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Attitudes toward same-sex marriage and parenting, ideologies and social contacts: the
mediation role of sexual prejudice moderated by gender

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Abstract

1
2 Recognition of same-sex marriage and parenting has increased in the last two decades
3
4 but remains a controversial issue in which public opinion plays a role, as it can influence
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6 political leaders but also determine the immediate environment of same-sex families. The
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8 literature highlights the effect of religiosity, political orientation, beliefs about etiology of
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10 homosexuality and social contacts with gay men and lesbians on attitudes toward same-sex
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12 marriage and parenting (ASSMP). The aim of this study was to explore the under-studied
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14 mediation role of sexual prejudice in this process and how participants' gender moderated the
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16 mediation effects. Data were collected from 1416 heterosexual French students and analyzed
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18 with moderated mediation models in accordance with recent recommendations from Hayes
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20 (2013). Sexual prejudice mediated the effects of religiosity, political orientation and
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22 etiological beliefs on ASSMP more strongly in men than in women. It also mediated the
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24 effect of contact with gay and lesbian persons and same-sex couples on ASSMP in men but
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26 not in women. The results highlight the need to explicitly deconstruct negative beliefs about
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28 homosexuality during debates about same-sex marriage and same-sex parenting, even when
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30 prejudice against homosexuality itself is not explicit in opponents' discourse.
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43 Keywords: attitudes toward same-sex marriage and parenting; mediating role of sexual
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45 prejudice moderated by gender; religiosity; political orientation; etiological beliefs about
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47 homosexuality; social contacts
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2 Attitudes toward same-sex marriage and parenting, ideologies and social contacts: the
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4 mediation role of sexual prejudice moderated by gender
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12 Public opinion plays a role in the evolution of the rights of sexual minorities as it can
13 influence political leaders, and it partly determines the immediate environment in which
14 people from these minorities live, which in the worst cases constitutes a source of rejection
15 and stress and in the best cases a source of legitimization and support (Lax & Phillips, 2009).
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17 In this context, attitudes toward same-sex marriage and parenting provide an insight into the
18 social context to which same-sex families are exposed, and some studies suggest that having
19 the right to marry can be positively associated with the psychological wellbeing of lesbian,
20 gay, and bisexual persons (Rostosky, Riggle, Horne, & Miller 2009; Wight, LeBlanc, &
21 Badgett, 2013; see also the resolution of the American Psychological Association on equal
22 access to same-sex marriage, 2011). Conversely, the prohibition of marriage is likely to be
23 associated with greater psychological distress (stress, anxiety, depressive symptoms...)
24 (Giametti & Green, 2011; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010). Thus,
25 legislative progress worldwide is legitimized by its beneficial effects on the individuals
26 concerned and their families. This study aims to extend actual knowledge about the factors
27 that influence attitudes toward same-sex marriage and parenting, by examining the mediating
28 role of sexual prejudice moderated by gender in this process.
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52 Since the end of the twentieth century, many countries have made changes to their
53 legislation in order to protect sexual minorities, especially in the areas of health, work, and
54 housing, and significant advances have also been made in relation to family rights (Carroll &
55 Mendos, 2017). For example, around twenty countries around the world have made it possible
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1 for same-sex couples to marry, adopt, and even to access assisted reproduction. The growing
2 number of alternatives available to infertile heterosexual couples desiring to have children,
3
4 namely in-vitro fertilization and surrogate pregnancy, now allow some same-sex couples to
5
6 realize their own dream of starting a family. Nonetheless, only a small minority of countries is
7
8 fully supportive of same-sex parenting (Carroll & Mendos, 2017).
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11 **Legalization of Same-Sex Marriage and Parenting in France**

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15 Public opinion can have a direct effect on supporting, rejecting or, at least,
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17 determining the nature of bills concerning the recognition of same-sex families. Indeed, two
18 referendums were held in European countries in 2015 on the question of permitting same-sex
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20 couples to marry: the bill became law in Ireland but was not passed in Slovenia (Carroll,
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22 2016). Legislative progress on the issue also depends on the political will of the powers that
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24 be. To increase the legitimacy of bills whose aim is to prohibit or support same-sex parenting,
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26 governments taking positions on these questions can rely at least partially on public opinion,
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28 as indicated by public surveys and public demonstrations by those who support or oppose
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30 such developments. In France, the bill to legalize same-sex marriage and adoption, which was
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32 part of President Hollande's election manifesto, before it was finally passed on 18 May 2013,
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34 and well beyond, met with considerable opposition, the extent of which was doubtless
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36 unexpected. This movement probably led the government to withdraw access to MAP
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38 (medically assisted procreation) for lesbian couples from their bill, a provision contained in its
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40 initial version (Stambolis-Ruhstorfer & Tricou, 2017). Almost three years later, in February
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42 2016, the Ministry for the Family, Children and Women's Rights even declared itself opposed
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44 to the reopening of this debate for fear of the re-emergence of this opposition movement
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46 (Mallaval & Luysen, 2016). As in many other countries, in France far right movements are
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48 more conservative than leftist ones in terms of social questions, as demonstrated by the recent
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50 debate on access to marriage and adoption. This movement was largely centered in, but not
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1 limited to, religious and political communities. Most religious institutions in France, including
2 the Catholic Church which represents the majority religion, condemn GL (gay men and
3 lesbian) activity, or at least the granting of the right of access to marriage, parenting, and,
4 more broadly, social recognition of same-sex parenting (Béraud, 2015). Research literature
5 also clearly shows that the higher the degree of religiosity, the more negative are attitudes
6 toward the marriage of same-sex persons (for example Barth, Overby, & Huffmon, 2009;
7 Becker, 2012; Duncan & Kimmelmeier, 2012; Hollekim, Slaatten, & Anderssen, 2012; Lee &
8 Hicks, 2013; Merino, 2013; Olson, Cadge, & Harrison, 2006; Todd & Ong, 2012) and same-
9 sex parenting (Becker, 2012; Hollekim et al., 2012 ; Morse, McLaren, & McLachlan, 2007 ;
10 Sigillo, Miller, & Weiser, 2012). Concerning political orientation, studies have shown that
11 liberal individuals are more supportive than conservative ones of change and social equality,
12 preferring, as they do, social progress to tradition (Jost, Federico, & Napier, 2009). As a
13 consequence, the more conservative individuals claim to be, the less supportive they are of
14 same-sex unions (for example, Barth et al., 2009; Becker, 2012; Duncan & Kimmelmeier,
15 2012; Hollekim et al., 2012; Lee & Hicks, 2013; Todd & Ong, 2012) and same-sex parenting
16 (Becker, 2012; Hollekim et al., 2012), and the more they predict confusion in the children of
17 same-sex couples in terms of their gender identity and sexual orientation (McLeod, Crawford,
18 & Zeichmeister, 1999).

19 In addition to religiosity and political orientation, past research has also highlighted
20 the role played by erroneous beliefs about homosexuality or lack of knowledge about sexual
21 minorities in creating opposition to same-sex marriage and parenting. In particular, they have
22 brought to light connections with beliefs about the etiology of homosexuality and contacts
23 with sexual minorities. According to the Attribution Theory individuals perceive behaviors as
24 being voluntary or involuntary and this perception in turn influences attitudes toward these
25 behaviors: thus, individuals are less tolerant of voluntary behaviors than of involuntary ones

(Weiner, 1979). When applied to sexual orientation, this theory has elicited the explanation that individuals who think that being gay or lesbian is biologically determined (involuntary), have more positive attitudes toward GL persons than those who think that it is acquired and that it springs from a choice (involuntary) (Whitley, 1990). More recently, Hegarty (2002) emphasized the role of culture in these processes, showing that the immutability beliefs only correlated with tolerance toward GL persons when these beliefs were perceived as expressions of tolerance, but only in an American sample and not in a British sample. The difference observed with attitudes toward GL persons has also been established with the attitudes toward same-sex marriage: the more strongly individuals believe that being gay or lesbian is a choice, the less they support marriage for same-sex persons (Duncan & Kemmelmeier, 2012; Frias-Navarro, Monterde-i-Bort, Pascual-Soler, & Badenes-Ribera, 2015) ; the more they think that being gay or lesbian is an acquired characteristic, the more they think that same-sex parenting has deleterious effects on children's psychological adjustment (Frias-Navarro & Monterde-i-Bort, 2012) and the less they support adoption by same-sex couples (Frias-Navarro et al., 2015). Finally, research in the field of social contact minority groups has also contributed valuable knowledge about attitudes toward these groups. Numerous studies have supported Allport's hypothesis of social contact (1954), according to which negative attitudes toward stigmatized groups diminish as a result of direct interaction with these groups (Pettigrew & Tropp, 2006). Such contacts are likely to increase empathy, reduce anxiety, and thus reduce prejudice, especially if they are high-quality contacts that allow discussions on what means being gay or lesbian in everyday life (Herek, 2009a; Herek & Capitano, 1996). This conclusion is valid for the attitudes of heterosexual persons toward GL persons (Smith, 2009). In a meta-analysis of studies on the role of social contact, Lewis (2011) states that having gay/lesbian friends increases the likelihood of support for sexual minority rights such as marriage and adoption. The study of Barth et al. (2009) of a random

1 sample of adults reveals that the more contact participants have with GL persons, the more
2 supportive they are of same-sex marriage. In another random sampling of adults, Morse et al.
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4 (2007) observe no difference in the evaluation of parental competences in gay/lesbian parents
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6 nor in the risk incurred by their children, whether they have contacts with GL persons or
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8 same-sex parents or not. Furthermore, Barth and Parry (2009) suggest that knowing at least
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10 one GL person has a weaker effect on attitudes to marriage and same-sex parenting than on
11
12 attitudes to gay or lesbian persons. According to Costa, Pereira and Leal (2015), contacts have
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14 a positive effect on attitudes toward same-sex marriage and parenting only if such contacts are
15
16 frequent, fostering ease in relationships and thus reducing sexual prejudice. As noted by these
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18 authors, sexual prejudice seems to be a key concept for understanding the processes
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20 underlying attitudes toward same-sex marriage and parenting. Indeed, the literature
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22 empirically shows the pertinence of distinguishing attitudes toward GL persons from attitudes
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24 to the rights that could be granted to them (Herek, 2009a), as studies show a negative and
25
26 significant correlation between sexual prejudice and support for equal rights for sexual
27
28 minorities. However, this correlation is too weak to conclude that these two concepts are
29
30 similar, or that sexual prejudice completely reflects the points of view on social policies that
31
32 concern them (Herek, 2009a, Hooghe & Meeusen, 2013; Moskowitz, Rieger, & Roloff,
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34 2010).

43 **The Moderated Mediating Role of Sexual Prejudice and Gender**

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46 Two reasons lead us to hypothesize a mediating role of sexual prejudice. Firstly,
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48 during the debates on the opening of marriage and adoption to same-sex couples in France,
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50 the question of the role of sexual prejudice in the positions taken by opponents of the bill also
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52 arose. Certainly, the official arguments of the opposition movements were not based on
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54 rejection of homosexuality itself, but rather on adherence to a traditional conjugal (one man
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56 and one woman) and familial (a child raised by one mother and one father) model that
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1 presumably provides social stability and durability, as well as satisfactory development for
2 any children involved. Moreover, many opponents denied that their mobilization was the
3 expression of sexual prejudice, which is all the more comprehensible since homophobic acts
4 and speech are punishable under French law. In spite of this, numerous homophobic
5 pronouncements were put forward, even publically, by political representatives, who, for
6 example, associated homosexuality with pedophilia, incest, zoophilia, or even terrorism (for
7 example, see Ortelli, 2012). This homophobic context created a negative climate for GL
8 persons and their families, as witnessed by GL support associations (Le Refuge, 2014; SOS
9 Homophobie, 2014). This omnipresence of sexual prejudices leads us to believe that the
10 effects of religiosity, political orientation, beliefs about etiology of homosexuality and social
11 contact with sexual minorities on attitudes toward same-sex marriage and parenting are not
12 direct effects only.

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29 Secondly, the literature supports the idea of a central role played by sexual prejudice in
30 these questions. On the one hand, it shows that sexual prejudices are higher with higher levels
31 of religiosity, right-wing political orientation and beliefs that homosexuality is learned, and
32 when contacts with gay and lesbian people are low (Herek, 2009b). On the other hand, as far
33 as attitudes toward same-sex parenting are concerned, previous studies have revealed that
34 people with high level of sexual prejudice are less in favor of same-sex marriage (Moskowitz
35 et al., 2010), evaluate the parental competence of GL persons less positively (Massey, 2007;
36 Massey, Merriwether, & Garcia, 2013), and are less disposed to entrust a child to a same-sex
37 couple than to a heterosexual couple (Fraser, Fish, & McKenzie, 1995). Beyond the
38 association of sexual prejudice with, on the one hand, religiosity, political orientation, beliefs
39 about etiology of homosexuality and contacts with sexual minorities, and on the other hand,
40 attitudes toward rights of sexual minorities, few studies have been conducted on the role of
41 sexual prejudice in these processes and, as we will explain below, the statistical method used
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1 to examine mediating effects is now the object of considerable criticism (Hayes, 2013). The
2 study by Smith, Zanotti, Axelton and Saucier (2011) on the relationships between beliefs
3 about gay/lesbian etiology and political support for civil rights for GL persons encourage an
4 investigation in this direction. It revealed that the more people think that the origin of
5 homosexuality lies in the social environment, the more their attitudes toward GL persons are
6 negative and, naturally, the less they support legislation in favor of this minority group.
7 However, the mediating effect has not been examined for other important factors, such as
8 religiosity, political orientation, and contact with GL persons.

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19 Finally, an explanatory model focusing on direct effects, which does not take into
20 account indirect effects, would lead to a form of impotence in the field of intervention since it
21 suggests that there are few opportunities for raising public awareness about the importance of
22 protecting and supporting same-sex marriage and parenting. Indeed, beliefs about the etiology
23 of homosexuality can be modified, however essentialist beliefs are controversial and could be
24 problematic bases for challenging sexual prejudice and promoting equal rights for sexual
25 minorities (Haslam, 2006): indeed, biology can be synonymous with nature and therefore
26 associated with more acceptance, but biology can also be synonymous with genetic and/or
27 biological pathologies that could be fixed with medical advances. Moreover, interventions
28 cannot aim to reduce religiosity, right-wing political orientation, or force people to get closer
29 to sexual minorities. In France, the debates and arguments for and against the bill have mostly
30 focused on the risks for children in being raised by same-sex parents, and on the prospect of
31 legalization of surrogacy (Le Monde, 2013, 2013). Emphasizing a central role of sexual
32 prejudice would encourage greater attention to the deconstruction of sexual prejudice as a tool
33 to change attitudes toward same-sex marriage and parenting.

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56 Additionally, exploring the role of sexual prejudice in these processes involves taking
57 gender into account. Indeed, decades of research have shown an effect of gender on sexual
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1 prejudice, with men revealing more negative attitudes toward GL persons than women
2 (Herek, 2009a). A consensual interpretation highlights the relatively higher status of the male
3 gender role compared with the female gender role in society, so that men have more to lose
4 when they step outside their gender role than women (Whitley & Kite, 2009). In addition,
5 most studies that have examined the effect of gender on attitudes toward same-sex marriage
6 (for example, Lee & Hicks, 2013; Merino, 2013; Todd & Hong, 2012) or same-sex parenting
7 (for example, Becker, 2012; Hollekim et al., 2012; Sigillo et al., 2012; Webb, Chonody, &
8 Kavanagh, 2017) have revealed more positive attitudes in women than in men. In this regard,
9 it is likely that the effect of sexual prejudice depends on gender, and, to date, no study has
10 examined such a moderating role of gender on the mediation effect of sexual prejudice.
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24 **The Current Study**

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Considering the potential influence of citizens' attitudes toward legislation supporting civil rights for GL persons, the current study focused on students' attitudes toward same-sex marriage and same-sex parenting during the period of debates on the opening of marriage and adoption to same-sex couples in France (2012-2013). The overall aim of this study was to provide a more complex understanding of attitudes toward same-sex marriage and parenting, focusing on three specific aims.

The first aim of this study was to examine the association between, on the one side religiosity, political orientation, sexual prejudice, beliefs about the etiology of homosexuality and social contact with GL persons, same-sex couples and same-sex parents and, on the other side, attitudes toward same-sex marriage and parenting. Previous considerations have led us to hypothesize that the higher the levels of sexual prejudice, religiosity and beliefs that homosexuality is learned, the less participants are in favor of same-sex marriage and parenting. Conversely, the higher the levels of left-wing political orientation, the number of

1 This study took place in France and focused on the French participants in the program
2 *European Research on Heterosexual Attitudes towards Same-Sex Couples and Parented*
3 *Families* run in 7 European countries (Belgium, France, Greece, Italy, Poland, Portugal,
4 Spain). Data were collected between April 2012 and November 2013. In France, on May 18,
5 2013, the President of the Republic introduced a bill to open marriage and adoption rights to
6 same-sex couples, which was passed by the National Assembly after 8 months of tumultuous
7 debate in the Parliament and across the country. Data were collected online (through
8 SurveyMonkey), in line with the regulations of the *National Commission on Informatics and*
9 *Liberty* and ethical approval was granted by the University of Angers' Ethics Committee. A
10 survey link was sent by email to the students at the Universities of Nantes and Le Mans and
11 the School for Advanced Study in the Social Sciences in Paris, and posted on the website and
12 the Facebook page of Paris Nanterre University. Informed consent was obtained from all
13 individual participants included in the study.

14 In France, 2263 students participated. In order to avoid a language bias, participants
15 were included in the final sample only if they were born in France and/or had French
16 nationality. Moreover, in order to allow comparisons with previous international studies,
17 participants were over 18 years old, enrolled in an undergraduate program as a minimum and
18 were self-identified as heterosexual. The final sample included 1416 participants enrolled in
19 more than 120 public or private French universities and schools and ranged in age from 18 to
20 59 ($M = 22.28$, $SD = 4.97$). Seventy percent were women (2 participants did not indicate their
21 gender), 46.5 % were single, separated or divorced, 31.1% were part of a non-cohabiting
22 couple, 16.9% part of a cohabiting couple without marriage or civil partnership and 5.5% part
23 of a cohabiting couple with marriage or civil partnership (3 participants did not indicate their
24 marital status); 65 participants were parents of at least one child (4.6 % of the sample).
25 Religious affiliation included Catholicism (29%), Atheism/Agnosticism (35%), other

1 affiliations (7%) and no affiliation (29%). Almost all participants had French citizenship
 2 (99.7%); information about ethnic background was not available. Based on information
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 4 provided about their field of study, participants were categorized into 3 main fields (48
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 6 participants did not provide this information): Human and Social Sciences (53.6%), Sciences
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 8 (17%), and Law (14.8%). An “Other Fields” category was created for students outside these 3
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 10 main fields (14.6%). Given the difference in the school and university systems in the seven
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 12 countries covered by the study, standard items were created to measure their educational level
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 14 (“What is the highest level of education you have completed?”, and “How many years have
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 16 you been in education since the age of 6?”) but for some participants the responses to these
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 18 two items were mutually inconsistent, or inconsistent with the age of the participant. As the
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 20 answers appeared unreliable, these items were excluded from the analyses.
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27 **Measures**

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 31 **Demographic information and period of data collection.** Participants reported their
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 33 age, gender, marital status, parental status, and field of study. As data were collected between
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 35 April 2012 and November 2013 and the President of the Republic introduced a bill opening
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 37 marriage and adoption rights to same-sex couples on May 18, 2013, we created a variable
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 39 named “period of data collection” with two categories which represented respectively
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 41 participants who completed the questionnaire before this date, and participants who
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 43 completed it on or after this date. These categories respectively accounted for 85.5 % and
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 45 14.5% of the total sample.
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51 **Religiosity.** Religiosity was assessed with 2 items: “How often do you attend religious
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 53 services?” (response options range from 1 (*never*) to 6 (*once a week or more*), and “How
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 55 important is religion for you?” (response options ranged from 1 (*not important at all*) to 6
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 57 (*extremely important*)). Due to the high correlation between these items ($r = .67, p < .001$), we
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1 combined them into a single variable by computing the mean. Higher average scores
2 represented greater religiosity.
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5 **Political orientation.** In France, political orientation is most often described as
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7 extending from extreme left to extreme right (in contrast to the positioning of conservative to
8 liberal used in North America and international research). These terms, which are used in
9 international research literature, are little used in France, where political movements are more
10 usually identified across a range extending from extreme left to extreme right. Above and
11 beyond the cultural and historical reasons that explain these differences, one can add that
12 French political parties may have a liberal position on certain questions, economics for
13 example, while at the same time having a conservative position on others, like societal issues.
14 In this study, political orientation was assessed with a single item: “What is your political
15 orientation from left-wing to right-wing?” (response options ranged from 1 (*extremely right-*
16 *wing*) to 5 (*extremely left-wing*)). This variable was called “Left-wing orientation” as the
17 highest score represented an extremely left-wing political orientation.
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35 **Social contact.** Social contact with GL persons was assessed with 7 items. Three of
36 them assessed the number of gay and lesbian persons known among their family members,
37 friends and colleagues. In order to limit multicollinearity problems, we combined these three
38 items into a single variable named “Number of GL persons known”. To date, previous studies
39 have not taken into account social contact with same-sex couples and same-sex families.
40 Thus, two items of the 7 items assessing the number of gay and lesbian couples they knew
41 were combined into a single variable named “Number of same-sex couples known”. Finally,
42 the two remaining items assessing the number of same-sex families headed by gay couples
43 and by lesbian couples they knew were combined into a single variable named “Number of
44 same-sex parents known”. For each of the three variables created, response options ranged
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Sexual prejudice. Negative attitudes toward GL persons were assessed with the short version of the “*Attitudes Toward Gays and Lesbians*” scale (ATLG) (Herek, 1998): 5 items assessed negative attitudes toward gay men and 5 items assessed negative attitudes toward lesbians (e.g., “Male/Female homosexuality is a perversion). The 10 items were submitted to a principal axis factor analysis with an orthogonal rotation and a single factor was found to account for 60% of the variance and included the 10 items, with factor loadings ranging from .66 through .94. For these items, the response options ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). The internal consistency for this factor was $\alpha = .92$. We combined the 10 items into a single variable and higher average scores represented higher levels of sexual prejudice.

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Beliefs about the etiology of homosexuality. Five items were used to assess beliefs about the etiology of homosexuality (*General Attitudes toward Homosexuality*, Costa et al., 2013: item 1, “Homosexuality is a choice”; item 2, “Parents play an important role in their children’s sexual orientation”; item 3, “Homosexuality is learned through contact with homosexual people”; item 4, “Homosexuality has a biological basis (hormonal or genetic) and thus cannot be changed”; item 5, “Homosexuality is as natural as heterosexuality”). After a reverse-coding transformation applied to items 4 and 5, the 5 items were submitted to a principal axis factor analysis with an orthogonal rotation. The first factor accounted for 28% of the variance and included the items 2, 3, and 5, with factor loadings ranging from .61 through .65. The second factor accounted for an additional 9.5% of the variance and included items 1 and 6, with factor loadings respectively .67 through .33. The internal consistency was moderate for the first factor ($\alpha = .67$) but not acceptable for the 2nd factor ($\alpha = .35$). We finally combined items 2, 3 and 5 into a single variable measuring beliefs that homosexuality is learned. Response options ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher average scores represented greater belief of the fact that homosexuality is learned.

Attitudes toward same-sex marriage. Participants' position toward same-sex marriage was assessed with a single item ("How supportive or unsupportive are you of same-sex marriage now"), response options ranged from 1 (*extremely unsupportive*) to 6 (*extremely supportive*) (Katzuny & Green, 2014). Higher average scores represented greater support for same-sex marriage.

Attitudes toward same-sex parenting. Attitudes toward same-sex parenting were assessed with 8 items from the "*D'Amore and Green on Same-Sex Parenting*" Scale (D'Amore & Green, 2012) (e.g., "In terms of the child's well-being, how do you view adoption by gay men?"). Response options ranged from 0 (always wrong) to 3 (*not wrong at all*) with an additional "I don't know" response (considered as missing data). The 8 items were submitted to a principal axis factor analysis with an orthogonal rotation and a single factor was found to account for 86% of the variance and included the 8 items, with factor loadings ranging from .73 through .96. The internal consistency for this factor was $\alpha = .97$. We combined the 8 items into a single variable and higher average scores represented more positive attitudes toward same-sex parenting.

Results

Group Differences and Basic Associations

Prior to our analysis, we combined our two dependent variables (i.e., attitudes toward same-sex marriage and attitudes toward same-sex parenting) due to the high significant correlation ($r = .81, p < .001$) and thus created a unique variable of attitudes toward same-sex marriage and parenting (ASSMP) by computing the mean of the two scores. From this perspective, as the two scores were assessed on different scales, we first standardized it (score Z, with $M = 0, SD = 1$) and then transformed it into a T score ($M = 50, SD = 10$) in order to avoid negative values and thus provide more understandable graphic representation. Higher

1 average scores represented more positive ASSMP. Moreover, as participants in cohabiting
 2 couples represented less than 23% of the sample, we decided to add them to the non-
 3
 4 cohabiting couples in order to create a “couple” category. This new category was thus
 5
 6 opposed to single participants. Single and coupled participants respectively accounted for
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 8 46.5% and 53.5 % of the total sample.
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 11 A multivariate analysis of variance on scores of sexual prejudice and ASSMP revealed
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 13 a significant effect of period of data collection (Wilks’s $\Lambda = .98$, $F(2, 1291) = 16.61$, $p <$
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 15 $.001$, $\eta_p^2 = .03$), gender (Wilks’s $\Lambda = .99$, $F(2, 1291) = 4.25$, $p < .05$, $\eta_p^2 = .01$), marital status
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 17 (Wilks’s $\Lambda = .99$, $F(2, 1291) = 4.05$, $p < .05$, $\eta_p^2 = .01$), parental status (Wilks’s $\Lambda = .98$, $F(2,$
 18
 19 $1291) = 13.82$, $p < .001$, $\eta_p^2 = .02$), and field of study (Wilks’s $\Lambda = .98$, $F(6, 2582) = 4.34$, $p <$
 20
 21 $.001$, $\eta_p^2 = .01$). Table 1 contains means and standard deviations. Univariate analyses of
 22
 23 variance showed that participants who completed online questionnaires before the SSMP law
 24
 25 was passed reported lower levels of sexual prejudice, $F(1, 1292) = 30.30$, $p < .001$, $\eta_p^2 = .02$,
 26
 27 and higher levels of ASSMP, $F(1, 1292) = 23.95$, $p < .001$, $\eta_p^2 = .02$, than participants who
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 29 completed online questionnaires since the SSMP law was passed. Women reported lower
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 31 levels of sexual prejudice, $F(1, 1292) = 7.42$, $p < .01$, $\eta_p^2 = .01$, and higher levels of ASSMP,
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 33 $F(1, 1292) = 6.62$, $p < .05$, $\eta_p^2 = .01$, than men. Non-parent participants reported lower levels
 34
 35 of sexual prejudice, $F(1, 1292) = 27.59$, $p < .001$, $\eta_p^2 = .02$, and higher levels of ASSMP, F
 36
 37 $(1, 1292) = 13.25$, $p < .001$, $\eta_p^2 = .01$, than parents. Finally, Tukey post-hoc tests for field of
 38
 39 study revealed that students of Human and Social Sciences (HSS) reported lower levels of
 40
 41 sexual prejudice, $F(3, 1292) = 6.33$, $p < .001$, $\eta_p^2 = .01$, and higher levels of ASSMP, $F(3,$
 42
 43 $1292) = 7.92$, $p < .001$, $\eta_p^2 = .02$), than students of Sciences, Law, and Other Fields of study.
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57 In order to test H1, correlations among continuous variables including age were
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 59 calculated (Table 2). With the exception of age, the correlations between ASSMP and the
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1 other variables were significant, supporting H1. Indeed, the higher levels of sexual prejudice
 2 ($r = -.70, p < .01$), religiosity ($r = -.53, p < .01$) and beliefs that homosexuality is learned ($r =$
 3
 4 $-.64, p < .01$), the less participants are in favor of same-sex marriage and parenting. Moreover,
 5
 6 the higher levels of left-wing political orientation ($r = -.70, p < .01$), number of GL persons (r
 7
 8 $= .19, p < .01$), same-sex couples ($r = .14, p < .01$) and same-sex parents ($r = .06, p < .05$)
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 10 known by participants, the more participants are in favor of same-sex marriage and parenting.
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13 **Mediation and Moderated Mediation Effects**

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Mediation analysis consists in testing a causal sequence in which a predictor influences a mediator, which in turn influences an outcome. This approach focuses on the indirect effect which represents how the outcome is influenced by the predictor. The widely used “causal steps method”, developed by Baron and Kenny (1986), has been recently criticized especially because this procedure does not require any kind of inferential test on the indirect effects, but logically infers the existence of an indirect effect from the outcome of a set of null hypothesis tests (for extensive critics and explanations, see Hayes, 2013). To face these limitations, Hayes (2013) developed a macro for SPSS and SAS that allows us to examine a hypothesis of an indirect effect (i.e., the effect of an independent variable on a dependent variable through a mediator) with a single inferential test providing confidence intervals. In line with this approach, Hayes (2015) developed a *conditional process analysis* for testing moderated mediating effects.

From this perspective, in order to test H2, we first tested 6 mediation models (one for each independent variable) with the PROCESS macro for SPSS (model 4) (Hayes, 2013), controlling for the other independent variables, and for period of data collection and age, gender, marital status¹, parental status and field of study of participants. In order to test H3 for those of the models with a significant indirect effect at the mediation analysis, we then

¹ As mentioned above, marital status was considered as a two-category variable (single vs coupled participants). Moderated mediational analyses with marital status as a three-category variable (single, non-married couples, married couples) were also performed and revealed similar results to those presented here.

performed a conditional process analysis using the covariables mentioned above, by adding gender as a moderator of indirect effects (model 58 in PROCESS, see Figure 1). Finally, when a conditional indirect effect was significant, we examined it at values of the moderator (i.e., distinctively for women and for men). In both mediation analyses and moderated mediation analyses, effects were calculated using 10,000 bootstrapping samples, generating 95% confidence intervals of the bias-corrected bootstrap type, and were considered significant when 0 fell out of the confidence interval (Hayes, 2015). Before we performed these analyses, we assessed multicollinearity between independent and control variables by examining the variance inflation factor (VIF), which indicated no multicollinearity problem ($1.06 < \text{VIFs} < 2.41$).

Table 3 contains results for the models with religiosity, political orientation or etiological beliefs as independent variables, and Table 4 contains results for the models with number of GL persons known, number of same-sex couples known or number of same-sex parents known as independent variables. For moderated mediation models, only indirect conditional effects are presented (some coefficients of indirect effects slightly changed from mediation analyses to moderated mediation analyses but significance patterns were similar).

Mediation analyses partly supported H2. Mediation analyses results revealed significant direct effects on ASSMP for religiosity ($B = -1.54, p < .001$), left-wing political orientation ($B = 1.92, p < .001$) and etiological beliefs ($B = -3.61, p < .001$) and number of same-sex couples ($B = .35, p < .05$), and nonsignificant direct effects for number of GL persons ($B = .18, p > .05$) and number of same-sex parents ($B = .53, p > .05$). As for the mediator, it appears that higher levels of sexual prejudice were significantly associated with lower levels of ASSMP ($B = -5.88, p < .001$). Finally, indirect effects of religiosity ($B = -.77, p < .05$), political orientation ($B = .45, p < .05$), etiological beliefs ($B = -2.56, p < .05$), number of GL persons ($B = .23, p < .05$) and number of same-sex couples known ($B = .16, p$

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< .05) on ASSMP through sexual prejudice were significant, and the indirect effect of number of same-sex parents known was nonsignificant ($B = -.01, p > .05$). Moreover, higher levels of religiosity ($B = .13, p < .001$) and etiological beliefs ($B = .43, p < .001$) were associated with higher levels of sexual prejudice. Higher levels of left-wing political orientation ($B = -.08, p < .001$), number of GL persons known ($B = -.04, p < .001$) and number of same-sex couples known ($B = -.03, p < .001$) were associated with lower levels of sexual prejudice.

As no mediation effect was found for the number of same-sex parents known, no moderated mediation analysis was performed for this independent variable. The moderated mediation analyses, looking at the moderating role of gender on the mediation effects, supported H3. Firstly, we found that sexual prejudice mediated the effect of religiosity ($B = -1.00, p < .05$), left-wing political orientation ($B = .43, p < .05$) and etiological beliefs ($B = -.90, p < .05$) on ASSMP in both women and men, with a stronger mediation effect in men (respectively, $B = -1.39, p < .05, B = .73, p < .05$, and $B = -3.12, p < .05$) than in women (respectively, $B = -.39, p < .05, B = .30, p < .05$, and $B = -2.21, p < .05$). Secondly, we found that sexual prejudice mediated the effects of number of GL persons known ($B = .38, p < .05$) and number of same-sex couples known ($B = .51, p < .05$) on ASSMP in men (number of GL persons known, $B = .55, p < .05$; number of same-sex couples known, $B = .49, p < .05$) but not in women (number of GL persons known, $B = .11, p > .05$; number of same-sex couples known, $B = .04, p > .05$).

Discussion

This study aimed to extend knowledge about the mediation role of sexual prejudice moderated by gender, on the effects of the main factors of attitudes toward same-sex marriage and parenting identified in the literature.

Regarding our first aim focusing on the association between such attitudes and the factors examined here, the findings support previous findings : the higher the levels of sexual

1 prejudice, religiosity and beliefs that homosexuality is learned, the less participants are in
2 favor of same-sex marriage and parenting ; the higher the levels of left-wing political
3 orientation, number of GL persons, same-sex couples and same-sex parents known by
4 participants, the more participants are in favor of same-sex marriage and parenting. Moreover,
5 the results suggest a hierarchy of associations. Indeed, ASSMP was strongly associated with
6 attitudes related to homosexuality (sexual prejudice, etiological beliefs), less strongly
7 associated with ideologies (religiosity, political orientation), and weakly associated with the
8 contact variables. In particular, the number of same-sex parents known was very weakly
9 associated with ASSMP, but significant due to a large sample size. The literature reports few
10 studies on the issue but this result seems relatively consistent with the work of Morse et al.
11 (2007) showing that contact with same-sex parents was not associated with the evaluation of
12 parenting competencies in same-sex parents nor with the perception of the risks for their
13 children of being raised in this family context. However, to date, knowledge has not been
14 sufficient to minimize the effect of contact with same-sex parents on attitudes toward same-
15 sex marriage and parenting. In fact, Morse et al. (2007) used a dichotomous variable to assess
16 contact with same-sex parents (yes versus no) that does not take into account neither the
17 quantity nor the quality of these contacts. Moreover, it must be noted that the present study
18 does not take into account the quality of contacts, that the average number of same-sex
19 parents known by the participants in our sample was extremely low, and that the variability
20 between participants was probably too weak to highlight such links. Moreover, previous
21 studies indicate that the higher the number of GL persons known, the stronger are the positive
22 effects of social contact on attitudes (Herek, 2009a), provided that these relations are
23 sufficiently close (Herek & Capitanio, 1996), and our study focused on the number of GL
24 persons, same-sex couples and same-sex parents known by the participants, not on the degree
25 of closeness and intimacy with them. It could also be hypothesized that contact with same-sex
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1 parents is not so informative and that GL persons and same-sex couples provide enough
2 information about GL persons' lifestyles, leading people to understand that they are able to
3 provide a safe environment for children. In the future, this issue will deserve further
4 investigation.
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9 Regarding our second and third aims, except for the number of same-sex parents
10 known which we discussed above, the results highlight the mediation role of sexual prejudice,
11 but also reveal that this role depends on the gender of participants. In line with previous
12 findings (Becker, 2012; Hollekim et al., 2012; Lee & Hicks, 2013; Merino, 2013; Sigillo et
13 al., 2012; Todd & Hong, 2012), men were less favorable to same-sex marriage and parenting
14 than women but, above all, two different patterns of results appear, based on the moderation
15 role of gender. The first pattern reveals that sexual prejudice reinforced the negative effects of
16 religiosity and etiological beliefs and the positive effects of left-wing political orientation on
17 attitudes about same-sex marriage and parenting, but more strongly in men than in women.
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19 The second pattern reveals that sexual prejudice reinforced the positive effects of number of
20 GL persons known and number of same-sex couples known on attitudes about same-sex
21 marriage and parenting in men but not in women.
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38 As mentioned above, the issue of the mediation effect of sexual prejudice moderated
39 by gender was not addressed as such in the literature, which only delivers segmented
40 information. Indeed, concerning the effect of sexual prejudice on attitudes toward same-sex
41 marriage and parenting (see path b_2 , Figure 1), Moskowitz et al. (2010) showed that this
42 association was not moderated by gender. Our results are in line with this finding and
43 highlight that, in fact, models of moderated moderation are significant because gender
44 moderates the effect of the independent variables on sexual prejudice. Concerning this latter
45 part of the models (see path a_2 , Figure 1), available data are quite scattered in the literature.
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for male and female, while our results revealed a stronger effect in males than in females.

Baunach and Burgess (2010) also showed that having at least one gay or lesbian friend reduces sexual prejudice for both male and female students, with a larger and stronger effect for male respondents, and that having at least one gay or lesbian family member has no significant effect on sexual prejudice, whatever the participants' gender. These findings showing an asymmetry between men and women are partly in line with our results which indicated that this effect exists in men and not in women, but the comparison with this study is not totally appropriate because our variable aggregates contact with family members, friends and colleagues.

Adherence to gender norms could be central in these processes. Indeed, the literature on sexual prejudice shows that men hold more negative attitudes toward GL persons than women (Herek, 2009a), especially because they are under greater pressure to maintain and defend their masculine status, which is over-valued in society compared to feminine status (Whitley & Kite, 2009). Unlike women, men learn from societal norms that they have to be dominant and not submissive, masculine and not feminine. Of course, women are also under the influence of gender norms, but they are more flexible with respect to them, especially since these norms often disadvantage them in their daily lives (employment, household tasks, wages, etc.) (Munoz Boudet, Petesch, Turk, & Thumala, 2012). Concerning religiosity, religious discourse advocates the importance of gender difference and the importance of maintaining different roles and functions for each gender (Béraud, 2013). People with a high level of religiosity are also likely to be exposed to discourses based on sacred texts which, in many religions, argue that homosexuality is an abomination. In fact, in religious discourses and texts, male homosexuality is more stigmatized than feminine homosexuality, which is rarely addressed by religions. As a consequence, sexual prejudices can be expected to be more sensitive to religious discourses in men than in women, as suggested by our results.

1 Concerning political orientation, right-wing persons tend to be more conservative with regard
2 to individual rights and prefer tradition to social progress (Jost, Federico, & Napier, 2009).

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4 Although men are under special pressure to respect these standards and to ensure that these
5 traditional gender norms are respected in society, which is less true for women, politically
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7 left-wing men could feel less pressured by these norms and thus they do not need sexual
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9 prejudice to defend their masculine status. The moderated effect of gender on the association
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11 between etiological beliefs and sexual prejudice can also be examined from the standpoint of
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13 gender norms: studies on the issue are rare, however McCutcheon and Morrison (2015) show
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15 that the more people believe that homosexuality is acquired, the more they adhere to
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17 traditional gender norms, without indicating whether this correlation is different between men
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19 and women. Gay men and, to a lesser extent, lesbian women are perceived to demonstrate
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21 opposite-sex characteristics (Blashill & Powlishta, 2009; Kite & Deaux, 1987; McCreary,
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23 1994). Thus, believing that sexual orientation can be fluctuating, resulting from a choice, or
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25 that it is learned, could lead individuals who strongly adhere to traditional gender norms to
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27 fear porosity between masculinity and femininity. From the functional perspective (Herek,
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29 2009a), sexual prejudice could play a defensive role against the jeopardization of gender
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31 norms, especially among men because of the social overvaluation of masculinity. Further
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33 investigation is needed to test the mediation role of adherence to traditional gender norms on
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35 the association between etiological beliefs and sexual prejudice.
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46 Finally, having contacts with gay and lesbian people or couples leads them to realize
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48 that masculine gender norms are not jeopardized by these groups, or even makes their
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50 normative representation of gender more flexible, which reduces their sexual prejudice. In
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52 women, the defensive function of sexual prejudice is less prevalent (Herek & Capitanio,
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54 1999); as a consequence contacts appear to have little effect on their attitudes toward GL
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56 persons who do not represent such a threat to femininity.
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1 Overall, these results raise perspectives on attitudes toward same-sex marriage and
2 parenting. Firstly, they support the hypothesis that these attitudes are not completely
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4 underpinned by the adherence to a traditional family model supposed to provide the only
5
6 satisfying environment for children. Indeed, the effect of ideologies such as religiosity and
7
8 political orientation on attitudes toward same-sex marriage and parenting is partly due to
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10 sexual prejudice. In other words, contrary to what the opponents claimed in France, one can
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12 assume that this opposition by right-wing circles is partly based on sexual prejudice. By
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14 highlighting the mediation role of sexual prejudice, the findings of the current study increase
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16 the need to reduce sexual prejudice. Secondly, highlighting these moderation effects is
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18 encouraging changing of attitudes toward same-sex parents and their children in religious and
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20 right-wing oriented circles. Indeed, while it is worrying that sexual prejudice persists or is
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22 amplified in a context of social debate about social equality for sexual minorities, the effect of
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24 ideologies, mostly religious ideologies, must be able to be reduced. The work of many
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26 associations is a deep and long-term effort to liberalize the principles dictated and defended
27
28 by religious or political institutions. However, considering things from the individual's point
29
30 of view, interventions designed to change attitudes cannot aim to alter any person's religious
31
32 or political orientation. As sexual prejudice mediates the effect of religiosity and these
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34 attitudes, then reducing sexual prejudice in these specific groups would make them less
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36 inconsistent with support for advances in sexual minorities' civil rights. This highlights the
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38 need to deconstruct negative beliefs about homosexuality during debates, even when
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40 prejudice against homosexuality itself is not explicit in opponents' discourse. In line with this,
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42 interventions also need to deconstruct the erroneous beliefs about the etiology of
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44 homosexuality. One very concrete application consists in stating that homosexuality, like
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46 heterosexuality or bisexuality, does not result from a choice but from a mix of genetic,
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48 biological and social factors (American Psychological Association, 2008 ; Perrin, 2002), and
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1 certainly not from the pressure of trends, and that even if sexual behaviors could be
2 controlled, sexual orientation itself is not controllable. However, we must remain cautious
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4 about the representations that individuals make of the innate character of homosexuality. As
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6 stated above, essentialist beliefs represent a double-edged sword in that biological conception
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8 of homosexuality could reinforce a medical pathologization with new form of “therapies”, for
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10 example gene therapies. Thus, it seems prudent in intervention to mention the scientific
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12 knowledge that does not allow establishing a consensus about the etiology of homosexuality,
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14 which may have biological and social origins, possibly interacting with each other, like many
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16 other psychological characteristics.
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21 From an interventional point of view, it seems difficult to intervene concretely in
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23 people’s social environment by encouraging them to develop preferential relationships with
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25 GL persons when they do not know any such people but companies and institutions such as
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27 schools or universities can be encouraged to promote diversity and inclusion. Public opinion
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29 plays a fundamental role in the ongoing advancement of minority sexual rights as citizen
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31 attitudes, and especially students’ attitudes, participate in supporting, rejecting, even
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33 determining the nature of bills concerning recognition of same-sex unions and families.
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37 Interventions should be particularly offered to students, particularly with regard to their future
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39 professional integration, which will lead many of them to interact with sexual minorities. For
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41 several years, the first author has developed specific teachings at his university, one devoted
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43 to sexual prejudice (undergraduate psychology program), and the other devoted to same-sex
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45 parenting (master developmental psychology program). However, to our knowledge, these
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47 curricula remain exceptions in French higher education. Finally, it is also possible to intervene
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49 indirectly by encouraging the visibility of GL persons and by working to promote a social
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51 climate that is more favorable to this visibility. The literature on the effect of parasocial
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53 contact on attitudes toward sexual minorities (Bonds-Raacke, Cady, Schlegel, Harris, &
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1 Firebaugh, 2007; Schiappa, Gregg, & Hewes, 2005, 2006) also suggests that providing
2 positive models of such families through the media would help to improve attitudes toward
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4 same-sex marriage and parenting.
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6 **Strengths, limitations, and future research**

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9 The current study provides knowledge in an international context with more and more
10 countries engaging in debate about same-sex unions and/or parenting. It provides a better
11 understanding of the process that links public opinions on same-sex couples and families with
12 religiosity, political orientation, beliefs about the etiology of homosexuality and contact with
13 gay men and lesbians. Based on a large sample, the analysis of mediation and moderated
14 mediation models relies on a more robust approach than previous studies, and also helps to
15 highlight in an even more precise way the role of gender in attitudes toward same-sex
16 marriage and parenting.
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29 Several limitations to this study should be addressed. Firstly, the design of the present
30 study was cross-sectional, therefore, the results should be interpreted cautiously especially
31 considering the mediation processes. Secondly, data were collected in France during the
32 period of debates concerning the opening of marriage and adoption to same-sex couples,
33 participants were self-selected and a social desirability bias was likely to occur. The large
34 demonstrations against the bill, with an offensive discourse against sexual minorities and their
35 families, probably led to a crystallization of public opinion. Thirdly, due to legal reasons,
36 information about ethnic diversity was not collected. Finally, the data did not allow us to run a
37 separate analysis for attitudes toward same-sex marriage and attitudes toward same-sex
38 parenting, probably due to the proximity or confusion of these aspects in the debates at the
39 time of the data collection in France. It would be useful to replicate this study in countries
40 where marriage, but not same-sex parenting, is already legal.
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1 Changes in legislation in favor of the civil rights of sexual minorities such as marriage
2 and parenting are essential because the legal context and the social climate are associated with
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4 GL persons' psychological well-being. In an attempt to better understand the psychological
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6 process involved in attitudes toward these rights, future research should examine participants'
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8 more general values in terms of adherence to traditional couple and family models and the
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10 extent to which these models appear more suitable for society and children's well-being.
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12 Indeed, exploring attitudes toward the other forms of non-traditional families such as single-
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14 parent families or stepfamilies (same-sex families included) could enable us to identify the
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16 role of sexual prejudice in the attitudes of specific groups with a high degree of religiosity or
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18 right-wing orientation, for example.
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24 The movements granting and protecting civil rights for sexual minorities are highly
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26 supported by arguments on the safety of the same-sex union and parenting context for child
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28 development and arguments about the psychological benefits for people more directly
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30 concerned. However, explicit arguments that contradict sexual prejudice occurring in debates
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32 about these issues should not be neglected. Laws and policy makers should not only focus on
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34 the aims and technical aspects of such laws, and on its consequences for the populations
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36 concerned and society as a whole, as was the case during the debates in France in 2012 and
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38 2013. As sexual prejudice appears to be part of the process that leads individuals to
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40 reject/support such advances, laws and policy makers should also strive to support public
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42 opinion toward accepting these advances by explicitly deconstructing in advance the
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44 prejudices which target GL persons, even if these prejudices seem to them unusual or rare in
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46 society.
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53 **Compliance with Ethical Standards**

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55 Ethical approval: All procedures performed in studies involving human participants were in
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57 accordance with the ethical standards of the institutional and/or national research committee
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1 and with the 1964 Helsinki declaration and its later amendments or comparable ethical
2 standards.

3
4 Informed consent: Informed consent was obtained from all individual participants included in
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Table 1

Descriptive Statistics

	Sexual prejudice	ASSMP
Period of data collection		
Before SSMP law	1.45 (0.52)	50.49 (9.03)
Since SSMP law	1.60 (0.76)	48.16 (11.31)
Gender		
Female	1.41 (0.49)	51.44 (8.15)
Male	1.62 (0.70)	47.01 (11.40)
Marital status		
Single	1.49 (0.58)	49.97 (9.75)
Couple	1.45 (0.55)	50.30 (9.14)
Parental status		
Non-parent	1.46 (0.53)	50.38 (9.18)
Parent	1.83 (0.01)	44.16 (13.11)
Field of study		
HSS	1.38 (0.48)	52.09 (7.53)
Sciences	1.57 (0.65)	48.17 (10.46)
Law	1.62 (0.67)	46.70 (11.43)
Other	1.54 (0.56)	48.76 (10.51)
Total	1.47 (0.56)	50.00 (10.00)

Note. Values are average scale scores, and values in parentheses represent standard deviations. ASSMP = attitudes toward same-sex marriage and parenting (T score)

Table 2

Correlations between variables

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age of participants	22.28	4.97	—								
2. ASSMP	50.00	10.00	-.02	—							
3. Sexual prejudice	1.48	0.57	.03	-.70**	—						
4. Religiosity	1.81	1.01	.06*	-.53**	.48**	—					
5. Left-wing orientation	3.41	1.02	.11**	.51**	-.40**	-.34**	—				
6. Etiology beliefs	1.68	0.64	.01	-.64**	.65**	.42**	-.34**	—			
7. Number of GL persons known	2.78	1.15	.07*	.19**	-.20**	-.04	.14**	-.14**	—		
8. Number of same-sex couples known	1.76	1.00	.19**	.14**	-.14**	-.03	.11**	-.07**	.42**	—	
9. Number of same-sex parents known	1.10	0.29	.01	.06*	-.07**	-.02	.07**	-.02	.16**	.30**	—

Note. ASSMP = attitudes toward same-sex marriage and parenting (T score).

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

Table 3

Effects of Mediation and Moderated Mediation Analyses for Religiosity, Political Orientation or Etiologic Beliefs as Independent Variable

Effect ^a	Outcome	Independent variable (IV)					
		Religiosity		Political orientation		Etiologic beliefs	
		B (SE)	95% CI	B (SE)	95% CI	B (SE)	95% CI
Mediation analysis							
IV (a ₁)	SP	.13 (.01)***	[.10, .16]	-.08 (.01)***	[-.10, -.05]	.43 (.02)***	[.38, .48]
Sexual prejudice (SP) (b ₁)	ASSMP	-5.88 (.47)***	[-6.80, -4.95]	-5.88 (.47)***	[-6.80, -4.95]	-5.88 (.47)***	[-6.80, -4.95]
Direct effect of IV (c')	ASSMP	-1.54 (.27)***	[-2.08, -1.00]	1.92 (.22)***	[1.48, 2.36]	-3.61 (.41)***	[-4.41, -2.81]
Indirect effect	ASSMP	-.77 (.12)*	[-1.03, -0.57]	.45 (.09)*	[.28, .64]	-2.56 (.26)*	[-3.12, -2.07]
Moderated mediation analysis ^b							
Gender X IV (a ₂)	SP	.15 (.02)***	[.11, .20]	-.06 (.02)**	[-.11, -.02]	.10 (.04)**	[.03, .18]
Gender X SP (b ₂)	ASSMP	-.65 (.60)	[-1.84, .53]	-.65 (.60)	[-1.84, .53]	-.65 (.60)	[-1.84, .53]
Conditional indirect effect	ASSMP	-1.00 (.21)*	[-1.43, -0.60]	.43 (.18)*	[.07, .80]	-.90 (.42)*	[-1.71, -0.06]
Among women	ASSMP	-.39 (.10)*	[-.61, -.20]	.30 (.10)*	[.13, .51]	-2.21 (.29)*	[-2.82, -1.68]
Among men	ASSMP	-1.39 (.20)*	[-1.82, -1.03]	.73 (.17)*	[.43, 1.10]	-3.12 (.39)*	[-3.90, -2.37]

Note. For each model, the other IVs, period of data collection, age, gender, marital status and parental status were controlled. B values are unstandardized regression coefficients. IV = independent variable; ASSMP = attitudes toward same-sex marriage and parenting; CI = confidence interval; SE = standard error.

^a Paths on Figure 1 are given in parentheses.

^b For parsimony reasons, only interaction effects and conditional indirect effect are reported. The significance of the effect of IVs on sexual prejudice (a₁), sexual prejudice on ASSMP (b₂) and IVs on ASSMP (c') did not change from the mediation analyses to the moderated mediation analyses.

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

Table 4

Effects of Mediation and Moderated Mediation Analyses for Number of G/L Persons, Same-Sex Couples or Same-Sex Parents Known as Independent Variable

Effect ^a	Outcome	Independent variable (IV)					
		Number of Gay/Lesbian persons known		Number of same-sex couples known		Number of same-sex parents known	
		B (SE)	95% CI	B (SE)	95% CI	B (SE)	95% CI
		Mediation analysis					
IV (a ₁)	SP	-.04 (.01)***	[-.02, .10]	-.03 (.01)*	[.02, .67]	.01 (.05)	[-.09, .09]
Sexual prejudice (SP) (b ₁)	ASSMP	-5.88 (.47)***	[-6.80, -4.95]	-5.88 (.47)***	[-6.80, -4.95]	-5.88 (.47)***	[-6.80, -4.95]
Direct effect of IV (c')	ASSMP	.18 (.16)	[-.12, .49]	.35 (.16)*	[.02, .67]	.53 (.62)	[-.69, 1.75]
Indirect effect	ASSMP	.23 (.07)*	[.10, .37]	.16 (.08)*	[.01, .32]	-.01 (.27)	[-.56, .52]
Moderated mediation analysis ^b							
Gender X IV (a ₂)		-.06 (.02)**	[-.10, -.02]	-.08 (.03)**	[-.13, -.03]		
Gender X SP (b ₂)		-.65 (.60)	[-1.84, .53]	-.65 (.60)	[-1.84, .53]		
Conditional indirect effect	ASSMP	.38 (.14)*	[.11, .68]	.51 (.15)*	[.22, .83]		
Among women	ASSMP	.11 (.07)	[-.02, .26]	.04 (.08)	[-.12, .20]		
Among men	ASSMP	.49 (.13)*	[.26, .78]	.55 (.14)*	[.29, .86]		

Note. For each model, the other IVs, period of data collection, age, gender, marital status and parental status were controlled. As mediation test was not significant for Number of same-sex parents known, no moderated mediation analysis was performed for this independent variable. B values are unstandardized regression coefficients. IV = independent variable; ASSMP = attitudes toward same-sex marriage and parenting; CI = confidence interval; SE = standard error.

^a Paths on Figure 1 are given in parentheses.

^b For parsimony reasons, only interaction effects and conditional indirect effect are reported. The significance of the effect of IVs on sexual prejudice (a₁), sexual prejudice on ASSMP (b₂) and IVs on ASSMP (c') did not change from the mediation analyses to the moderated mediation analyses.

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

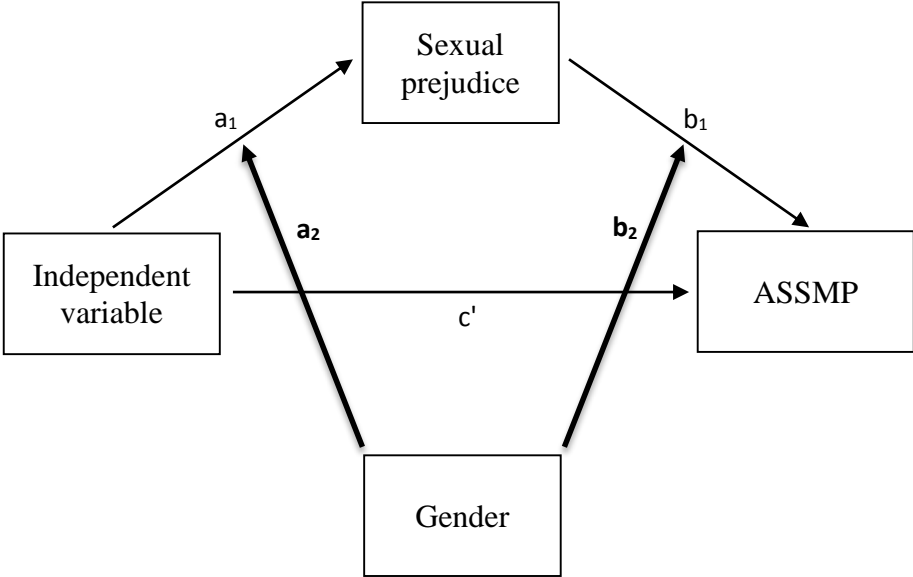


Figure 1. Moderated mediation model with sexual prejudice as mediator and gender as moderator

Note. ASSMP = attitudes toward same-sex marriage and parenting