Gender and sexuality meet science and religion:
a narrative literature review of contemporary Mexico and Spain

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Introduction

Gender and sexuality are two fields profoundly influenced by the interplay of science and religion, particularly in their roles in shaping perceptions of male and female traits, behaviours, and societal roles. Religious scriptures, dogmas, rituals, evolutionary theory, and biomedical technologies are among the key elements influencing the alliances and disputes between scientific and religious institutions in classifying bodies as (un)desirable or (ab)normal. The historical evolution of this process has generated a substantial body of research grounded in science and religion. Some of the arguments emerging from this scholarship have become central in global political and social debates surrounding gender and sexuality. Examining “how” and “in which ways” both systems perceive male and female bodies in different historical and cultural contexts provides crucial insights into the moral and discursive arguments underpinning these disputes (Delgado-Molina et al., 2023).

In this article, we delve into some of these debates by analysing existing empirical research conducted over the last two decades, focusing specifically on the intersections of gender, sexuality, science, and religion. We aim to redress the existing research bias, which largely centres on English-speaking countries, by shifting our attention to Spain and Mexico. To undertake this task, we conducted a comprehensive narrative literature review across three databases: Web of Science, Scopus, and Google Scholar. Our review encompassed articles, books, and book chapters published from 2002 to 2022, with the aim of uncovering implicit and explicit assumptions regarding the interplay of gender and sexuality within the realms of science and religion. To achieve this, we employed various combinations of search terms, commencing with “science,” “religion,” “gender,” and “sexuality,” and subsequently expanding to terms that could potentially lead to this intersection, such as “genetics,” “God,” “biology,” “natural,” “faith,” “Christian,” “Muslim,” “Jewish,” “determinism,” “moral,” and “sex.” Additionally, we included “Spain” and “Mexico” as fixed search terms. We also incorporated publications referenced within the selected articles, as well as those identified through our prior research in this field. The resulting body of literature was then categorized according to key themes, allowing us to map the primary debates and arguments within these domains.

Our exploration will start by examining scholarship that delves into the historical development of the sex-gender system and its evolution in response to technological and medical advancements during the 20th century. This will be succeeded by a second theme, focusing on the divergent scientific and religious perspectives that have framed the female body, specifically concerning reproductive matters. The third section will illuminate the social and political
challenges faced by LGBTIQ+ individuals and their bodies. The last section briefly highlights distinct themes unique to each country. Finally, our conclusions will encompass our final thoughts and present insights into the future directions of this field.

**Context: (De-)localising Social and Political Disputes**

Discussions concerning the body have consistently been at the core of feminist and LGBTIQ+ movements. These debates have become more evident over the past three decades, since feminist, queer, and decolonial critiques in/from academia and civil society have been redefining the role of the diverse bodies and their agency in social life, challenging, and reflecting upon hegemonic views on gender politics coming from the global North. Whether these movements adopt more progressive or conservative stances on gender and sexuality, religious and scientific arguments often play pivotal roles in debates concerning sexual and reproductive health and rights.

Over the past two decades, Spain has witnessed four significant events that have exerted a profound impact on sexual and reproductive rights (Cornejo et al., 2017). These include: the legalization of same-sex marriage in 2005; the enactment of the Abortion Law in 2010, which allows voluntary interruption of pregnancy; the introduction of “Education for Citizenship and Human Rights” in public school curricula in 2006; and the Conservative Party’s victory in the 2011 national elections, leading to increased influence of the Catholic Church and discussions regarding changes in abortion legislation.

More recently, Spain’s parliament passed laws on sexual and reproductive health in March 2023, bringing about significant changes. These reforms eliminated the need for parental consent for abortions for minors under the age of 16, provided sick leave for menstrual-related illnesses, and granted free access to the morning-after pill.

In addition to these reforms, Spain’s parliament also passed a “trans law” in February 2023. This law recognizes the freedom to choose one’s own gender, prohibits conversion therapy, and establishes rights for intersex individuals, among other provisions. In response, segments of the feminist movement, the Catholic Church, and far-right lawmakers vehemently opposed the measure, which underwent legislative deliberations for over a year. Notably, Hazte Oír (“Make yourself heard”), a Spanish group known for its traditionally conservative views on gender, organized a national bus tour as part of their protest.

In Mexico, significant developments in sexual and reproductive rights have occurred since the decriminalization of abortion in Mexico City in 2007. Until recently, eleven federal states had altered their local laws to legalize abortion. In 2021, the Supreme Court of Justice of the Nation declared the outlawing of abortion unconstitutional and affirmed the freedom of pregnant individuals to make their own decisions without fear of legal repercussions. In September 2023 the Supreme Court ruled a full recognition of abortion up to the first thirteen week of pregnancy. Additionally, the approval of same-sex marriage within Mexico City’s borders in 2009 has sparked conflicts between conservative organizations and LGBTIQ+ movements. Since 2015, the Supreme Court has mandated that all judges must consider the protection of minority rights when adjudicating cases involving these groups, a declaration endorsed by several Mexican states.

In 2016, then-President of Mexico, Enrique Peña Nieto, proposed legislation to legalize same-sex marriage nationwide. This initiative encountered strong opposition from pro-traditional family organizations, primarily connected to the Catholic Church through the Friederich Naumann Foundation. Interestingly, the same organization has protested transgender rights in Spain, highlighting their involvement in various conservative stances regarding LGBTIQ+ and reproductive health and rights issues. Although the nationwide legalization of same-sex marriage was not achieved, progress on this front, as well as the decriminalization of abortion and advancements in LGBTIQ+ rights, continued to occur at the municipal level across Mexico.
Common Grounds Between Mexico and Spain

Historical Unfolding of the Sex-Gender System

When we delve into the historical development of the sex-gender system, it becomes evident that science and religion have not evolved entirely separate bodies of knowledge. Moral and ideological stances, rooted in religion and spirituality, still exert influence on contemporary scientific production. The dialectical relationship between science and religion, marked by both mutual antagonism and collaboration, has been instrumental in shaping these fields. The presence of historical phenomena ranging from alchemy to plagues and the development of psychiatry have blended scientific and religious knowledge, attesting to this complex relationship. For instance, the Manuals of Hygienist state policies, popular in the latter half of the 19th century, have been central subjects of research in this domain. These publications provided normative guidelines on sexual practices within marriage, often promoting “moderation in pleasure” (McK inney, 2015).

In this vein, Walin (2021) underscores issues of scientific legitimacy as foundational to the understanding of sexual differences within hygienist medicine. This perspective aligns with Lopez’s (2019) view in Mexico, emphasizing the role of hygienist manuals in propagating hierarchical and complementary notions of male and female gender roles. Here, women are depicted as subservient to men’s needs and requirements, with complementarity giving rise to narratives that emphasize women’s sacrifice for the species rather than themselves. Walin (2021) further explores the Catholic affiliations of these academics in Spain and their opposition to women’s rights. This scientific inclination to attribute biological dimensions to social life has played a role in shaping the policies of conservative political parties rooted in these arguments, reinforcing existing oppressive power structures in the process.

In contrast to the Catholic perspective, Lopez (2019) argues that romantic love and marriage, championed within hygienist manuals, aligned with the neoliberal requirements of Mexico’s industrializing society. Along with this perspective, scholars pointed out that the emergence of the scientific-religious relationship contributed to the demographic foundation of capitalist modes of production (Corrêa & Parker 2004).

In Spain, much of the focus has centred on the Franco regime, particularly between 1946 and 1968, when guides on sexuality reinforced male dominance over women’s bodies while simultaneously acknowledging women’s right to experience sexual pleasure (García, 2017). These guides reflected the tensions that preceded the Church’s reduced influence during the late Franco era. Controversies, such as those sparked by Paul VI’s Humanae Vitae (1968),1 challenged the Church’s moral authority, forcing it to acknowledge the possibility of separating the affective and procreative aspects of sexual expression within marriage. Discrepancies existed regarding women’s right to sexual enjoyment and the subordination of their sexuality to male control, signalling the early stages of the sex-gender reconfiguration that would become evident during the Democratic Transition (García, 2021).

The literature examining Mexico frequently references the onset of Spanish colonial rule in the 16th century. De Los Reyes (2010) investigates the methods employed by the Church, the Inquisition, and the Crown to reshape the sexuality of colonized subjects. The incorporation of mythological elements, such as the fear of sodomy associated with the tale of Sodom and Gomorrah, played a role in imposing moral authority on colonial inhabitants. Concepts of paradise and hell were likewise effective in instilling fear of eternal punishment, while the institutionalization of marriage and family models in colonized territories facilitated the Christianization of local societies. Nevertheless, resistance to colonial authority’s control mechanisms also contributed to the profound alterations in sex-gender dynamics during this period. Hisey (2017) discusses the persistence of practices such as “amancebamiento,” referring to cohabitation and sexual relations outside of marriage, which continued to exist despite condemnation. Dissenting interpretations of Catholic teachings that incorporated such practices also emerged and faced censure.
It is worth noting that the literature from both countries presented similar perspective when analysing the most recent transformations in individual experiences of manhood and womanhood. Amuchástegui and Szasz’s (2007) book highlights various facets of male discomfort with masculinity in the context of Mexico and Latin America. Through discussions of paternity, sexuality, reproductive health, and violence, the testimony of men who feel threatened by their gender roles is brought to the forefront. Alternatively, González (2010) examines changes in the association between women and motherhood in Spain and the “nature and/or nurture” debate from both religious and scientific perspectives. Attitudes and perceptions based on stereotyping male and female roles have been explored by Rodrigo-Alsina (2016) who analyses prejudices related to religion, gender, sexuality, and cultural diversity in news reports. Conversely, Mexican scholars emphasize contemporary investigations into the societal consequences of childlessness in Mexico (Hernández, 2019), the relationship between religiosity and contraceptive use among Mexican teenagers (Vargas, 2010), and sexual education provided by Mexican mothers to their American daughters (González, 2003).

Furthermore, an understanding of the role of science and religion in reshaping the sex-gender system is also made through the analysis of cultural products. Martykánova (2017), for instance, examines Pérez Galdós’ literary works and describes his portrayal of Spain as a nation divided between religious traditionalism and scientific progress during the late nineteenth century. Notably, while contemporary research on the content of sexuality guides exists for Mexico (Daz, 2020), such analyses are primarily addressed as historical issues in Spain (García, 2017).

Women’s Bodies and Reproductive Matters
Numerous publications scrutinize the tendency of religious and scientific explanations to frame female behaviours and women’s bodies. These explanations often categorize women as either healthy or unhealthy, or as adhering to “good” or “bad” moral principles (Fulgari, 2007). In the Spanish context, as addressed by Ortiz-Gómez and Ignaciuk (2018), we encounter an alliance between liberal segments of late-Francoist medicine and emerging feminism. This alliance revolves around shared demands for family planning centres and greater equity in the doctor-patient relationship. Surprisingly, the Catholic Church recognized the problematic use of the notion of the “good Catholic woman,” positioning itself as an inadvertent ally in supporting certain forms of women’s control over their bodies. This historical connection between organized women and hegemonic medicine has complicated the relationship between science and female emancipation. In this context, feminists have showed strong opposition medicalization processes and the hierarchical doctor-patient dynamic (Gómez & Ignaciuk, 2018).

Similar conclusions are drawn in the Mexican context, where the Federal District of Mexico City Legislative Assembly decriminalized abortion before the 12th week of pregnancy in 2007. This action prompted discussions on the confluence of Catholic conceptions of femininity and contemporary frameworks of citizenship, rights, freedom, and responsibility (Amuchástegui et al., 2015). Notably, some feminist movements began to consider Catholics as valid participants in these debates. Amuchástegui et al. (2015) highlight the strategic deployment of scientific language to advance conservative positions on gender and sexuality, despite the traditional association of scientific language with the defence of Sexual and Reproductive Health and Rights (SRHR).

In this context, Morán (2015) introduces the category of “internalized religiosity” to describe NGOs that employ scientific and legal arguments to support policies attributed to religion. Morán argues for the use of the term “heteropatriarchal activism,” contending that the inclusion of secular elements in opposition to SRHR signifies a dilution of the religious component. Maier (2007) discusses the debate over the significance of women’s bodies and sexualities in the Mexican context, framed as a cultural clash between polarized societal conceptions rooted in religious narratives and the male ecclesiastical hierarchies on one side, and the secular and individualistic premises of modernity on the other.
Perspectives on/from LGBTIQ+ People

The above-mentioned scholarly perspectives have often included LGBTIQ+ issues in its content. Yet, while there are clear connections, for instance, between the framing of female and LGBTIQ+ bodies within the sex-gender system, we recognize the need to address the specificities of this topic independently.

In Mexico, the literature has primarily concentrated on contemporary pictures of violence and discrimination based on empirical studies and their relation to the historical development of the sex-gender system by religion in the country. Numerous publications have employed this approach to analyse current contentious issues, dating back to Fonseca and Quintero’s (2009) exploration of theological questions through the lens of queer theory. López (2018) examines the countermovement opposing LGBTIQ+ rights in Mexico and concludes that religious opposition, primarily catalysed by the Catholic Church but also present in evangelicalism and other institutionalized faiths, along with the defence of the traditional family, constitute central elements of this phenomenon. This perspective aligns with Pineda’s (2013) etiological exercise on suicidal ideation in LGB adolescents, which identifies religion and family as the primary sources of homonegativity. We identified several studies that have consistently arrived at similar findings.

Mexican literature has provided insight into the violence experienced by LGBTIQ+ individuals, particularly concerning access to medical care. Granados-Cosme (2022) outlines the prejudice that LGBTIQ+ individuals face when seeking medical attention, with internalized ideas stemming from Catholicism playing a significant role in promoting verbal, physical, and symbolic discrimination. This discrimination results in poor patient-physician communication, neglect of other aspects of health, and discouragement among group members from seeking medical attention.

Despite these challenges, the LGBTIQ+ community in Mexico has developed strategies for engaging in public discussions about gender, sexual orientation, and HIV. Among these strategies, they have challenged the individualized approach to HIV prevention discourse, which often focuses on the risks faced by individuals. This perspective challenges the paradigm of “vulnerability,” which implies that directing funding and attention to “targeted populations” reinforces the moral regulation of sexuality. Amuchástegui (2017) introduces the paradigm of resistance as an alternative to the attribution of vulnerability or risk by formal authorities. The author gives epistemic significance to the experiences of individuals engaged in peer counselling and advice, highlighting the subjective recognition that takes place among peers.

In Spain, historical analyses of events have been prevalent, including examinations of prevalent beliefs about homosexuality in early 20th-century Spain. According to Cleminson (2004), Lucenay’s work contains the seeds of reading strategies for the public recognition of sexual diversity still in use today, such as the search for genetic explanations. Galeano (2021) and Fernández (2021) discuss how new interpretations of Catholic dogmas were formulated to address homoeroticism during the Franco era.

In the Spanish context, a substantial body of literature has framed Western conceptions of the body and its constraints when considering sexual dissidence (Moya and Bergua, 2018). This scholarship explores how the normalization of marginalized sexualities has led to the acceptance of essentialist, naturalizing, and heteronormative conceptions of sexuality without substantial challenge (Cáceres, 2016). Additionally, Cornejo et al. (2013) address a potential collision between the right to be free from discrimination based on sexual orientation and the right to be free from discrimination based on religious beliefs. The author concludes that the defence of the traditional family and the primacy of religion over sexuality are prominent in this debate, along with the deliberate avoidance of conciliatory options between faith and sexuality.
Country-Specific Themes

Beyond the commonalities found in the literature from both countries, there are also country-specific aspects that explore social and cultural idiosyncrasies influencing the intersections examined in this article. A key subject in the Mexican literature focuses on the practices and explanations of traditional medicine, with its unique indigenous and popular features. The spiritual dimension of traditional medicine often contrasts with scientific knowledge, leading to the exclusion of indigenous ancestral practices in a postcolonial context (Saenz, 2021). Traditional medicine is also linked to gendered mythical backgrounds that shape conceptions of gender roles integral to the reproduction of social structures (Peña, 2021). In modern Mexico, several urban phenomena incorporate elements of magic and religion (Garzón, 2015). These studies provide evidence of the development of counter-hegemonic health approaches as forms of individual resistance to scientific knowledge.

In Spain, we highlight a distinctive field of histories who focused on the national Catholic project of Franco’s regime. This scholarship examines how the regime sought to reconcile hegemonic scientific frameworks with prevailing ecclesiastical doctrine. One example of this reconciliation is evident in the theory of evolution, which incorporated finalistic and mystical components inspired by Teilhardian thought to align with institutional ideology (Pelayo, 2012). The regime also used a sexist discourse to present individuals with scientific backgrounds as embodying “gallantry” and “dynamism,” personifying “masculinity” in a new heroic character (Danet & Medina-Doménech, 2014). Moreover, Franco’s dictatorship grappled with debates surrounding the use of science to establish mechanisms for collective discipline and control, with eugenics initially considered a viable option. Certain strands of Catholic dogma distanced themselves from eugenics, which they viewed as biologist and materialistic. During the early phase of Franco’s rule, discussions regarding sterilization of criminals and the punishment of female bodies using these mechanisms took place, despite strong opposition from the Church (Campos, 2018).

Concluding Remarks and Future Directions

Our research underscores the significant influence of medical and biological advancements in shaping the binary sex-gender system as the dominant framework for understanding gender and sexuality. At times, this knowledge has supported strict religious norms and morals associated with masculinity and femininity, promoted by fascist regimes and religious actors. In this regard, empirical research in Spain and Mexico reveals that the female body is a contested terrain involving disputes and negotiations among political, cultural, religious, and scientific narratives. However, the scholarship in Spain and Mexico on this topic varies in its temporal focus. Mexican literature provides a rich understanding of contemporary forms of violence faced by women and LGBTQ+ individuals. Scholars focusing on Spain tend to centre their research on the socio-political struggles of LGBTQ+ individuals during the Spanish Civil War and the Francoist Fascist regime.

The present analysis also highlights that, when examining gender and sexuality, science is often associated with the Western world, while religion is positioned more frequently in the global South, associated with migrants or ideologically conservative populations. In the Mexican context, scholars have explored traditional medicine in contrast to mainstream or conventional medicine. In Spain, gender and sexuality have been primarily examined through the lenses of science and religion, particularly in relation to Franco’s National Catholic Project. Moreover, the common categories that emerge from our analysis frame binary perspectives stemming from religion and science as obstacles to a more nuanced understanding of sexual gender identity and expression, underscoring the need for additional research that can capture the complexity of this area.

When analysing the debate on gender, science, and religion, it is crucial to recognize that the boundaries between religion and science are not fixed or stable but rather contingent and subject to constant negotiation. The border that distinguishes and delineates the difference between science and religion is a space
of tension that evolves over time. Notably, the centrality of issues related to gender and sexuality, particularly the politics of controlling the body through biological and medical arguments, is a distinctive feature in this ongoing debate.

Notes
1 Humanae Vitae is the seventh encyclical written by Paul VI. It defines the doctrine of the Catholic Church on contraceptive methods and other measures related to human sexual life. Denying any kind of artificial birth control, its publication was controversial.

2 This line of thought follows Pierre Teilhard de Chardin early 20th philosophy that blends science and Christianity into the theory that humanity is evolving, mentally and socially, toward a final spiritual unity (see Encyclopaedia Britannica 2023).

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