly respond to a control question (“move slider to the middle of the scale”). The final

sample consisted of 188 men (age  $M = 28.1$ ;  $SD = 9.94$ ), 128 women (age  $M = 33.7$ ,  $SD = 9.53$ ) and 11 people who did not identify themselves as men or women (age  $M = 26.0$ ,  $SD = 9.28$ ).

The sensitivity analysis performed in G\*Power indicated that with a sample of 327 people and an alpha level of .05 we were able to test correlational hypotheses with 95% power. Also, the size of our sample was greater than 200 participants, which is a popular rule of thumb for estimating minimal sample size in SEM research (Gerbing, & Anderson, 1985). It could be argued that the sample size for our model is too small, considering 71 parameters used in the final model (Deng et al., 2018). However, we built our model step by step, from simple mediation analyses with much fewer parameters. The final model converged properly, reflected previous steps and conceptually reflected the Study 1 model. Also, following the recommendations provided by Rosseel (2020), to avoid Type I error, we did not treat the chi-square test statistic as an indicator of model fit but used indicators that are more suitable for smaller samples, like SRMR.

To control the sample diversity, we asked a question regarding political attitudes and religiosity (political attitudes – same as in Study 1; religiosity – “Please, estimate your level of religiosity. 0 – not religious at all; 100 – extremely religious”). The scores for religiosity ( $M = 35.2$ ,  $SD = 31.7$ , skewness = 0.37) and conservatism ( $M = 39.5$ ,  $SD = 31.7$ , skewness = 0.48) suggest that the sample was not homogenous regarding these characteristics.

### ***Moral Values***

In Study 2, we applied an extended version of the Morality as Cooperation Questionnaire, which contains both Relevance and Judgement items and enabled us to take a more detailed measurement of moral values, than the Relevance Scale alone used in Study 1.

After responding to the MAC Relevance questionnaire, the participants were asked to decide to what extent they agree with presented statements concerning moral values, e.g., “you should always be loyal to your family”, or “everyone should be treated the same”. People responded to the Judgment questionnaire on a slide scale: 0 – *absolutely disagree*, to 100 – *absolutely agree*. The Polish version of the questionnaire, both Relevance

and Judgment scales, are available in the Supplement (Table S1).

### ***Social Dominance Orientation***

Social Dominance Orientation was measured with the Polish version of the 4-item Short Social Dominance Orientation Scale (Pratto et al., 2013). Four items, indicating people's attitudes towards social hierarchies, e.g., "Superior groups should dominate inferior groups", were answered on a slide scale from 0 – *Disagree*, to 100 – *Agree*. The scale was coded so the higher score indicates a more positive general orientation toward social hierarchy.

### ***Identity Fusion with the Group of Polish Catholics***

Identity fusion with Polish Catholics was measured by a scale inspired by Fredman and colleagues' research on Identity Fusion with Judaism (2017). Items, e.g., "Polish Catholics are me", or "I am strong because of Polish Catholics" were answered on a slide scale from 0 – *Disagree*, to 100 – *Agree*. The scale was adapted from the original Identity fusion scale (Gómez et al., 2011) and was translated from English to Polish and back – the Polish and English versions are available in the Supplementary material (Table S3). The

higher the fusion scores, the deeper respondent's bond with the group of Polish Catholics.

### ***Disgust Sensitivity***

Disgust sensitivity was tested by the 12-item Disgust Propensity and Sensitivity Scale (DPSS-R; van Overveld et al., 2006). The scale was translated to Polish and then back-translated to English to evaluate the equivalency of the Polish version. Participants rated each statement, e.g., "I avoid disgusting things" or "I experience disgust" on a slide scale from 0 – *Disagree*, to 100 – *Agree*. A higher respondent score means higher disgust sensitivity. The Polish translation of the scale is available in the Supplementary material (Table S4).

### ***Perception of the Preborn***

To measure participants' attitudes towards the moral status of a preborn, they were asked to rate three statements, deciding to what extent, from 0 – *Disagree*, to 100" – *Agree*, the moral rights of the preborn are the same as the moral rights of humans already born. We included this scale because of a study by MacInnis and colleagues (2014), who hypothesized that the humanization of a

preborn may explain why conservatives and liberals differ in their judgements towards abortion. However, we decided to develop our own method because we were concerned that the questions used in the original study, which concerned zygotes, embryos and fetuses, were too technical – people might have difficulty imagining the real differences between these stages of development. To avoid this problem, we developed questions that dealt with distinct stages of prenatal human development: the development of the nervous system or the ability to feel pain. These items are presented in the Supplementary Material (Table S5). The higher the score, the more the participant is convinced that a preborn should have the same moral rights as a human already born.

### ***Moral Judgments of Abortion***

Moral judgments of abortion were measured with the same method as in Study 1.

### ***Statistical Analysis***

The first hypothesis concerned the psychological constructs associated with conservatism and their negative association with permissive moral judgements towards abortion. The second hypothesis, which was central to this study, concerned the

relationship between moral values, and abortion moral judgments. To test both hypotheses at once, we performed structural equation modelling to test if MAC types of morality predict abortion judgments and whether these relationships are mediated by social dominance orientation, identity fusion with Polish Catholics, disgust sensitivity and attribution of moral rights to a preborn. The detailed description of model inference is described in Supplementary Material (SM1).

Two of our models did not converge properly (disgust sensitivity and preborn moral rights). To verify the first hypothesis regarding these measures, we conducted analyses of correlation (this step was not preregistered as we did not expect that the models might not converge). Structural equation modelling with a maximum likelihood estimator was performed with *lavaan* package for Rstudio (Rosseel, 2012).

### **Results**

Descriptive statistics and reliability analyses for the constructs used in the study are presented in Table 3. Confirmatory factor analysis regarding MAC and including both Relevance and Judgment scales did not support

the theoretical construct (CFI = .764, RMSEA = .078, SRMR = .086). However, when analyzed separately, the Relevance scale (CFI = .93, RMSEA = .068, SRMR = .056) fitted the data and supported the theoretical structure of MAC. The fit indices were better than for the Judgment scale (CFI = .88, RMSEA = .073, SRMR = .073). Because of a better fit, and to keep the consistency between methods used in Studies 1 and 2, we decided to use only the Relevance scale. Correlations between variables are presented in Table S4 in the Supplementary material. They demonstrated that Conservatism, in line with our assumptions, correlated positively with Social Dominance Orientation, Identity Fusion with Polish Catholics, Perception of the Preborn, and Disgust Sensitivity (although this correlation was rather low).

#### ***Model Fit and Structural Equation Model***

The detailed procedure for fitting the model is described in the Supplementary

material (SM1). To sum up, we found that models with social dominance orientation and identity fusion with Polish Catholics as mediators of the relationship between MAC types of morality and abortion moral judgements fitted the data well, whereas the model that included disgust sensitivity as a mediator did not converge properly and the model that included disgust sensitivity as a predictor of MAC types of morality did not fit data well. An additional model, with single-item Conservatism as a mediator, which followed the same modelling procedures was structurally replicated. In the final model, which is presented in Figure 2, we included MAC moral values that were associated with moral judgments of abortion (Family, Loyalty, Heroism, Deference), as well as SDO and IF as mediators. The model fitted data well (CFI = .950, SRMR = .055, RMSEA = .061).

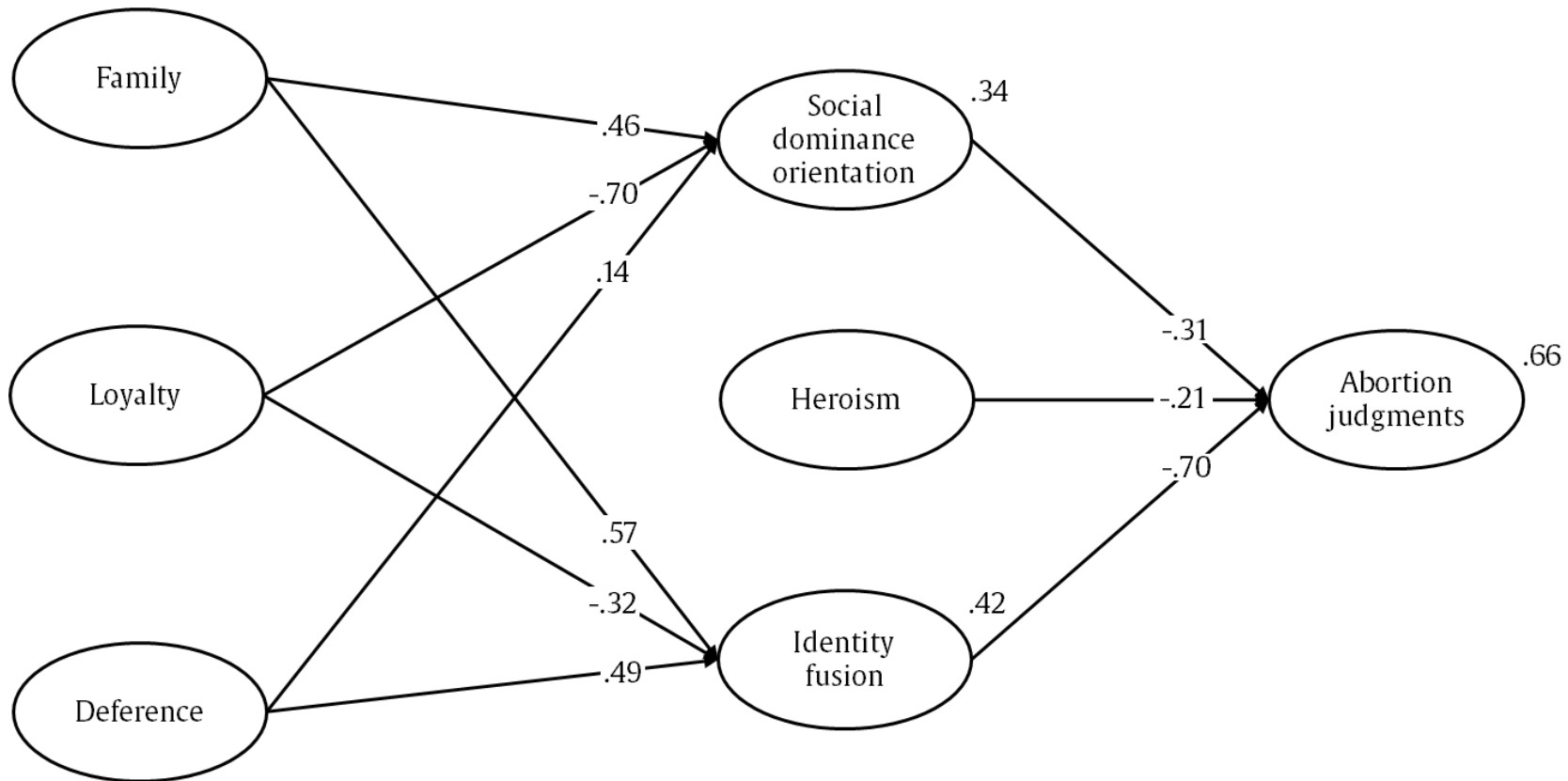
**Table 3***Descriptive statistics for Study 2*

	M (SD)	Skewness	Cronbach's $\alpha$
Conservatism	39.5 (31.7)	0.37	-
Religiosity	35.2 (37.4)	0.48	-
Abortion	68.3 (36.2)	-0.80	.93
SDO	27.1 (22.3)	0.68	.71
IF	20.9 (29.0)	1.26	.96
Disgust	32.7 (17.5)	0.58	.86
Preborn rights	42.1 (42.9)	0.39	.99
Family	61.3 (28.1)	-0.47	.88
Group	63.8 (24.1)	-0.56	.80
Reciprocity	74.3 (21.0)	-1.02	.78
Heroism	55.8 (28.8)	-0.28	.87
Deference	41.7 (27.9)	0.35	.81
Fairness	62.1 (22.9)	-0.42	.72
Property	70.0 (25.6)	-0.90	.86



**Figure 2**

*Effects of Morality-as-Cooperation dimensions, Social Dominance Orientation and Identity Fusion with Polish Catholics on moral judgments of abortion*



*Notes.* Standardized parameters. The percent of explained variance ( $R^2$ ) is presented in the top right corner. All p-values <.001, except of: SDO - Deference p = .039 and IF - Loyalty p = .005

Harsher moral judgments of abortion were directly predicted by increased social dominance orientation ( $\beta = -.19$ , 95% CI [-.44, -.17]), increased level of identity fusion with Polish Catholics ( $\beta = -.66$ , 95% CI [-.81, -.59]), and the moral category of Heroism ( $\beta = -.17$ , 95% CI [-.33, -.11]).

Social dominance orientation and identity fusion with Polish Catholics mediated relationships between Family, Loyalty and Deference moral values and abortion judgments. People who judged Family values as personally relevant were more oriented toward social dominance ( $\beta = .53$ , 95% CI [.29, .62]; indirect effect:  $\beta = -.10$ , 95% CI [-.22, -.06]) and were more fused with the group of Polish Catholics ( $\beta = .45$ , 95% CI [.40, .79]; indirect effect:  $\beta = -.29$ , 95% CI [-.56, -.27]). People who judged Loyalty as personally relevant were also less oriented toward social dominance ( $\beta = -.71$ , 95% CI [-.91, -.49]; indirect effect:  $\beta = .13$ , 95% CI [.11, .32]) and were less fused with the group of Polish Catholics ( $\beta = -.19$ , 95% CI [-.51, -.08]; indirect effect:  $\beta = .13$ , 95% CI [.05, .36]). People who judged Deference values as personally

relevant were more oriented toward social dominance ( $\beta = .21$ , 95% CI [.05, .30]; indirect effect:  $\beta = -.04$ , 95% CI [-.10, -.01]) and were more fused with the group of Polish Catholics ( $\beta = .41$ , 95% CI [.36, .69]; indirect effect:  $\beta = -.27$ , 95% CI [-.49, -.24]).

The modelling did not allow testing hypotheses regarding disgust sensitivity and the perception of moral rights of the preborn. However, the correlation coefficients (Table S6) were sufficient to support the hypothesis. People who had greater disgust sensitivity ( $r = -.15$ ,  $p = .010$ ) and those who had a stronger perception of the moral rights of the preborn ( $r = -.79$ ,  $p < .001$ ) judged abortion as less morally acceptable.

## Discussion

In Study 2 we replicated and extended findings from Study 1. As before, we found that people who valued Heroism and Deference were more likely to condemn abortion, and those who valued Loyalty judged abortion more permissively. Furthermore, we found another moral domain that explained abortion judgments: those who were sensitive to violations of Family judged abortion more

harshly. The additional analyses replicated the exact same structure as in Study 1 (Figure 1, Figure S1), supporting the reliability of the previous results. The main improvement of the study, compared to Study 1, concerns detailing psychological processes associated with conservative political orientation. Moral values, except for Heroism, were mediated by social dominance orientation and identity fusion with Polish Catholics. Our model did not include disgust sensitivity, as the model did not converge properly. However, according to simple correlations, we were able to support our hypotheses that those who were more sensitive to disgust were also more condemning of abortion and those who attributed moral rights to a preborn were opposing abortion very strongly.

### General Discussion

In two studies we verified whether the moral judgment of abortion is associated with moral values, as defined by a novel conceptual approach to morality: Morality-as-Cooperation (Curry, Mullins et al., 2019). We found that conservatism and associated psychological constructs mediate the

relationship between abortion moral judgment and four moral domains: Family, Loyalty, Heroism, and Deference.

Among the moral domains, Heroism was the strongest predictor of moral condemnation of abortion. This relationship was mediated by conservatism in Study 1 and was directly associated with abortion moral judgments in Study 2. People who value Heroism more are those who are more likely to regard reliable displays of dominance and bravery as virtues, and acts of cowardice and miserliness as vices (Curry, Chesters et al., 2019). If abortion was condemned more by those who value Heroism, it could be that they saw it as an act of cowardice, or as a display of irresponsibility (Bernstein & Manata, 2019). There is, however, a second explanation. In many cases, bringing a child into the world requires an immeasurable amount of sacrifice on the part of the parents, especially when the family is struggling financially. Those who valued Heroism could simply see abortion as a shortcut or a *failure* to act heroically. Our study was not intended to provide such detailed explanations, but these two scenarios may be the next step worth testing in future research

on morality and abortion. No matter which explanation is accurate, this finding discredited an alternative association of Heroism values with abortion judgments: people who value Heroism might see people that decide to have an abortion as brave because a decision to have an abortion is hard and it might be followed by social ostracism. We believe that this finding is a major theoretical advancement regarding understanding moral judgments of abortion—previous conceptualizations of morality did not recognize Heroism as a viable moral domain and were, therefore, unable to detect this relationship.

People who valued Deference were also morally condemning abortion more. Those who valued Deference more were more oriented toward social dominance and more fused with Polish Catholics. People who value Deference more, are more likely to regard humility and obedience as virtues and disrespect and hubris as vices. It could be that they interpreted abortion as an act that destabilizes social hierarchy (which could be interpreted as such, regarding massive anti-government protests in Poland) and that may be against religious authorities and God (this

might also be true, as Catholicism in its' core forbids abortion). This finding reflects the results of studies conducted with Moral Foundations Theory, where values of Authority, which are conceptually very similar to MAC Deference, were also associated with abortion condemnation (Koleva et al., 2012, Paruzel-Czachura et al., 2022).

In the second study, we found that those who valued Family more were also more condemning abortion. This link was mediated by increased social dominance orientation and increased identity fusion with Polish Catholics. According to these results, abortion could be seen as hurtful towards family, for example by being perceived as infanticide. This interpretation is certainly sustained by Catholic Church, which like other great religions promotes reproduction among its members (Lang & Kundt, 2020). The link with social dominance orientation is less obvious. Previously, however, social dominance orientation was associated with a preference for traditional gender roles (Huang et al., 2016), which are tightly associated with a nuclear family model, which dominates in Poland. It could be that sensitivity to violations of Family

and SDO share a common factor—preference for a traditional family model. This could explain abortion condemnation, as it is not a traditional method of family planning in Poland.

Surprisingly, in Study 1 we found that people who valued Loyalty were less conservative and more permissive towards abortion. We replicated this finding in Study 2, finding that relationship between Loyalty and more permissive moral judgments was mediated by lower social dominance orientation and lower identity fusion with Polish Catholics. These findings were counterintuitive, as Loyalty was typically associated with a conservative worldview, and condemnation of abortion (Koleva et al., 2012). We believe that this finding demonstrates a powerful effect of situational context on the way moral values are translated into particular political worldviews. Although this finding may seem surprising, it is absolutely coherent with the contemporary understanding of moral psychology, which pictures morality as a set of different psychological domains that have personality-like stable characteristics (Haidt, 2012; Curry, Chesters et al., 2019).

When it comes to Loyalty, the social context in which we live may sway our moral intuitions towards different groups. For example, if we are affiliated with a religious organization that starts to harm us, or our families and friends, we might redirect our sympathies towards other groups that are more favorable toward us – without changing our moral sensitivity to loyalty. Let a metaphor illustrate this—our sense of taste allows us to recognize five basic tastes. We can be extremely gluttonous for sweets and eat the same lollipops every day. If one day we stop eating them and start eating candy bars, this does not mean that our preference for sweets has subsided. Just like lollipops, candy bars contain sugar. And just like certain groups, other also contain similar social benefits that Loyalty-sensitive people might seek (e.g., social support and a sense of identity).

Our studies were conducted after massive pro-abortion protests that were sparked by the ruling of the Constitutional Tribunal. Poles could have interpreted the ruling as oppressive towards Polish people and especially Polish women, thereby recognizing this as an action detrimental to the group. The

negative relationship with SDO pictures Loyalty as an egalitarian phenomenon. It was apparent in the case of protests in Poland, as they were organized to oppose the ruling that infringed on women's rights. Also, people who were valuing Loyalty were less fused with the group of Polish Catholics. In the case of protests in Poland, Catholic Church was seen as one of the main oppressors, that supported the Polish conservative government (Calkim & Kaminska, 2020). This finding is in line with the fusion-plus-threat explanation for strong pro-group attitudes involving outgroup derogation (Buhrmester et al., 2018; Whitehouse, 2018).

### Limitations and Future Directions

Our project aimed at testing the mediating role of disgust sensitivity and perception of preborn moral rights. We could not fit these psychological constructs into our predefined structural equation models and decided to test the hypotheses with correlation coefficients. We found that people who are more sensitive to disgust judged abortion as more immoral, but this relationship was rather weak ( $r = -.15$ ). We recommend further studies exploring the link between moral judgments and disgust to consider the size of this effect.

Regardless of whether Purity is theoretically valid or not, research shows a strong correlation between Purity measures and moral judgements of abortion. If Purity was strongly related to disgust sensitivity, we might expect it to also be strongly related to abortion judgements. A recent publication by Fitouchi, André and Baumard (2022) explicitly challenges this assumption, arguing that *impure* behaviors in fact signal peoples' propensity to cooperate by demonstrating their ability to resist their short-term impulses. They concluded that behaviors that elicit Purity condemnation rarely actually carry a pathogen risk—abortion also does not fit into the category of pathogen-infecting behaviors. The publication by Fitouchi, André and Baumard (2022) came after we had already preregistered our study and after we had written our first draft. This study, however, supports their hypothesis by showing that disgust sensitivity is marginally associated with moral judgements about abortion.

The relationship between moral judgments of abortion and the perceived moral right of a preborn was very high ( $r = -.79$ ) and it also prevented us to include it in the

model as these variables were almost the same. Importantly, we decided to use less scientific terms (e.g., embryo, zygote) and refer to more easily understood stages of prenatal development, like the ability to feel pain or the development of the nervous system (MacInnis et al., 2014). We want to bring this to the attention of researchers, as we believe that lexical details in research on abortion may adversely affect the results.

In both studies, we warned the participants that the content contained the topics of physical harm, sexuality, and abortion. Although we wanted to minimize the exposure of these topics to people who might find them threatening to their mental health, we may have coincidentally missed some specific information. As the warnings were presented prior to the procedure, we do not have data on the self-excluded group. It is possible that their moral judgments of abortion might be shaped differently from those who took part in the study.

Our study demonstrates particular moral domains that may be especially useful in having a fruitful discussion between opponents and proponents of abortion. They

may inform communication strategies based on moral reframing – an effective strategy that is especially useful regarding polarized topics (Feinberg & Willer, 2019). For example, abortion discussion may be framed in the context of the Heroism domain. Is abortion an act of cowardice? Is having a baby in the face of serious socio-economic difficulties an act of heroism? Addressing these kinds of arguments might be more effective in changing people's perspectives on abortion rather than trying to use more popular, but probably less persuasive messages (e.g., “my body, my choice” – which is based on the Property moral value). Messages based on Morality-as-Cooperation have already been shown to influence peoples' intentions and behaviors (Misiak et al., 2023), and it would be interesting to see whether they can be helpful during political discussions.

### **Conclusion**

Our studies demonstrated the importance of moral values in explaining why conservatism is associated with moral judgments of abortion. We found that conservatism, and psychological phenomena associated with it (social dominance orientation and identity fusion with Polish Catholics), mediate the

relationship between Family, Loyalty, Heroism and Deference. People who valued Family, Heroism, and Deference values were more condemning of abortion. Interestingly, those who valued Loyalty were more permissive towards abortion—we believe it is a consequence of massive solidarity protests that took place in Poland in reaction to

introducing restrictive abortion law. Recognizing the psychological foundations of divergent political orientations is a necessary first step in fostering greater mutual understanding between people who align with opposing ideologies and preventing the more harmful effects of polarization.

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