Beyond Misogyny: Sexual Morality and Sanctity of Life predict Abortion Attitudes

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Abstract

Abortion as a problem can be construed from different perspectives, leading to different research questions. Most research on abortion attitudes has focused on testing predictors consistent with a pro-choice narrative, such as religiosity, political conservatism, and misogynistic beliefs. We examine those predictors, but also introduce predictors consistent with a pro-life view: beliefs about the sanctity of human life and moral concerns about sexuality. Using data from 5 samples ($n = 5,717$), we found that sanctity of life and sexual morality were stronger predictors of abortion attitudes than sexism and religiosity. We ran structural equation models to explore relationships between predictors, suggesting that sexism provides limited predictive value for abortion attitudes in comparison to sanctity of life and sexual morality. We discuss the value of generating hypotheses from ideologically opposing views to increase our understanding of psychological phenomena.

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Beyond Misogyny: Sexual Morality and Sanctity of Life predict Abortion Attitudes.

Abortion is one of the most controversial issues in political and moral debate today. Yet there is not a clear, unique narrative to describe what abortion is *about* (Sanger, 2017). Supporters and opponents of voluntary interruption of pregnancy have developed alternative construals of the issue, usually consistent with wider and more comprehensive ideological narratives (Tan, 2004). Is it abortion about women's rights? Is it about taking a life? Is it about sexual promiscuity/liberation? Due to this complexity, it is possible for researchers to, implicitly or explicitly, privilege one set of constructs, failing to consider constructs highlighted by other narratives. Instead, we believe that research on the psychological underpinnings of abortion attitudes would benefit from consideration of a wider spectrum of potential correlates and constructs.

In this article, we review recent research that has chiefly relied on sexism or attitudes toward gender equality as the most important attitudinal predictor of abortion. In this paper, we identify two additional predictors drawn from pro-life narratives of the abortion debate that are usually overlooked: sanctity of life and sexual morality. Although some past research has studied the connection of these constructs with abortion attitudes, less attention has been devoted to the question of how they relate to each other (Adamczyk et al., 2020). In three studies and five samples, we examine how each one of these perspectives contributes to the understanding of abortion attitudes and contrast potential attitude structures.

Predicting Abortion Attitudes

Why do some people believe that abortion is morally wrong, and others believe it is morally acceptable? This question has been asked repeatedly by social scientists. A vast array of studies has studied how *demographic* characteristics, such as age, marital status, education or gender, are associated with abortion attitudes. However, in a foundational work, Cook and colleagues demonstrated these effects are mainly driven by *attitudinal* variables, such as religious beliefs or political ideology (Cook et al., 1992). Likewise, the rhetoric of abortion and anti-abortion advocates also provides some insights into which attitudes might drive views on termination of pregnancy. Here we review different attitudinal predictors of abortion attitudes discussed in the literature and, in the absence of empirical evidence, we present plausible predictors suggested by theory or by advocacy rhetoric.

Religion and Politics

Religiosity has been consistently studied as one of the most robust predictors of opposition to abortion policies (Adamczyk, 2013; Cook et al., 1992; Emerson, 1996; Harris & Mills, 1985; McIntosh et al., 1979). Adamczyk and colleagues (2020) reviewed 116 studies regarding abortion attitudes and found that religiosity was the most common attitudinal predicted studied (44%). Overall, people who report higher religious identification or more frequent religious practices tend to see abortion as morally wrong. These effects seem to be independent of both cultural factors and the particular religion professed, as studies on non-WEIRD samples show (Anthony & Sterkens, 2019; Jelen, 2014).

Political party identification, and *political and moral conservatism* have also been studied as predictor of abortion attitudes. Adamczyk et al's review (2020) found that 22% of the reviewed studies found a significant effect of politics. Typically, researchers find that right-wing or conservative political orientation predicts variance in opposition to abortion attitudes beyond

religiosity alone (Emerson, 1996; Harris & Mills, 1985). Moreover, Skitka and colleagues found different effects for political orientation, moral conviction and religiosity predicting abortion attitudes (Skitka et al., 2018). These findings point to the specifically political dimension of the abortion debate: a form of political tribalism where ingroup loyalty determines attitudes instead of ideological content. This body of evidence suggests that the political and religious aspects of the issue impact abortion attitudes through relatively independent paths.

Sexism

Beliefs about gender equality have been examined frequently in research about abortion attitudes, although to a lesser extent than religiosity and politics (6% of the studies reviewed by Adamczyk et al., 2020). The psychological construct that has been used most systematically to operationalize misogynistic attitudes is *Ambivalent Sexism* (Glick & Fiske, 1996), which involves two components: *Hostile Sexism*, which captures confrontational and blatant attitudes against women and *Benevolent Sexism*, the view which describes flattering and idealizing views of women, that, at the same time, depreciate and patronize them (Begun & Walls, 2015).

Osborne and Davies (2012) found different effects for two types of abortion: *traumatic* – in cases of rape, incest or health issues – and *elective* – for any reason the woman wants. Each type of misogyny predicts a different type of abortion: hostile sexism predicts opposition to elective abortion, whereas benevolent sexism predicts rejection of both traumatic and elective abortion. Building on these findings, authors argue that hostile sexist attitudes are associated with opposing women's right to make an autonomous decision over their bodies, while benevolent sexism reinforces women's social roles as mothers (Huang et al., 2014, 2016), often leading to opposition to abortion even in cases of medical necessity or rape (see also Petterson & Sutton, 2018). Hodson and MacInnis found that political differences in support for abortion in US

participants are fully mediated by sexist beliefs, yet effect sizes could not be replicated in a further study (Hodson & MacInnis, 2017; Prusaczyk & Hodson, 2018).

The notion that abortion attitudes could depend on people's misogynistic views is the commonsense explanation when the problem is seen from the perspective of women's rights. This construal of abortion highlights a woman's right to choose whether, when and how to be a mother, and is generally taken to support a view in which abortion should be available, not just for cases of rape or medical reasons (i.e., traumatic abortion), but also for women who do not consent in carrying a baby to term because of the personal, social and physical costs of the process (i.e., elective abortion). Belief in the rightful exercise of bodily autonomy inspires the "pro-choice" label preferred by defenders of abortion rights, and the position that sexism explains opposition to abortion is one of the most common arguments made by pro-choice advocates.

Sanctity of Life

The most common argument of abortion opponents, on the other hand, and the inspiration for the "pro-life" label this group prefers, is that the fetus is a living, human being and, therefore, the termination of pregnancy would constitute murder. This argument contains two premises. The first, an ontological one, is that the fetus is a living, human being. Both in public advocacy and in grassroots movements, pro-life rhetoric typically emphasize the living aspects of the preborn (Lowe & Page, 2018; Tan, 2004). The second premise, a moral one, is that human beings are always valuable entities by the very fact of belonging to the human species. Although the concept of Sanctity of Life (SoL) can be traced to religious origins (Baranzke, 2012; Kirchhoffer, 2016), it has deep secular roots, that is, claims of the absolute value of life are theoretically not based on religious beliefs, but in human nature and its dignity (George &

Tollefsen, 2008). The argument usually concludes in the blanket rejection of all types of termination of pregnancy, regardless of the circumstances that might surround its conception, development or expected life course, or how it may impact the mother's life project.

Interestingly, however, for a number of leading feminist philosophers, the ontological premise can be accepted without altering the conclusion: the fact that the fetus might be a fully human person does not mean that abortion is intrinsically wrong (Manninen, 2013; Thomson, 1976). Conceding the ontological premise centers the problem on the moral one: do the rights of the preborn trump the women's bodily autonomy?

To our knowledge, there are no psychological studies *directly* addressing SoL as a predictor of abortion variables. Measurement has been a key issue. A cross-religion study on Indian student samples, used three items to gauge SoL beliefs: "The value of a person depends on the appreciation given to him or her by others."; "The honour to be given to a person depends on his moral behaviour."; "Each human being should be recognized just because he is a human being, irrespective of credit or moral behaviour" (Anthony & Sterkens, 2019). The formulation of these items might not clearly tap the fundamental features of the construct, namely that human life is non-disposable and intrinsically valuable.

Some commentators have argued that SoL might be an elusive concept to capture with face-value questions, since it can be interpreted in multiple senses (Baranzke, 2012). A different approach is to examine support for other practices that might end a person's life, such as euthanasia, the death penalty, and suicide. This wider range of practices has been helpful for some researchers to *indirectly* address beliefs about SoL and their relation to abortion attitudes. Studies based on secondary analyses of large-scale datasets, such as the General Social Survey (GSS) or the World Values Survey, used a single-item measuring euthanasia attitudes as a proxy

for “respect for life” (Jelen, 1984, 2014; McCutcheon, 1987; Strickler & Danigelis, 2002).

Abortion attitudes were successfully predicted by this euthanasia measure, suggesting that respondents who are more likely to oppose euthanasia are as well more likely to oppose abortion.

Whether human life has an absolute, sacred value is at the core of the abortion discussion for pro-life advocates. However, beliefs in SoL have seldom been used to research the psychological underpinnings of abortion attitudes, and to our knowledge, no systematic work has been done on understanding how SoL is connected to other potential predictors of abortion attitudes.

Sexual Morality

The connection between abortion and sexuality is less well represented in abortion rhetoric than the previous factors considered. Although less often at the core of political debate, discourse associated with a moral view of sexual practices is often found in both supporters and opponents of abortion. Pro-choice advocates claim that women’s bodily autonomy includes not just the right to choose to terminate an unwanted pregnancy, but to lead their sexual lives without external constraints (Katz et al., 2017). Pro-lifers, on the other hand, often argue that the availability of abortion promotes increased promiscuity in sexual behaviors (Duerksen & Lawson, 2017). In both cases, ideological narratives on abortion would suggest a confluence of attitudes towards sexuality and termination of pregnancy.

Furthermore, there are theoretical reasons suggesting a connection between moral views about sexuality and abortion attitudes. Drawing from evolutionary principles, life history theory provides a framework to understand how organisms vary their mating and parenting efforts as a reaction to environmental pressures (Ellis, 1987). Those differences can be systematized within a

continuum from *fast* to *slow* life history strategies. In contexts of environmental stress (e.g., unpredictability and resource scarcity), fast life strategies attempt to increase the quantity of offspring, by maximizing mating opportunities and minimizing parental efforts. In contrast, stable ecologies promote slower life strategies, which prioritize offspring quality by maximizing parental investment (Del Giudice & Belsky, 2011). The theory predicts that activation of these strategies trigger downstream psychological effects in the motivational, cognitive and behavioral domains. Fast life strategists are more likely to display high-risk behavior and decision-making, including short-term sexual strategies (Figueredo et al., 2005). In attitudinal terms, slow life strategists are more likely to hold conservative views, be more religious, endorse individualizing and binding moral foundations and display more restricted sociosexual orientation, such as rejecting consensual non-monogamy (Gladden & Cleator, 2018; Mogilski et al., 2020; van Leeuwen et al., 2014).

Within this framework, we can hypothesize that less restricted views about sexuality should be linked to support for abortion (Pinsof, 2018; Weeden, 2003). A growing body of research have examined the association between sexuality and abortion attitudes. Analyses from the General Social Survey (GSS) data showed that pornography consumption has an impact on abortion attitudes through sexual liberalism (Wright & Tokunaga, 2018) as well as a relatively consistent effect of sexual morality – operationalized as the rejection of same-sex relationships, premarital sex or extramarital affairs – in predicting attitudes toward abortion (Jelen, 1984; McCutcheon, 1987; Strickler & Danigelis, 2002). A recent study found a robust effect of sexual morality on abortion attitudes, regardless of levels of hostile and benevolent sexism (Rye & Underhill, 2019). Using data from the World Values Survey, Jelen also found a cross-national effect of sexual morality on abortion attitudes (Jelen, 2014). In one of few studies based on a life

history framework, Weeden (2003) found that people's abortion attitudes were predicted by variables associated with short-term mating orientations – more sexual partners, earlier sexual initiation, fewer children and later childbearing. In a similar vein, Pinsof (2018) found that believing that strict abortion bans would reduce sexual promiscuity increases opposition to abortion for individuals with long-term mating strategies.

An association between abortion attitudes and normative views on sexuality is suggested by rhetorical stances of the abortion debate from both sides, as well as by life history theoretical framework. A handful of studies provide initial support for this hypothesized link. However, these studies rely mainly on secondary data analysis or in measurements that do not deal with the complexity of measuring abortion attitudes.

Possible Relationships among Predictors

How should we make sense of all these variables and their mutual relationships? In this section, we attempt to build models consistent with the empirical evidence, theoretical frameworks and with normative discourses about abortion, which often hold claims that can be interpreted in testable empirical questions. Based on these narratives, we decided to take the least explored predictors of abortion attitudes – sexism, sanctity of life and sexual morality – and generate theoretical models, identifying a specific driving factor that would explain the impact of the other variables on abortion attitudes.

[Insert Figure 1 about here]

Sexism: Abortion as Women's Rights

When the problem of abortion is construed from the framework of women's reproductive and sexual rights, normative views about gender equality and gender roles are believed to be the

primary driver of abortion attitudes. For instance, studies have shown how sexist views mediate between political orientation and abortion attitudes, supporting this approach (Hodson & MacInnis, 2017; Prusaczyk & Hodson, 2018). Similarly, Jelen and colleagues analyzed GSS data and showed how feminism predicts views on abortion through different paths than euthanasia, religiosity and moral concerns about sexuality (Jelen et al., 2002). Figure 1A displays a theoretical model of how the predictors could be affecting abortion attitudes through sexist beliefs. The model postulates that the effects of political orientation, religiosity, sexual morality and SoL are mediated by sexism.

Sanctity of Life: Abortion as disrespecting Human Life

SoL is the construct that has been least studied as an attitudinal predictor of abortion attitudes, so we must rely on normative statements specify how it might relate to the other concepts. Pope John Paul II's encyclical letter *Evangelium vitae* (the Gospel of Life) about "the value and inviolability of human life" is a relevant document to understand the scope and relationships of the concept of SoL. Systematizing centuries of philosophical and theological discussion, the document is mainly directed at discussing the immorality of any type of abortion, since it directly attacks human life. At the same time, the encyclical stresses that lack of respect for life is also closely connected to a "trivialization of sexuality [which] is among the principal factors which have led to contempt for new life. Only a true love is able to protect life." (John Paul II, 1995, sec. 97). Finally, the encyclical also takes into consideration the need to recognize gender complementarity and the specific contribution of women, in particular to their connection to motherhood.

Relying on these normative claims, we can compose a theoretical scheme of how abortion attitudes, SoL and other attitudes are connected. Figure 1B presents a visualization of these

connections. Attitudes toward abortion, according to this view, would depend mainly on how much people are convinced that life is an absolute, inviolable value. This valuation of life would explain potential connections between religion and abortion attitudes (religion promotes SoL which reduces support for abortion) as well as sexual morality and abortion (unrestricted, “trivial” sexuality leads to contempt of human life, increasing support for abortion). Finally, the affirmation of gender complementarity can be construed as a relationship between SoL and benevolent sexism, in particular complementary gender differentiation (e.g., “Women, compared to men, tend to have a superior moral sensibility”; Glick & Fiske, 1996). Based on this view, it can be hypothesized that the effect of religiosity, sexual morality and benevolent sexism on abortion attitudes is mediated by beliefs about the SoL. The normative rhetoric of SoL makes no clear predictions about hostile sexism nor political orientation, so they are kept as having a direct effect on attitudes towards abortion.

Sexual Morality: Abortion Attitudes determined by Reproductive Strategies

As discussed above, restricted moral views about sexual practices are interpreted by life history theorists as an indication of slow life strategy (Pinsof, 2018; Weeden, 2003). The literature has shown a vast net of correlates of slow life strategy upon which to build a testable model. Slow life strategists are normally more religious and more likely to identify themselves with conservatism (Gladden & Cleator, 2018; Petersen, 2018; Weeden et al., 2008). Furthermore, a recent study showed how fast life strategists are more likely to endorse hostile sexism attitudes, since orientation to short-term mating is associated with women objectification and dehumanization (Gladden et al., 2013). These findings help us build a model we display in Figure 1C. We hypothesize that sexual morality will mediate the effect of political orientation, religiosity, and hostile sexism on abortion attitudes. The model, however, does not make any

clear predictions on how benevolent sexism and sanctity of life might be mediated by sexual morality.

Our Research

In this article, we address the question of abortion attitudes from a broader perspective, emphasizing the contribution of attitudinal predictors derived from the pro-life advocacy narrative (sexual morality and SoL). We also address several shortcomings from prior research, especially in terms of measurement. Finally, we would like to contribute with an exploration of potential structures of attitudinal predictors of abortion attitudes.

In Study 1, we conducted a secondary analysis on GSS data from 1996 to 2016. This survey has been used as a source of data for multiple studies on abortion attitudes (Barkan, 2014; Jelen, 1984; Jelen & Wilcox, 1997; Jozkowski et al., 2018; Strickler & Danigelis, 2002; Weeden, 2003). Our first study was aimed to replicate, in a large-scale and with a more recent dataset, the general findings of abortion attitudes research. In Study 2, we collected data from three different sources (Internet users, MTurk workers and college students) and used more specific measurements to assess our variables of interests. Finally, in Study 3 we used an improved measurement of SoL and replicated the study in an international sample. Supplemental materials, data, codebook and scripts can be found in the online repository (peer-review anonymous version https://osf.io/39gt4/?view_only=04bcc452462f41a388171c15fa50f72c).

Study 1

Our first look into the predictors of abortion attitudes was through secondary analyses of large scale nationally representative datasets from the GSS. Featuring questions about abortion attitudes since the 1970s, has made this survey a popular and useful resource for researchers.

Adamczyk et al. estimated that about a third of all their reviewed studies were done analyzing data from the GSS (Adamczyk et al., 2020). The analyses presented here offer three novel features over prior studies on the same dataset. First, we adopted a more sophisticated statistical approach in constructing the variables, in particular the outcome of abortion attitudes. To our knowledge, all studies using the GSS data have taken an additive linear approach to the items asking respondents about their abortion attitudes (e.g., adding up scores from 7 dichotomous items “Yes” = 1, “No” = 0; Jelen et al., 2002). In contrast, we estimated item response theory-based models in order to extract weighted contributions of each one of the items. Second, we construct new composite scores based on our research questions that are not present in other studies. Finally, only a small number of studies have analyzed recent versions of the survey (1996 – 2016).

We hypothesized that abortion attitudes, as seen in the literature, will be predicted by political orientation and religiosity. Based on findings of Cook and collaborators, we expect sexism, SoL and sanctity of life to be significant predictors, and to explain variance of abortion attitudes to a larger degree than demographics, political orientation and religiosity (Cook et al., 1992).

Methods

Datasets

We retrieved GSS datasets ranging from 1996 to 2016. We used only items that were present throughout all versions of the survey, and only complete observations were considered, which yielded a sample of 4,732 adult American respondents (Female = 55%, $M_{AGE} = 46.52$, $SD_{AGE} = 16.91$, detailed descriptive statistics and zero-order correlations in Table S2).

Measures

Abortion Attitudes. The GSS datasets each included seven dichotomous questions regarding abortion in different circumstances (“Please tell me whether or not you think it should be possible for a pregnant woman to obtain a legal abortion ...”): defect of the baby, not wanting more children, woman’s health is endangered, being poor, child product of rape, being single and abortion for any reason at all. In contrast to other researchers using the same data, we assume that each item expresses the attitudes toward abortion to a different degree, and therefore they cannot express the same numeric amount. Prior research has shown that respondents vary in how much they endorse abortion as a function of the phrasing or the situation involved (Hans & Kimberly, 2014). For instance, it is more telling of someone’s pro-life attitudes to respond “No” in the case of abortion after rape, than responding “No” in the case of a single woman who does not want to be a mother.

Therefore, we constructed an Abortion measure index using Item Response Theory modeling (IRT). IRT models estimate the relative contribution of each item (difficulty) to the latent variable θ underlying the scale. Then, the model generates a standardized variable that allocate scores based on the responses given to each one of the items. This new variable displays more interpretable variance than the additive approaches to the scale. Using the R-package *mirt* (Chalmers, 2012), we ran a two-parameter logistic model (Thissen & Steinberg, 2009) on the seven items (IRT estimates for all items are reported in Table S1). Based on the fitted model, we then predicted point estimates of the latent variable for each participant. The index had a high marginal reliability ($\rho = .793$). For additional analyses, we constructed indices of Elective Abortion (i.e., any reason, not wanting children, etc.) and Traumatic Abortion (i.e., result of rape, endangered life of the mother, etc.), yet these indices showed low reliabilities ($\rho_{\text{TRAUMATIC}} = .46$; $\rho_{\text{ELECTIVE}} = .52$).

Sexism. Attitudes towards gender equality were assessed by 3 dichotomous items describing inegalitarian gender attitudes (e.g., “Most men are better suited emotionally for politics than are most women”). Likewise, we fitted a two-parameter logistic model based on the three items, to estimate relative difficulties and predict point estimates for each participant (see Table S1 for parameters). The sexism index showed acceptable reliability ($\rho = .68$).

Religiosity. Religiosity scores were computed from two 9-level items assessing prayer frequency and religious attendance (from “Never” to “Several Times a Week”) and a 3-level item measuring self-reported of strength of identification with religion. Due to the diversity of response levels in the items, we fitted a generalized partial credit IRT model (Thissen & Steinberg, 2009), capable of estimating the relative contribution of each item as well as each of category within each item. Based on the model, we predicted point estimates for all participants. The religiosity index showed high reliability ($\rho = .76$).

Sexual Morality. Attitudes regarding sexual behaviors were assessed using 6 four-level items. Participants were asked about their levels of agreement with sexual practices as premarital sex, sex between teenagers, extramarital sex, same-sex relations, sex education in public schools and availability of contraceptive pills for teenagers. We fitted a generalized partial credit IRT model to estimate item and categories relative contributions to the latent variable. The Sexual morality index showed high reliability ($\rho = .76$), where higher scores indicate more restricted views of sexuality.

Sanctity of Life. Respect for human life as an unconditional value was indirectly measured by combining four dichotomous items about the morality of *suicide* and one item regarding the morality of *active euthanasia*, an operationalization used in previous studies (Jelen, 1984, 2014; Strickler & Danigelis, 2002). We ran a 2-parameter logistic IRT model and

predicted point estimates for all participants. This index of sanctity of life showed a good reliability ($\rho = .71$).

Demographics. Demographic data was also retrieved: political orientation (7-level self-placement item), age, sex and socioeconomic status.

Results

Descriptive means for by year and zero-order correlations are shown in supplementary materials (see Table S1 and S2). We conducted hierarchical regression analyses to test the specific contribution of the different type of predictors.

[Insert Table 1 about here]

Hierarchical Regression

We first regressed abortion attitudes on sexism and religiosity and political orientation (Step 1). Then, we entered sexual morality and SoL (Step 2). Finally, we incorporated demographics (Step 3). Table 1 displays the results from the hierarchical regression models. Consistently with previous literature, in step 1 abortion attitudes were negatively predicted by sexism, religiosity and political orientation, significantly explaining about 25% of the variance.

In step 2, opposition to abortion was positively predicted by both SoL and sexual morality. Moreover, the introduction of these predictors in step 2 reduced the associations between abortion attitudes and sexism, religiosity and political orientation. The complete model significantly improved about 13% the amount of variance explained.

Introducing demographics in the step 3 did not altered this pattern of results: the best predictor was sexual morality, followed by SoL, religiosity, sexism and political orientation. Demographic factors were also associated with abortion attitudes: being female, older and from higher SES increased the likelihood of supporting abortion. As shown in Table 1, demographics

alone explained about 2% of the variance in abortion attitudes. Additional analyses showed no problematic multicollinearity (all *VIFs* < 2.0). The same pattern of results was found when the regression predicted for attitudes towards Traumatic and Elective abortion as separated outcomes (see Tables S4a-b).

Multilevel Models

To account for possible variation at the year-level, we ran a random intercept model, introducing all predictors of step 3 as fixed effects and year as random variable. Analyses yielded practically identical parameters for all fixed effects, suggesting only a slight variation on the baseline levels of abortion attitudes throughout the 20 years covered by the surveys.

We next analyzed whether the strength of the predictors of abortion attitudes have undergone changes across the years. We ran a random slopes model, which allowed the variables sexism, religiosity, political orientation, sexual morality and SoL to vary freely across years. Random effect plots reveal slight trends in two of the predictors: political orientation seems to be decreasing its influence on abortion attitudes, whereas religiosity seems to be increasing. Effects of sexual morality and SoL over time do not suggest a clear pattern in either direction (see Figure S1 for plots random intercepts and slopes).

Finally, we conducted the same analyses separating the outcome variable into traumatic and elective without any substantive difference in the patterns of the coefficients.

Discussion

Our analyses of GSS data revealed predictors of attitudes toward abortion consistent with past research, both liberal and conservative rhetoric as well as the predictions of life history theory. Step 2 including measures of moral concerns about sexuality and SoL performed better in relation to the prior step including only politics, religiosity and sexism. Moreover, the presence

of sexual morality and SoL decreases the strength of these three predictors. Likewise, our analyses show that demographics exert a small, though significant, influence on abortion attitudes, which also replicates previous findings (Cook et al., 1992; Jelen & Wilcox, 2003). Further mixed-model analyses accounted for potential effects over time, yielding no clear evidence of significant change of these associations between 1996 and 2016.

The results from our secondary analyses of GSS nationally representative data, using the latest versions of the survey and more sophisticated measures for index construction, confirm in general terms the findings of the literature; all five predictors we identified in the introduction were significantly associated with abortion attitudes. We found no evidence of significant variation over time. However, our 3-step hierarchical model reveals that introducing variables inspired by previously under-explored perspectives significantly improve the explanation of the variance. Holding misogynist views seems to be less relevant to understand attitudes toward abortion than moral views of sexuality and the absolute value of human life. Additionally, and countering results from recent studies (Huang et al., 2014; Osborne & Davies, 2012), we found identical results after separate traumatic and elective abortion into two items. When the two types of abortion were regressed as separate outcomes, the findings held.

Study 1 does present some limitations. This dataset offers high external validity, yet questionable internal validity of the constructs. Some of the items can only indirectly tap our measures of interest, or present poor psychometric properties. Shortcomings of these measures items have been already discussed in the literature (Bumpass, 1997). The next study was designed to address questions of internal validity.

Study 2

We developed a set of measures to specifically assess the variables of interest. As in Study 1, we hypothesized that religiosity, political orientation, sexism, sexual morality and SoL will differently predict abortion attitudes. Specifically, we expect that introducing sexism, sexual morality and sanctity of life as abortion predictors will significantly improve the performance of the models significantly, above and beyond religiosity and political orientation.

Methods

Participants

Three samples were collected: 118 YourMorals.org users ($M_{AGE} = 31.65$, Female = 39.8%), 159 college students ($M_{AGE} = 21.37$, Female = 86.8%) and 333 Mechanical Turk workers ($M_{AGE} = 33.19$, Female = 41.4%). YourMorals.org is a data collection platform where users voluntarily sign up, choose to take part in different studies and are given feedback about their morality, personality, and ideology.

Measures

Abortion attitudes. We constructed and piloted a 13-item measure of abortion attitudes, adapting items from the GSS and introducing new items (see full list of items in Supplemental Material). To avoid framing effects (cf. Mikołajczak & Bilewicz, 2015), we avoided the terms “baby”, “son / daughter” or “mother” as much as the statements permitted. All 7-level Likert items were randomly presented and preceded by the phrase “A woman should have the right to terminate her pregnancy...” and were phrased in conditional tense (e.g., “if her life is endangered”, “if having a child will make it much harder for her to get a college education or a job”, “if the pregnancy is the result of rape”; see Supplemental Materials for items). Based on previous literature (Cook et al., 1992), we assumed the existence of two factors regarding

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attitudes towards termination of pregnancy: traumatic abortion (e.g., cases of rape, life endangered, fetal malformation) and elective abortion (e.g., feeling not prepared to be mother, unwanted pregnancy in poverty, etc.).

Pilot data. We piloted the scale on 318 users of YourMorals.org (Females = 32.0%, $M_{age} = 32.4$, $SD_{age} = 13.7$). Confirmatory factor analyses on the pilot data showed that the 2-factor model had an appropriate approximate fit ($RMSEA = .146$, 90% CI [.134, .158], $SMSR = .052$, $CFI = .915$, $TLI = .896$). Composite scores showed high reliability for both elective (Cronbach's $\alpha = .954$) and traumatic abortion (.934), so we predicted point values in each factor for all participants.

Data from samples. Support for abortion was assessed by the same 13 items describing different situations, associated with either traumatic – i.e., rape, endangered health of the mother, fetal malformation, etc. – or elective termination of pregnancy – i.e., woman is single, does not want the child, lives in poverty, etc. Higher scores indicate greater support for abortion. In all samples, the scales showed good reliability (all Cronbach's α s > .93).

Sexism. Attitudes towards gender equality were measured with the Ambivalent sexism Inventory (ASI; Glick & Fiske, 1996). The scale contains two subscales: hostile sexism and benevolent sexism. Across all samples, the full scale as well as the subscales showed good reliability (all Cronbach's α s > .78).

Sexual Morality. To measure moral concerns about sexuality, we presented participants with a list of 12 items considering controversial sexual practices – i.e., premarital sex, pornography, voluntarily becoming a sex worker, intercourse of more than two partners, etc. –, under the template “Do you believe that [sexual practice] is OK or wrong?”. Respondents were asked to indicate their views on a 7-level scale from “Totally OK” to “Totally Wrong” (see full

list of items in Supplemental Material). Since exploratory factor analyses did not yield multidimensional solution in any sample, we computed the average of all items. Across the three samples, the scale showed good reliability (all Cronbach's α s > .85)

Sanctity of Life. As in Study 1, and following previous studies (Jelen, 2014), we operationalized the views of SoL, as the opposition to behaviors that consider ending life as a decision of the agents' will and autonomy, namely suicide and euthanasia (e.g., "If a person is tired of living and feels ready to die, she has the right to end her own life"; "Doctors should be allowed to painlessly end the patient's life with the consent of the patient and her family"; see Supplemental Materials for full list). Participants indicated their agreement with each one of 8 statements in a 7-level Likert scale. Higher scores indicate greater consideration of human life as a value in itself. The scale was reliable across samples (all Cronbach's α s > .87).

Demographics. Participants were asked to place themselves in a 7-level conservative-liberal continuum and to report the frequency of attendance at religious services. Participants' age and sex were recorded.

Results

In all samples the mean of support for abortion was higher than the scale midpoint, with higher scores for traumatic than for elective abortion. In terms of political orientation, the average in the MTurk sample fell on the scale midpoint, whereas the other two samples reported were more liberal (Table S5 presents descriptive statistics for all samples).

[Insert Table 2 about here]

Hierarchical Regression

BEYOND MISOGYNY: PREDICTORS OF ABORTION ATTITUDES

As in Study 1, we predicted abortion attitudes in a 3-step hierarchical linear model. First, we regressed abortion attitudes on religiosity, political orientation and benevolent and hostile sexism. Step 2 introduced SoL and sexual morality. Step 3 included sex and age as covariates. As Table 2 shows, in step 1 benevolent sexism does not predict significantly abortion attitudes in any of the three samples, and hostile sexism only does in the YM sample. Religiosity negatively predicts abortion attitudes in 2 of the 3 samples, while political conservatism it a significant predictor across all samples.

The introduction of SoL and sexism variables improves the model significantly in all three samples, increasing the amount of variance explained by roughly 12% in the first two samples, and 33% in the MTurk sample. Specifically, both concerns about sexual morality and SoL beliefs negatively predict abortion attitudes to a greater extent than religiosity. The influence of religiosity and political orientation decrease after introducing these variables, remaining significant predictors (except for religiosity in the MTurk sample). Introducing demographics variables in step 3 does not improve the model. Regression coefficients in step 3 are consistent across samples: the only significant predictors of abortion attitudes are political orientation, sexual morality and SoL. Religiosity is a significant predictor in the YM sample and the student sample, whereas hostile sexism predicts abortion attitudes significantly in all three samples. Contrary to previous findings in the literature, benevolent sexism did not predict support for abortion in any sample.

We ran separate hierarchical regressions to predict support for traumatic and elective abortion, which yielded similar patterns of regression coefficients (see Tables S6 – S8 for complete tables).

Discussion

Study 2 replicated the results from Study 1, using 3 different samples and more precise psychological measures. The main outcome – i.e., support for abortion – was measured with a wider range of items, dealing with termination of pregnancy in multiple circumstances. Previous research has shown that participants are sensitive to the phrasing of abortion questions (contextualized vs. non-situational items; Bumpass, 1997; Hans & Kimberly, 2014). Our 13-item scale covered situations typically associated with either elective or traumatic abortion. Similarly, to operationalize misogyny we used the ASI (Glick & Fiske, 1996), which distinguishes hostile and benevolent sexism and makes our research comparable to prior research. Additionally, sexual morality and SoL were measured using multiple items.

The pattern of results did not change substantively across the three samples. Moreover, some constructs predicted abortion attitudes in only some of the samples, such as religiosity in two samples and hostile sexism in only one. We did not find strong and systematic associations between opposition to abortion and sexism, nor with demographics. The consistency of results across internet users, college students and MTurkers suggest that the results we found are robust and not due to sampling bias.

Study 3

The previous studies showed how abortion attitudes can be predicted by religiosity, political orientation, sexism and, more interestingly, by sexual morality and SoL. The internal validity of the indirect strategy of using attitudes regarding euthanasia and suicide as a proxy for SoL can be questioned. Are views on suicide, physician-assisted death and capital punishment, a straightforward approximation of the opinion someone has about human life and its inviolability? For instance, someone's favorable position towards euthanasia does not necessarily involve the belief that the value of human life is relative or conditional (Baranzke, 2012). Similarly, suicide

could be morally condemned for purely consequentialist reasons, regardless of any considerations of the intrinsic value of human life (Cholbi, 2011). Accordingly, we designed Study 3 to replicate our prior findings with a more direct, face-valid measure of the construct SoL. Therefore, we piloted a set of statements directly asking about the sanctity of human life (e.g., “Respecting someone’s life should be above any other moral consideration”; a detailed description of the procedure, measures and results of the pilot can be found in the supplemental materials.) In overall, the pilot yielded a reliable 7-item measure of SoL that correlated with moral views on suicide, euthanasia and death penalty. As expected, we found a strong correlation between religiosity and SoL, suggesting that our measure is internally valid.

Equipped with a direct measure of the SoL construct, we now turn to the problem of abortion. If our reasoning is sound, SoL beliefs should be a strong predictor of attitudes against abortion, independent from religiosity, political orientation, sexism and sexual morality: people who do not hold beliefs about the SoL, should be more likely to support voluntary termination of pregnancy. We pre-registered our hypotheses and attempted to replicate the results of Study 2 introducing two new features: the new measure of SoL and an international pool of participants (peer-review anonymous version https://osf.io/39gt4/?view_only=04bcc452462f41a388171c15fa50f72c). Based on the theoretical models discussed in the introduction, we modelled structural equations accordingly and estimated the parameters.

Methods

Participants

A priori power analyses suggested a sample size of 398 in order to detect a change in R^2 of at least 0.05, with $\alpha = 0.01$ and $1 - \beta = .95$. Using Prolific, an UK-based online participant

pool, we recruited 516 participants and asked them to complete a survey for financial compensation. We excluded participants who failed to complete the survey and missed attention checks, leaving a sample of 375 participants ($M_{AGE} = 28.00$, Female = 57.77%). Since expected sample size was not reached, we ran a post-hoc power analysis which yielded an achieved power of $1-\beta = .934$.

Measures

Almost all measures were identical as in Study 2: abortion attitudes, ASI, sexual morality, religiosity, political orientation and demographics (age, gender, ethnicity). SoL was measured with the 7-item scale developed based on the pilot data. We also extracted Country of current residence from the Prolific user information database.

[Insert Table 3 here]

Results

Table 3 shows descriptive statistics for all continuous variables. Support for abortion was on average higher than the scale midpoint, ($M = 5.25$, $SD = 1.34$; midpoint = 4.0), with higher scores for traumatic ($M = 6.05$, $SD = 1.11$) than for elective abortion ($M = 4.76$, $SD = 1.58$). In terms of political orientation, the sample skewed liberal ($M = 3.73$, $SD = 1.95$). Participants reported being residents of 31 different countries, yet the proportions in the sample varied greatly: UK had the largest share (24.26%), followed by Portugal (13.60%), South Africa (10.93%), Mexico (8.26%) and Poland (6.40%; see complete frequencies in Table S12).

[Insert Table 4 about here]

Hierarchical Regression

As in studies 1 and 2, we conducted a 3-step hierarchical regression. Table 4 shows the estimates for each linear model. Firstly, we regressed abortion attitudes on political orientation,

religiosity and both subscales of ambivalent sexism. This step predicted about 40% of the explained variance ($R^2 = .398$), mainly by the weight of political orientation and religiosity. Then, step 2 also included Sexual Morality and Sanctity of Life as predictors. The estimation yielded significant coefficient for both constructs. In total, the model accounted for about half of the variance ($R^2 = .505$). The final step introduced demographics, of which only age had a significant coefficient. This model yielded a slight but significant improvement in comparison to the previous steps.

Robustness analyses

To check the robustness of these findings, we first controlled for country of residence by running a multilevel model introducing country as a random intercept. The estimation yielded the same pattern of coefficients, suggesting that the between-country variance is not significantly associated to any of the predictors from the prior models (see Table S13). We also ran separate analyses for attitudes towards traumatic and elective abortion (see Tables S14a-b) and we found that the same predictors remained significant when regressed separately for either type of abortion. Consistent with the literature, benevolent sexism predicted attitudes regarding elective abortion in the first step ($b = -.20$, 95% $CI [-.37, -.03]$, $\beta = -.13$, $p = .023$), but after introducing SoL and sexual morality, the influence of sexism was no longer significant ($b = -.00$, 95% $CI [-.16, .16]$, $\beta = -.00$, $p = .997$; see Tables S10a–b for details).

Structural Equation Models

Finally, we estimated structural equation models to see how constructs related to abortion might be connected to each other. Model specification was based on the three theoretical schemes discussed in the introduction, taking one of the three candidate predictors as mediating the rest of predictors (see Figure 1). Using the *lavaan* R-package (Rosseel, 2012), we specified

and estimated the three structural equation models corresponding to each theoretical perspective. In order to get a clearer insight of the roles of each one of the predictors and potential mediators, we assume orthogonality in the exogenous variables, setting them at zero. Although the assumption is not defensible in the real world (Kline, 2016), for the aims of this theoretically-driven analyses, we believe it is justified (for details of parameters and fit measures see Tables S15a – c).

[Figure 2 about here]

Women’s Rights. We fitted a model based on the relationships drawn from the feminist perspective on abortion attitudes (Figure 2). Abortion attitudes and ambivalent sexism were modeled as latent variables. The theoretical model presented an acceptable fit to the data ($\chi^2_{(9)} = 49.209, p < .001, CFI = .959, AIC = 3861.291, RMSEA = .111, SRMR = .032$). The model yielded significant coefficients for all paths directly predicting ASI, with stronger associations for political orientation and sexual morality. The same two variables were strong predictors of abortion attitudes, but direct paths from SoL and religiosity were slightly and not significant respectively. ASI does not predict attitudes towards abortion. Analyses of indirect effects on abortion attitudes via ambivalent sexism yielded no significant paths, suggesting that there is no mediation effects between any of the predictors and abortion attitudes via ASI.

[Figure 3 about here]

Sanctity of Life. Next, we fitted a model based on the theoretical predictions drawn from pro-life rhetoric, centered on SoL as the main variable in abortion attitudes (Figure 3). Political orientation, and hostile sexism were introduced as direct predictors of abortion attitudes, while religiosity, sexual morality and benevolent sexism were set to predict abortion attitudes via SoL. The model fit the data very well ($\chi^2_{(7)} = 7.090, p = .420, CFI = 1.000, AIC = 3002.991, RMSEA =$

.006, $SRMR = .010$). Fitted models with a CFI of 1 are common when covariances between exogenous variables are set to zero, as we are doing in these models, so the interpretation must focus on the residual-based fit indices, which also suggest a good fit. Consistent with the hypothesized relationships, religiosity, sexual morality and benevolent sexism predicted SoL beliefs. In contrast, only sexual morality and political orientation directly predicted abortion attitudes. In both cases, sexual morality was the strongest predictor of abortion attitudes. Finally, SoL significantly predicted abortion attitudes. The data reveals that the effect of religiosity on abortion attitudes is fully mediated by SoL beliefs, while indirect effects of benevolent sexism and sexual morality approach significance, but they cannot be interpreted neither as a full nor partial mediation.

[Figure 4 about here]

Life History Approach. Finally, we modelled attitudes predicting abortion based on the predictions drawn by Life History Theory. From this perspective, the main variable driving attitudes towards abortion should be reproductive strategies (fast vs. slow life strategists), which in our study is operationalized by sexual morality. The model presented an acceptable fit to the data ($\chi^2_{(7)} = 37.750$, $p < .001$, $CFI = .966$, $AIC = 2693.410$, $RMSEA = .110$, $SRMR = .034$). We found no association between hostile sexism and sexual morality, but the model yielded significant coefficients political orientation and religiosity. Only SoL and political orientation showed a significant direct effect on abortion attitudes, while the direct effect of sexual morality showed the largest coefficient. We found that sexual morality fully mediated the effect of religiosity on abortion attitudes and partially mediated the effect of political orientation.

[Insert Table 5 about here]

When we compare the global fit measures of all models (Table 5), we realized that the models of based on SoL and Life History present a significantly better fit than the Women's Rights model. SoL model shows a closer fit for residuals-based fit indices (RMSEA, SMSR), however statisticians suggest using information criteria-based indices (AIC, BIC) for comparing non-nested models (Merkle et al., 2016). Thus, the Life History model offers the most convincing model, although the SoL model provides a close fit to the data as well.

Discussion

In study 3 we addressed the same research question about the variables that better predict abortion attitudes. The novel feature of this study was the participation of an international sample and the use of a novel measure of SoL. Based on a pilot study, we developed an internally valid and reliable direct assessment of SoL beliefs. Linear models using this measure replicated our findings from the previous studies: political orientation and religiosity predict abortion attitudes, but the effect of the latter decreases after introducing sanctity of life and sexual morality as predictors. Regarding hostile and benevolent sexism, the results are consistent with our previous findings, but contrary to the literature (Hodson & MacInnis, 2017; Huang et al., 2016). We found no association between traumatic abortion attitudes and hostile sexism, and a limited effect of benevolent sexism on elective abortion, which fades away once SoL and sexual morality are introduced as predictors. The results showed to be robust, not varying by the country of residence of the participants.

To discard potential endogeneity confounds, we built three structural models based on abortion advocacy discourses and psychological theory. In general terms, all models yielded relatively good statistical fit but not all models confirmed the hypothesized relationships between the variables and the predictors. For example, ambivalent sexism as a whole, or separated by its

two subscales, was not a significant predictor of attitudes toward abortion, nor mediated the influence of other variables (Women's Rights Model). On the other hand, the effect of religiosity on abortion attitudes was fully mediated by both SoL and sexual morality. Political orientation seemed to hold an independent path to abortion attitudes. Unlike Hodson and colleagues' findings (Hodson & MacInnis, 2017; Prusaczyk & Hodson, 2018), the effect of political orientation was not mediated by sexism, and it was partially mediated by sexual morality, which is consistent with studies based on Life History Theory (Pinsof, 2018; Weeden, 2003; Weeden & Kurzban, 2017).

General Discussion

What are the psychological factors influencing abortion attitudes? In this article, we addressed this question broadening the scope of candidate predictors and exploring their relationships. Based on the literature, theory and normative views on abortion, we centered our attention on the role played by sexism, SoL and sexual morality. More particularly, we wanted to evaluate the introduction of the two last attitudinal predictors, which are consistent with pro-life perspectives and have received relatively scarce attention by abortion researchers (Adamczyk et al., 2020). Across 3 studies using different type of measures and drawing on participants from different origins, we found robust evidence that sexual morality and SoL predict abortion attitudes, after controlling for political orientation, religiosity and demographics. Contrary to recent studies (Huang et al., 2014, 2016), we found negligible effects of sexism on attitudes towards abortion. We found no variation due to secular trends, country of residence, or abortion seen as traumatic or elective. Finally, we explored theoretically-driven structural models to understand relationships between variables. Although the three models each showed acceptable

fit measures, the model based on sexual morality driving the influence of the other constructs on abortion attitudes showed the better fit.

Considering the literature on abortion research, the limited influence of sexism on abortion attitudes was not expected. Across all our studies, hierarchical models revealed that the effect of sexism was drastically diminished after introducing sexual morality and SoL as predictor variables. Moreover, we found no systematic differences in the influence of hostile and benevolent sexism. Two studies where researchers also introduced sexual morality in the model, showed similar results (Rye & Underhill, 2019; Strickler & Danigelis, 2002). These findings suggest that sexism, and more specifically, ambivalent sexism might be partially capturing a wider attitudinal cluster, part of which is actually driving the effects on abortion attitudes. However, when we tested indirect paths of benevolent and hostile sexism via SoL and sexual morality respectively, there were no significant effects. How attitudes about women relate to abortion attitudes remains unclear.

Of our predictors, sexual morality and SoL had the most robust effects. The effects of the former on abortion attitudes support the predictions generated by life history theory, according to which fast life strategists, who are more willing to invest in short-term mating and less in offspring upbringing, are more interested in practices that would facilitate “childless sex” (Pinsof, 2018; Weeden & Kurzban, 2017). This view, interestingly, is consistent with normative views both from pro-life and pro-choice advocates, hinting at a common concern across sides that could help us clarify the complex structure associated with abortion attitudes. In our study we considered sexual morality as a proxy for fast life as an individual difference. Further studies should examine the influence of ecological variables related life history, such as population density (Sng et al., 2017) or pathogen threat (van Leeuwen et al., 2014) on abortion attitudes.

Beliefs about SoL, the moral conviction that human life in itself is unconditionally valuable regardless of circumstances, have received little attention by researchers. We consistently found a connection between abortion attitudes and SoL and, across both direct and indirect measurements of the latter. The only normative framework that takes the value of life into account is the pro-life narrative, as one of the focal points of the rhetoric against abortion. We also confirmed the validity of indirect measures of SoL, as it had been previously used by some researchers (Jelen, 1984). Our novel measurement of attitudes toward the absolute value of life opens a new perspective for researchers interested in studying attitudinal constructs related to moral or policy debates.

From a methodological perspective, our study contributes a more sophisticated psychometric approach to the GSS items measuring abortion attitudes. As noted, these dichotomous items have been profusely utilized by abortion researchers (Barkan, 2014; Jelen, 1984; Jelen & Wilcox, 1997; Strickler & Danigelis, 2002; Weeden, 2003), but seldom have been analyzed acknowledging differential contributions by each one of the items. Studies have addressed how different phrasings and situations might have an impact on responses to an abortion attitudes questionnaire (Hans & Kimberly, 2014; Hendriks et al., 2012). Our IRT-based approach to the GSS makes possible to identify how much each item is contributing to the latent construct, offering the alternative to generate point estimates for each participant.

An additional issue related to measurement of abortion attitudes is the distinction between traumatic and elective abortion. There are clear conceptual reasons to distinguish both types of abortions: in many contexts, people see themselves as supporting one type of abortion and not the other – generally supporting traumatic abortion but not elective abortion (Cook et al., 1992; Jozkowski et al., 2018). However, the evidence regarding the practical convenience of separating

the measures is inconsistent. Our findings showed no meaningful differences in the models predicting attitudes toward either elective or traumatic abortion, unlike studies that have established connections between either type of abortion and subcomponents of ambivalent sexism (Begun & Walls, 2015; Huang et al., 2014, 2016). Further research is needed to clarify the internal structure of abortion attitudes and whether it is psychometrically meaningful to distinguish two types of attitudinal clusters.

Conclusion

With a subject as divisive as abortion, social scientists are expected to offer concepts and theories to understand why people take sides. We show that the answer to this question – as to many others – is complex. The intricacies of abortion attitudes stem from the protean character of the problem itself. Thus, researchers need to broaden their conceptual toolboxes to address the topic.

Our studies can be seen as an example of how scientific research can benefit from ideological variety. In the context of the debate about worldview diversity in academia (Duarte et al., 2014), it has been stressed that ideologically like-minded research groups may overlook potential explanations that are not salient when considering the issue. For example, in a recent publication Stanovich and Toplak (2019) acknowledge that the lack of religiously-minded scholars in their laboratory precluded them from detecting a methodological flaw that had related being religious to having less actively open-minded thinking: “A religiously oriented team member in our lab might have more quickly seen the possibility that the belief revision items made it harder for the religious minded to display actively open-minded thinking when responding.” (Stanovich & Toplak, 2019, p. 163) Considering that the majority of social psychologists consider them as socially progressive (Inbar & Lammers, 2012), we can speculate

the reasons why some of the variables regarding abortion attitudes might be more salient than others. This, however, might leave some assumptions unchecked. In the context of our study, we introduced normative views on abortion that are less commonly considered when hypothesizing – i.e., SoL, sexual promiscuity concerns. Our hope is that our approach offers a richer set of attitudinal correlates of abortion attitudes, and, hopefully, expands the perspectives for future research on the subject.

References

- Adamczyk, A. (2013). The Effect of Personal Religiosity on Attitudes toward Abortion, Divorce, and Gender Equality—Does Cultural Context Make a Difference? *EurAmerica*, 43(1), 213–253.
- Adamczyk, A., Kim, C., & Dillon, L. (2020). Examining Public Opinion about Abortion: A Mixed-Methods Systematic Review of Research over the Last 15 Years. *Sociological Inquiry*, 90(4), 920–954.
- Anthony, F.-V., & Sterkens, C. (2019). Religion and the Right to (Dispose of) Life: A Study of the Attitude of Christian, Muslim and Hindu Students in India Concerning Death Penalty, Euthanasia and Abortion. In H.-G. Ziebertz & F. Zaccaria (Eds.), *Euthanasia, Abortion, Death Penalty and Religion—The Right to Life and its Limitations: International Empirical Research* (pp. 13–63). Springer.
- Baranzke, H. (2012). “Sanctity-of-Life”—A Bioethical Principle for a Right to Life? *Ethical Theory and Moral Practice*, 15(3), 295–308.
- Barkan, S. E. (2014). Gender and Abortion Attitudes: Religiosity as a Suppressor Variable. *Public Opinion Quarterly*, 78(4), 940–950.

- Begun, S., & Walls, N. E. (2015). Pedestal or Gutter: Exploring Ambivalent Sexism's Relationship With Abortion Attitudes. *Affilia - Journal of Women and Social Work*, 30(2), 200–215.
- Bumpass, L. L. (1997). The measurement of public opinion on abortion: The effects of survey design. *Family Planning Perspectives*, 29(4), 177–180.
- Chalmers, R. P. (2012). mirt: A Multidimensional Item Response Theory Package for the R Environment. *Journal of Statistical Software*, 48(6), 1–29.
- Cholbi, M. (2011). *Suicide: The Philosophical Dimensions*. Broadview Press.
- Cook, E. A., Jelen, T. G., & Wilcox, C. (1992). *Between Two Absolutes. Public Opinion and the Politics of Abortion*. (Vol. 46). Westview Press.
- Del Giudice, M., & Belsky, J. (2011). The development of life history strategies: Toward a multi-stage theory. *The Evolution of Personality and Individual Differences*, 154–176.
- Duarte, J. L., Crawford, J. T., Stern, C., Haidt, J., Jussim, L., & Tetlock, P. E. (2014). Political Diversity Will Improve Social Psychological Science. *Behavioral and Brain Sciences*, 38(e130), 1–54.
- Duerksen, K. N., & Lawson, K. L. (2017). “Not Brain-washed, but Heart-washed”: A Qualitative Analysis of Benevolent Sexism in the Anti-Choice Stance. *International Journal of Behavioral Medicine*, 24(6), 864–870.
- Ellis, L. (1987). Criminal behavior and r/k selection: An extension of gene-based evolutionary theory. *Deviant Behavior*, 8(2), 149–176.
- Emerson, M. O. (1996). Through Tinted Glasses: Religion, Worldviews , and Abortion Attitudes. *Journal for the Scientific Study of Religion*, 35(1), 41–55.

- Figueredo, A. J., Vásquez, G., Brumbach, B. H., Sefcek, J. A., Kirsner, B. R., & Jacobs, W. J. (2005). The K-factor: Individual differences in life history strategy. *Personality and Individual Differences*, 39(8), 1349–1360.
- George, R. P., & Tollefsen, Christopher. (2008). *Embryo: A Defense of Human Life*. The Witherspoon Institute.
- Gladden, P., & Cleator, A. (2018). Slow Life History Strategy Predicts Six Moral Foundations. *EvoS Journal: The Journal of the Evolutionary Studies Consortium*, 9, 43–63.
- Gladden, P., Figueredo, A. J., Andrejzak, D. J., Jones, D. N., & Smith-Castro, V. (2013). Reproductive Strategy and Sexual Conflict: Slow Life Strategy Inhibits Negative Androcentrism. *Journal of Methods and Measurement in the Social Sciences*, 4(1), 48–71.
- Glick, P., & Fiske, S. T. (1996). The ambivalent sexism Inventory: Differentiating hostile and benevolent sexism. *Journal of Personality & Social Psychology*, 70(3), 491–512.
- Hans, J. D., & Kimberly, C. (2014). Abortion attitudes in context: A multidimensional vignette approach. *Social Science Research*, 48, 145–156.
- Harris, R. J., & Mills, E. W. (1985). Religion, Values and Attitudes Toward Abortion. *Journal for the Scientific Study of Religion*, 24(2), 137–154.
- Hendriks, J., Fyfe, S., Styles, I., Rachel Skinner, S., & Merriman, G. (2012). Scale construction utilising the Rasch unidimensional measurement model: A measurement of adolescent attitudes towards abortion. *Australasian Medical Journal*, 5(5), 251–261.
- Hodson, G., & MacInnis, C. C. (2017). Can left-right differences in abortion support be explained by sexism? *Personality and Individual Differences*, 104, 118–121.

- Huang, Y., Davies, P. G., Sibley, C. G., & Osborne, D. (2016). Benevolent Sexism , Attitudes Toward Motherhood , and Reproductive Rights: A Multi-Study Longitudinal Examination of Abortion Attitudes. *Personality and Social Psychology Bulletin*, 42(7), 970–984.
- Huang, Y., Osborne, D., Sibley, C. G., & Davies, P. G. (2014). The Precious Vessel: Ambivalent Sexism and Opposition to Elective and Traumatic Abortion. *Sex Roles*, 71, 436–449.
- Inbar, Y., & Lammers, J. (2012). Political Diversity in Social and Personality Psychology. *Perspectives on Psychological Science*, 7(5), 496–503.
- Jelen, T. G. (1984). Respect for Life, Sexual Morality, and Opposition to Abortion. *Review of Religious Research*, 25(3), 220.
- Jelen, T. G. (2014). The Subjective Bases of Abortion Attitudes: A Cross National Comparison of Religious Traditions. *Politics and Religion*, 7(03), 550–567.
- Jelen, T. G., Damore, D. F., & Lamatsch, T. (2002). Gender, Employment Status, and Abortion: A Longitudinal Analysis. *Sex Roles*, 47(7/8), 321–330.
- Jelen, T. G., & Wilcox, C. (1997). Continuity and Change in Attitudes Toward Abortion: Poland and the United States. *Social Science Quarterly*, 78(4), 907–921.
- Jelen, T. G., & Wilcox, C. (2003). Causes and Consequences of Public Attitudes Toward Abortion: A Review and Research Agenda. *Political Research Quarterly*, 56(4), 489–500.
- John Paul II. (1995). *Evangelium Vitae. To the Bishops Priests and Deacons Men and Women religious lay Faithful and all People of Good Will on the Value and Inviolability of Human Life*. Libreria Editrice Vaticana.

- Jozkowski, K. N., Crawford, B. L., & Hunt, M. E. (2018). Complexity in Attitudes Toward Abortion Access: Results from Two Studies. *Sexuality Research and Social Policy*, 1–19.
- Katz, J., Gravelin, C. R., & Brien, C. O. (2017). Neoliberal Beliefs and Perceptions of Unintended Adolescent Pregnancy after Consensual or Forced Sex. *Sex Roles*.
- Kirchhoffer, D. G. (2016). The Roman Catholic Church on the Secularization of the Concept of Human Dignity. *Louvain Studies*, 39(3), 240–260.
- Kline, R. (2016). *Principles and Practice of Structural Equation Modeling: Fourth Edition* (4th ed.). Guilford Press.
- Lowe, P., & Page, S.-J. (2018). “On the Wet Side of the Womb”: The construction of mothers in anti-abortion activism in England and Wales. *European Journal of Womens Studies*, 1–16.
- Manninen, B. A. (2013). The Value of Choice and the Choice to Value: Expanding the Discussion about Fetal Life within Prochoice Advocacy. *Hypatia-a Journal of Feminist Philosophy*, 28(3), 663–683.
- McCutcheon, A. L. (1987). Sexual Morality, Pro-Life Values, and Attitudes Toward Abortion. A simultaneous latent structure analyses for 1978-1983. *Sociological Methods & Research*, 16(2), 256–275.
- McIntosh, W. A., Alston, L. T., & Alston, J. P. (1979). The Differential Impact of Religious Preference and Church Attendance on Attitudes toward Abortion. *Review of Religious Research*, 20(2), 195–213.
- Merkle, E. C., You, D., & Preacher, K. J. (2016). Testing nonnested structural equation models. *Psychological Methods*, 21(2), 151–163.

- Mikołajczak, M., & Bilewicz, M. (2015). Foetus or child? Abortion discourse and attributions of humanness. *British Journal of Social Psychology*, 54(3), 500–518.
- Mogilski, J. K., Mitchell, V. E., Reeve, S. D., Donaldson, S. H., Nicolas, S. C. A., & Welling, L. L. M. (2020). Life History and Multi-Partner Mating: A Novel Explanation for Moral Stigma Against Consensual Non-monogamy. *Frontiers in Psychology*, 10.
- Osborne, D., & Davies, P. G. (2012). When Benevolence Backfires: Benevolent Sexists' Opposition to Elective and Traumatic Abortion. *Journal of Applied Social Psychology*, 42(2), 291–307.
- Petersen, M. B. (2018). Reproductive interests and dimensions of political ideology. *Evolution and Human Behavior*, 39(2), 203–211.
- Petterson, A., & Sutton, R. M. (2018). Sexist Ideology and Endorsement of Men's Control Over Women's Decisions in Reproductive Health. *Psychology of Women Quarterly*, 42(2), 235–247.
- Pinsof, D. R. (2018). *Evolutionary Origins of Political Ideology: Mating Strategies, Intergroup Conflict, and the Nature of Political Alliances*. University of California, Los Angeles.
- Prusaczyk, E., & Hodson, G. (2018). Left-right differences in abortion policy support in America: Clarifying the role of sex and sexism in a nationally representative 2016 sample. *Personality and Individual Differences*, 127(November 2017), 22–25.
- Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(1), 1–36.
- Rye, B. J., & Underhill, A. (2019). Contraceptive Context, Conservatism, Sexual Liberalism, and Gender-Role Attitudes as Predictors of Abortion Attitudes. *Women's Reproductive Health*, 6(1), 34–51

- Sanger, C. (2017). *About Abortion: Terminating Pregnancy in Twenty-First-Century America*. Harvard University Press.
- Skitka, L. J., Hanson, B. E., Washburn, A. N., & Mueller, A. B. (2018). Moral and religious convictions: Are they the same or different things ? *PloS One*, 1–18.
- Sng, O., Neuberg, S. L., Varnum, M. E. W., & Kenrick, D. T. (2017). The crowded life is a slow life: Population density and life history strategy. *Journal of Personality and Social Psychology*, 112(5), 736–754.
- Stanovich, K. E., & Toplak, M. E. (2019). The need for intellectual diversity in psychological science: Our own studies of actively open-minded thinking as a case study. *Cognition*, 187, 156–166.
- Strickler, J., & Danigelis, N. L. (2002). Changing Frameworks in Attitudes Toward Abortion. *Sociological Forum*, 17(2), 187–201.
- Tan, M. L. (2004). Fetal Discourses and the Politics of the Womb. *Reproductive Health Matters*, 12(24), 157–166.
- Thissen, D., & Steinberg, L. (2009). Item Response Theory. In R. E. Millsap & A. Maydeu-Olivares (Eds.), *The SAGE Handbook of Quantitative Methods in Psychology* (pp. 148–178). SAGE Publications.
- Thomson, J. J. (1976). A Defense of Abortion. In J. M. Humber & R. F. Almeder (Eds.), *Biomedical Ethics and the Law* (pp. 39–54). Springer US.
- van Leeuwen, F., Koenig, B. L., Graham, J., & Park, J. H. (2014). Moral concerns across the United States: Associations with life-history variables, pathogen prevalence, urbanization, cognitive ability, and social class. *Evolution and Human Behavior*, 35(6), 464–471.

Weeden, J. (2003). *Genetic Interests, Life Histories and Attitudes Towards Abortion*. University of Pennsylvania.

Weeden, J., Cohen, A. B., & Kenrick, D. T. (2008). Religious attendance as reproductive support. *Evolution and Human Behavior*, 29(5), 327–334.

Weeden, J., & Kurzban, R. (2017). Self-Interest Is Often a Major Determinant of Issue Attitudes. *Political Psychology*, 38, 67–90.

Wright, P. J., & Tokunaga, R. S. (2018). Pornography Consumption, Sexual Liberalism, and Support for Abortion in the United States: Aggregate Results from Two National Panel Studies. *Media Psychology*, 21(1), 75–92.

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Table 1. Summary of Hierarchical Regression Models (GSS 1996 – 2016; Study 1)

	Step 1			Step 2			Step 3		
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β
Intercept	6.06	.07		6.95	.07		6.22	.10	
Sexism	-.24	.02	-.17***	-.09	.02	-.06***	-.10	.02	.07***
Religiosity	-.41	.02	-.33***	-.14	.02	-.11***	-.17	.02	-.14***
Political Orientation	-.17	.01	-.19***	-.10	.01	-.10***	-.09	.01	-.10***
Sanctity of Life				-.32	.01	-.29***	-.31	.01	-.29***
Sexual Morality				-.41	.02	-.26***	-.43	.02	-.27***
Sex (Female)							.10	.03	.04**
Age							.01	.00	.11***
SES							.13	.02	.06***
Model Statistics	$F_{(3,4588)} = 509.30$			$F_{(5,4586)} = 573.60$			$F_{(8,4583)} = 387.50$		
	$R^2 = .249$			$\Delta F_{(2,4586)} = 518.38$			$\Delta F_{(3,4583)} = 151.08$		
				$R^2 = .384$			$R^2 = .403$		
				$\Delta R^2 = .135$			$\Delta R^2 = .019$		
				$p < .001$			$p < .001$		

Note: ** $p < .01$; *** $p < .001$ ($n = 4952$)

Table 2. Hierarchical regression models predicting for abortion for all samples of Study 2 (standardized coefficients only)

BE	Sample 1 - Internet Users (<i>n</i> = 215)			Sample 2 - College Students (<i>n</i> = 298)			Sample 3 - MTurk workers (<i>n</i> = 333)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
	β	β	β	β	β	β	<i>B</i>	<i>B</i>	β
<i>Predictors</i>									
Political Orientation	-.38 ***	-.24 **	-.24 ***	-.36 ***	-.14 *	-.14 *	.08	-.02	-.02
Religiosity	-.36 ***	-.17 *	-.17 *	-.32 ***	-.23 ***	-.23 ***	.31 ***	.15 *	.15 *
Hostile Sexism	-.08	-.08	-.08	-.03	-.00	-.00	-.19 *	.01	-.00
Benevolent Sexism	-.18 *	-.11	-.11	-.07	.01	.01	.19 **	.05	.05
Sexual Morality		-.23 *	-.23 *		-.25 ***	-.25 ***		.37 ***	.37 ***
Sanctity of Life		-.27 ***	-.27 ***		-.28 ***	-.28 ***		.39 ***	.40 ***
Age			.00			-.01			.05
Gender			-.00			-.02			-.05
Model Statistics									
<i>F</i>	54.39	56.33	41.52	35.36	38.73	28.89	12.02	46.79	35.14
<i>R</i> ²	.647	.744	.744	.331	.450	.451	.155	.539	.541
ΔF		21.44	.000		64.86	.091		94.27	.62
ΔR^2		.097	.000		.119	.013		.424	.002

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$. Full regression tables available in Supplemental Materials.

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Table 3. Descriptive statistics Study 3 ($n = 375$)

<i>Variable</i>	<i>M</i>	<i>SD</i>
Abortion	5.25	1.34
Elective	4.76	1.58
Traumatic	6.05	1.11
Ambivalent Sexism	3.15	1.03
Hostile	3.14	1.33
Benevolent	3.15	1.02
Religiosity	1.88	1.06
Political Orientation	3.73	1.95
Sanctity of Life	5.02	1.20
Sexual Morality	5.00	1.02

Note: all attitudinal variables range from 1 to 7. Higher scores indicate greater support for abortion, less gender-egalitarian views, more frequent religious attendance, higher appraisal of human life as a valuable in itself and more restricted sexual morality. Political Orientation ranges from 1 (liberal) to 10 (conservative). Religiosity ranges from 1 (not religious) to 6 (highly religious)

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Table 4. Hierarchical linear models predicting for abortion attitudes (Study 3)

<i>Predictors</i>	Step 1					Step 2					Step 3				
	<i>b</i>	<i>SE</i>	<i>95% CI</i>	β	<i>p</i>	<i>b</i>	<i>SE</i>	<i>95% CI</i>	β	<i>p</i>	<i>b</i>	<i>SE</i>	<i>95% CI</i>	β	<i>p</i>
(Intercept)	7.50	.18	[7.13, 7.86]	-.00	<.001	3.90	.57	[2.79, 5.02]	-.00	<.001	4.22	.64	[2.96, 5.48]	.10	<.001
Political Orientation	-.27	.04	[-.34, -.20]	-.39	<.001	-.15	.04	[-.22, -.08]	-.22	<.001	-.13	.04	[-.20, -.06]	-.19	<.001
Religiosity	-.27	.06	[-.39, -.15]	-.21	<.001	-.09	.06	[-.20, .02]	-.07	.123	-.11	.06	[-.23, .00]	-.09	.058
Hostile Sexism	-.08	.05	[-.18, .03]	-.07	.163	-.08	.05	[-.18, .01]	-.08	.095	-.07	.05	[-.17, .03]	-.07	.170
Benevolent Sexism	-.15	.07	[-.29, -.01]	-.12	.033	.02	.07	[-.12, .15]	.01	.799	.01	.07	[-.13, .14]	.01	.924
Sexual Morality						.58	.07	[.44, .72]	.44	<.001	.59	.07	[.44, .73]	.45	<.001
Sanctity of Life						-.12	.04	[-.21, -.03]	-.11	.007	-.12	.04	[-.21, -.03]	-.11	.007
Age											-.02	.01	[-.03, -.00]	-.10	.011
Gender											.10	.08	[-.06, .26]	.05	.223
Ethnicity [White]											-.21	.11	[-.43, .02]	-.15	.069
Observations	365					365					365				
<i>F</i> change						40.195					3.999				
<i>p</i> change						<.001					.008				
R ² / R ² adjusted	.397 / .390					.505 / .497					.521 / .509				
AICc	1081.459					1011.402					1005.614				

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Table 5. Model comparison

Model	<i>df</i>	Global fit measures				Residual-based indices	
		<i>CFI</i>	<i>AIC</i>	<i>BIC</i>	χ^2	<i>RMSEA</i>	<i>SMSR</i>
Women's Rights	9	.959	3861.3	3927.6	49.209	.111	.032
Sanctity of Life	7	1.000	3003.0	3057.6	7.089	.006	.010
Life History	6	.966	2667.7	2726.2	1.049	.110	.034

Note: CFI = Comparative Fix Index; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; RMSEA = Root Mean Square Error of Approximation; SMSR = Standardized Root Mean Square Residual

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Figure 1. Graphical depiction of theoretical models

Note: Each rectangle represents a construct of interest. One-way arrows represent predictive paths. Two-way arrows represent covariation. A: model based on Women's Rights construal of abortion attitudes. B: model based on Sanctity of Life construal of abortion attitudes. C: model based on predictions from Life History Theory.

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Figure 2. Fitted structural equation model with standardized estimates of direct and indirect effects and fit measures, based on the Women's Rights approach to abortion attitudes.

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Figure 3. Fitted structural equation model with standardized estimates of direct and indirect effects and fit measures, based on Sanctity of Life as the main construct driving abortion attitudes.

Fit measures:

$\chi^2_{(11)} = 7.090$ ($p = .420$)

$CFI = 1.000$

$AIC = 3002.991$

$RMSEA = .006$

$SRMR = .010$

Indirect effects via Sanctity of Life:

Religiosity $b = -.02$, $p = .048$

Benevolent Sexism $b = -.01$, $p = .083$

Sexual Morality $b = .01$, $p = .103$

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Figure 4. Fitted structural equation model with standardized estimates of direct and indirect effects and fit measures, based on Life History Theory predictions.